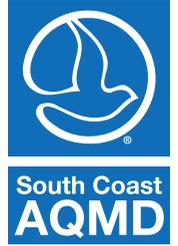


SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT



Comments and Responses to Comments

Volume 1 of 2

2016 AIR QUALITY MANAGEMENT PLAN



March 2017

FINAL 2016 AQMP

COMMENTS AND RESPONSES TO COMMENTS ON THE 2016 AQMP

MARCH 2017

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Section 4 – Comments and Responses to Comments on the Draft Final 2016 AQMP

PREFACE

A total of one hundred nineteen (119) comment letters have been received in the course of the 2016 AQMP development, including eight (8) comment letters received on the preliminary draft control measures for SCAQMD's stationary and mobile sources, 69 comment letters received on the Draft 2016 AQMP, 32 comment letters received on the Revised Draft 2016 AQMP, and 10 comment letters received on the Draft Final 2016 AQMP.

This document consists of two volumes that include written comment letters and staff responses to the specific comments. Each volume comprises two sections. In Volume 1, Section 1 includes eight comment letters received on the preliminary draft control measures for stationary and mobile sources that were released to the public in April 2016. Section 2 includes 69 comment letters received on the Draft 2016 AQMP that was released on June 30, 2016.

In Volume 2, Section 3 has 32 comment letters received on the Revised Draft 2016 AQMP that was released on October 7, 2016. Section 4 has 10 comment letters received on the Draft Final 2016 AQMP that was released on December 2, 2016. The overview of comment letters received are summarized in the following table.

Volume	Section	Comment Letters Received On	Total Number	Comment Letter Number
Volume 1	Section 1	Preliminary Draft Control Measures for Stationary and Mobile Sources	8	A–H
	Section 2	Draft 2016 AQMP	69	1–69
Volume 2	Section 3	Revised Draft 2016 AQMP	32	70–101
	Section 4	Draft Final 2016	10	102–111

For some comments similar remarks have been previously made in other comment letters so the response may indicate where the reader can locate the appropriate previous response(s). Modifications have been made in the various versions of the Plan and/or Appendices in response to key comments received.

VOLUME 1

SECTION 1

COMMENTS AND RESPONSES TO COMMENTS ON THE PRELIMINARY DRAFT CONTROL MEASURES FOR STATIONARY AND MOBILE SOURCES

COMMENT LETTER NUMBER

AGENCY / COMPANY	DATE	Comment Letter Number	Page Number
American Coatings Association (ACA)	5/27/16	C	12
California Small Business Alliance (CSBA)	6/13/16	G	34
Michael Salman	4/20/16	A	1
Southern California Alliance of Publicly Owned Treatment Works (SCAP)	6/2/16	E	20
Southern California Gas Company (SoCalGas), Sempra Utilities	5/20/16	B	4
PITCO/MagiKitch'n/ANETS/PERFECT FRY COMPANY	5/31/16	D	17
Public Solar Power Coalition	6/15/16	H	38
Western States Petroleum Association (WSPA)	6/10/16	F	27

Michael Salman, April 20, 2016

From: Michael Salman <salman@history.ucla.edu>
Sent: Wednesday, April 20, 2016 1:49 PM
To: Michael Krause
Cc: Naveen Berry; Al Baez; Philip Fine
Subject: draft AQMP for stationary sources
Attachments: 2015-12-28_CalEPA_Letter_to_The_World_Bank_Group_Support_of_Zero_Routine.pdf; U.S.-Canada Joint Statement on Climate, Energy, and Arctic Leadership _whitehouse.pdf

Comment Letter A

Dear Mr Krause,

Last Thursday, April 14, I had a meeting with Naveen Berry, Al Baez, and Phil Fine to discuss well site flaring and to advocate for demonstration project support for the use of fuel cells rather than a flare at the Murphy Drill Site in Los Angeles. I have been in touch with Naveen and Phil since last summer about this matter, and spoke at the September 2015 Board meeting about the Murphy case, the idea of a demonstration project using fuel cells, and also a request that SCAQMD write a rule prohibiting routine flaring at well sites.

Naveen brought up the AQMP process and was surprised that I had not received any e-mails about it since he thought he had put me on the e-mail list. That evening Celia Diamond sent me the preliminary draft AQMP measures for stationary sources. I am still reading and processing the document, but my preliminary sense is that I am very glad to see the emphasis on making beneficial use of well site gas that might otherwise be flared.

I'm writing to introduce myself, and also to tell you a little about my work in this area in which I have informally collaborated with the World Bank's Zero Routine Flaring Initiative, as well as being focused on local well sites in the City of Los Angeles.

A-1

At the meeting with Naveen, Al, and Phil last Thursday I was accompanied by Martyn Howells, a petroleum engineer who is on the staff of the World Bank's Zero Flaring Initiative. In December 2015, the State of California signed on to the World Bank initiative, committing the State to the policy goals of: 1) not approving new routine flaring at well sites, and 2) eliminating legacy routine flaring at well sites as quickly as possible and by 2030 at the latest. I am attaching a copy the State's letter of commitment to the World Bank, signed by Matthew Rodriguez of CAL EPA.

I am also attaching a copy of the White House press release from March 10, 2016, in which the US and Canadian federal governments announced their commitments to sign on to the World Bank Zero Flaring Initiative.

In light of these developments, I want to reiterate my request that SCAQMD prohibit routine flaring at well sites, much as it already prohibits routine flaring at refineries. Please pardon me if that is not suitable for the AQMP process, as I am new to the process.

A-2

I also want to reiterate my request that SCAQMD do whatever it can to provide incentives for zero or near zero emission beneficial use of well site gas, and specifically that SCAQMD please advance support for a demonstration project using fuel cells to handle well site waste gas.

A-3

As the draft AQMP report already emphasizes, there are many options for beneficial use of well site gas in the Basin: sale through SoCalGas, generation of electricity through microturbines or fuel cells, gas-to-liquids, and

A-4

use as CNG for vehicles.

In addition, some drill sites already have gas injection wells. For example, the Murphy Drill Site in Los Angeles, for which FMOG has proposed installation of a CEB 800 flare, has long had a gas injection well. In the 1970s and early 1980s the injection well handled far more than 1 mmcf/day, until sales through SoCalGas started after 1986. Since then the injection well has hardly been used at all. In 2011-12 it was worked-over, so it could be used. Other drill sites could add a new injection well if needed.

The modern Controlled Drill Sites in the City of Los Angeles did not have flares until one was first installed at Wilmington when that site was established in 2006. All the other Controlled Drill Sites date from the late 1950s and 1960s, and they have never used flares. The Murphy Drill Site and its two sibling drill sites at Jefferson and 4th Ave have never had flares. Gas was either sold or re-injected, and there was no flare for back-up. If sale or re-injection temporarily went off line, pumping stopped.

Unlike refineries, there is no safety argument for emergency or back-up flaring at well sites during normal production operations. Drilling might be different, but 1) that can be handled by a temporary mobile flare if it is truly necessary, and 2) to the best of my knowledge no modern Controlled Drill Site in the City of Los Angeles has ever employed a flare during drilling.

For all of these reasons plus the fact that beneficial use of the gas is possible, I want to urge SCAQMD to prohibit at least all routine flaring at wells sites and then either prohibit or set extremely strict controls for emergency flaring at well sites.

Beneficial use of the gas is not only readily possible, it would also be lucrative. That was one of the main points of my meeting last week with SCAQMD staff. In the Murphy case, off-spec gas can be used in fuel cells and get a 16% average annual rate of profit over 20 years *without SGIP funding, without sale of hydrogen from trigen or any subsidies or credits for hydrogen production, and without any demonstration project funding.* Add in any of those perks and the profit rate pops.

I should add, too, that the clean-up needed for off-spec gas at well sites in Los Angeles is far simpler than the clean-up needed for bio-gas. The gas profile is more consistent and contaminants much lower than with bio-gas.

These are subjects that we discussed at some length with Naveen, Al, and Phil.

Please let me know if there is more information I can provide. I look forward to meeting you at some point during this process.

Yours

Michael Salman

A-4
Con't

Responses to Comment Letter from Michael Salman (Comment Letter A)

April 20, 2016

Response to Comment A-1:

Thank you for your interest in this AQMP process and for bringing your comments to our attention.

Response to Comment A-2:

Proposed control measure CMB-03 addresses reductions of NO_x and VOC emissions from flare gas handling at non-refinery sources, such as organic liquid loading stations, tank farms, oil and gas production facilities, landfills, and wastewater treatment facilities. Flare NO_x emissions, as well as VOC, CO and PM emissions, are currently regulated through the Best Available Control Technology (BACT) determination process in SCAQMD Rules 1303 and 1701, but there are currently no source-specific rules regulating NO_x emissions from flares at these sources. Flares have been identified as significant emitters of NO_x. Additionally, these efforts will coincide with the Zero Routine Flaring by 2030 initiative being undertaken by the World Bank, as the commenter originally mentioned. In the proposed control measure, two levels of proposed method of control would be considered: 1) routing the gas that would typically be flared and directing it to equipment that can convert or clean the gas into an acceptable renewable energy source; and 2) the installation of newer flares implementing the best available control technology. The details of the proposed control methods can be found in Appendix IV-A of the 2016 AQMP.

Response to Comment A-3:

Proposed control measure CMB-01 would seek emission reductions of NO_x and VOC from traditional combustion sources by replacement with zero and near-zero emission technologies. Fuel cells, as one of the zero and near-zero emission technologies, are one way to shift away from combustion sources generating NO_x emissions including flares. SCAQMD would seek to incentivize emission reductions from various stationary and area sources through incentive programs for the use of zero and near-zero emission technologies (e.g., fuel cells) as an effective approach in achieving immediate NO_x reductions. Details on the incentive programs regarding CMB-01 can be found in Appendix IV-A of the 2016 AQMP.

Response to Comment A-4:

CMB-03 of the 2016 AQMP seeks various pathways to control flare gas from non-refinery sources, which includes initial efforts for beneficial gas use such as transportation fuel, microturbines, fuel cells, gas cleanup for sale, and/or gas cleanup for pipeline injection, then installation and operation of BACT clean enclosed burners. Cleaning up waste gas for sale or for pipeline injection would produce near-zero emissions. NO_x reduction would also be achievable for source categories such as oil and gas production wells, tank farms, and even with the replacement of traditional thermal oxidizers.

Southern California Gas Company (SoCalGas), Sempra Utilities, May 20, 2016

Comment Letter B



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May 20, 2016

Dr. Philip Fine
Deputy Executive Officer
Planning, Rule Development, And Area Sources
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Re: Draft 2016 Air Quality Management Plan (AQMP) Control Measures

Phil
Dear Dr. Fine:

Southern California Gas Company (SoCalGas) appreciates the opportunity to provide feedback on the recently released draft Stationary and Mobile Source Control Measures for the 2016 AQMP. SoCalGas strongly supports the South Coast Air Quality Management District's (SCAQMD) efforts to develop an integrated AQMP to update the 80 ppb 8-hour ozone standard and plan for the challenging 75 ppb 8-hour ozone standard in addition to the annual and 24-hour PM 2.5 standards.

The attainment of the Clean Air Act standards is vitally important to those communities in which SoCalGas operates and provides natural gas service. SoCalGas has demonstrated its support of SCAQMD's efforts to plan for attainment of these challenging standards through its participation in the early stages of the AQMP process, including providing input to assist with White Paper development, participating in the Advisory Group, and through our ongoing commitment to provide productive feedback by engaging with staff and subject matter experts. At this critical juncture in the drafting process, we respectfully submit the following comments and hope to continue our valuable dialogue with SCAQMD.

B-1

I. Stationary Combustion Sources: CMB-01

As discussed in our May 3, 2016 meeting, SoCalGas is concerned about the scope of CMB-01 (Transition to Zero and Near-Zero Emission Technologies for Stationary Sources). In its current form, CMB-01 is broadly defined to include engines, turbines, microturbines, boilers, and flares at commercial, industrial, residential, and transportation sources. SoCalGas also remains concerned about the top-down process of committing to reduce 30% of emissions by 2023 and 60% of emissions by 2031 without identifying specific emissions inventories. Rather, we would suggest developing an emissions reduction commitment based on a bottom-up

B-2

approach starting with existing inventory profiles, with an additional filtering analysis that considers feasibility and cost-effectiveness before committing to an across-the-board percentage reduction. The newly revised AER reporting tool has the potential to assist in such an approach to develop an enforceable emission reduction estimate for this control measure. However, it is just now being implemented, and the results must be verified in the field before enforceable commitments can be developed using this new tool.

B-2
Con't

By focusing efforts on feasible, cost effective categories or groups of equipment, SCAQMD could leverage cost-effective technologies and incentive funding to achieve significant emission reductions. SoCalGas supports the concept of a Phase I Implementation Schedule that would further inform this task. However, the current approach to calculate an emission reduction requirement relying on the Fair Share reduction strategy may result in committing the District to emission reductions from stationary sources that are neither cost effective, nor feasible. Moreover, stationary sources are such a small share of the emissions inventory that setting a top-down reduction target is not appropriate until we gain a better understanding of the emissions reductions that can be achieved from mobile sources.

B-3

Our concerns are reinforced by an examination of the 2012 AQMP inventory for stationary sources, compared to the 2016 inventory shared with us. In particular, we note a significant difference in the estimates for industrial and commercial natural gas fired IC engines.

	NOx Estimate 2023 Baseline (2012 AQMP)	NOx Estimate 2023 Baseline (2016 AQMP)	Difference – 2023 Baseline (2016 AQMP) vs. 2023 Baseline (2012 AQMP)
Industrial Stationary ICE - Natural Gas (NOx) (CES 66787)	0.3421 tpd	1.278 tpd	+0.9359 tpd
Commercial Natural Gas ICE (NOx) (CES 95024).	0.1921 tpd	2.627 tpd	+2.4349 tpd

B-4

The “NOx Estimate 2023 Baseline (2012 AQMP)” was analyzed for SoCalGas by Ramboll Environ, and we submitted it to the District in 2012. We have attached that document to these comments for your reference (see Attachment 1). There may be differences in inventory protocols and classifications that have occurred since 2012, and we look forward to further discussions to understand the differences. However, these examples give us reason to urge further investigation of the feasibility and cost effectiveness of actual emission reduction technology applications, i.e. a bottom-up approach instead of a top-down approach. We suspect that there may be other areas that offer more certainty upon which to base an enforceable commitment in the AQMP.

Additionally, while fuel cells are an attractive advanced technology to incentivize, we caution mandating a technology-specific approach. Fuel cells may emit less on a megawatt-hour basis than a combined heat and power (CHP) system and, at first glance, may appear to be less costly to operate, but when boiler fuel costs are taken into account, they are actually more expensive. While natural gas prices do fluctuate, at a fully bundled price of \$0.50/therm (commodity plus transportation), fuel cells can cost an additional \$1.50/hr to \$7.50/hr to operate compared to a natural gas engine. This would be in addition to the \$7,000/kW price a customer will have to pay for a new system. Still, SoCalGas believes that the SCAQMD is on the right track. While replacing CHP with fuel cells may cost a customer additional money, new fuel cells and CHP projects will provide a customer savings on their utility bills all while emitting no more than 0.07lbs NOx/MWh. This would provide a cost effective situation for a customer, while lowering NOx emissions from the grid (i.e. in Southern California Edison's Utility Owned Generation had a NOx emission factor of 0.1 lbs/MWh, as described in their 2014 Corporate Responsibility Report).

B-5

Once categories of equipment are identified as emission reduction targets, SoCalGas would welcome the opportunity to partner in leveraging incentive dollars to achieve the reductions needed for CMB-01, CMB-02 (Emission Reductions from Commercial and Multi-Unit Residential Space and Water Heating), CMB-04 (Emission Reductions from Restaurant Burners and Residential Cooking), and BCM-01 (Further Emission Reductions from Commercial Cooking).

B-6

II. Space and Water Heating: CMB-02

SoCalGas supports a fuel neutral approach in order to achieve emissions reductions from commercial space heating furnaces, boilers, and water heaters. While we support the application of lower NOx units to replace commercial central furnaces, we urge SCAQMD to work with manufacturers to set manageable timelines for development and commercialization. Given manufacturers' recent reliability, durability, and safety concerns regarding the new 14 ng/joule NOx residential central furnaces, we recommend that the SCAQMD work closely with industry to resolve these design and safety issues before proposing similar mandatory emission limits on commercial size space heating equipment. To help create a path forward, SoCalGas could partner with SCAQMD and the manufacturers to invest in research, and to conduct longer-term field demonstrations.

B-7

SoCalGas encourages the development of an incentive program that is designed to take advantage of existing energy efficiency programs targeting higher efficiency water and condensing gas space-heating products. Again, the SCAQMD should focus valuable incentive dollars on replacing older units with near zero and zero technologies (e.g. replacing 40 ng/joule NOx units with newer, less polluting 10 ng/joule NOx water heaters and 14 ng/joule NOx space heaters). In determining cost effectiveness, we recommend considering the length of useful life left. Early replacement programs should evaluate the optimum remaining useful life for replacement candidates.

B-8

III. Restaurant and Cooking Operations: CMB-04, BCM-01

With regard to the control measures addressing residential and commercial cooking emissions, CMB-04 and BCM-01, SoCalGas encourages SCAQMD to work with manufacturers to set manageable timelines for development and commercialization of new equipment. SoCalGas would be happy to facilitate a meeting at the Foodservice Equipment Center between commercial food service equipment manufacturers, restaurant owners, and SCAQMD staff so as to assist with the identification of priority sources targeted for emissions reductions. Further, since these categories of equipment have never before been subject to regulation, SoCalGas recommends conducting an initial study to investigate NOx emissions profiles. Collaboration between SCAQMD and SoCalGas on such a study and the subsequent research and development to identify new, low NOx burner technologies could provide pathways to demonstrate new technologies for use in actual restaurant operations. Such a collaborative effort could result in engagement with over 60 manufacturers and suppliers, and over 25 business and trade organizations. We are taking the first step towards a large-scale collaborative effort by facilitating a meeting between regulators and manufacturers of restaurant equipment at SoCalGas' Energy Resource Center in early June.

B-9

IV. Mobile Source Measures: MOB-08

In addition, SoCalGas strongly supports the use of incentives in the Mobile Source Control Measures to drive the introduction of natural gas, near zero transportation solutions. The CARB Mobile Source Strategy Control Measure "Further Deployment of Cleaner Technology: On-Road Heavy-Duty Vehicles" seems to cover the same population of on road heavy duty trucks as MOB-08 (Accelerated Retirement of Older On-Road Heavy-Duty Vehicles). We would ask that SCAQMD and CARB provide an explanation about how the two control measures will work together. For example, MOB-08 emission reductions are listed as "TBD." Although SCAQMD staff has explained that those measures labeled "TBD" are not necessary for attainment, SoCalGas believes that cost effective and feasible emissions reductions can be identified for MOB-08 for inclusion in the attainment strategy. The similar measure proposed by the California Air Resources Board (CARB) in the Mobile Source Strategy (MSS) has a commitment for a 34 ton per day reduction by 2023. MOB-08 provides a clear pathway for emissions reductions and should be implemented in coordination with the corresponding MSS measure.

B-10

Moreover, inclusion of MOB-08 in the attainment strategy will send the right signal to engine manufacturers and other market participants. As SCAQMD is well-aware, in 2015, Cummins Westport Inc. (CWI) certified the world's first heavy-duty engine at near-zero emission levels—90 percent below the existing federal standard, and certified to meet ARB's lowest-tier optional low-NOx emission standard at 0.02 g/bhp-hr NOx. This "next generation" heavy-duty natural gas engine is now commercially available for transit bus, refuse, school bus, and medium-duty truck applications. Additional near-zero-emission heavy-duty natural gas engines are expected to follow by 2018, addressing a wider array of medium- and heavy-duty on-road applications. The tailpipe emissions of HDVs running on these engines are as low as emissions associated with generating the electricity used to charge heavy-duty battery-electric vehicles (BEVs) with a state of the art generation plant. When paired with RNG, which provides

B-11

the lowest carbon intensity of any transportation fuel available today, this technology can provide significant GHG emissions reductions (80 percent or greater). Further detail on this technology and associated benefits are provided in the “Game Changer Technical Report,” prepared by Gladstein, Neandross & Associates (GNA) (see Attachment 2 for the Executive Summary).

B-11
Con't

SoCalGas appreciates the opportunity to provide these comments and we look forward to further clarifying these issues as we continue our dialogue with SCAQMD staff. Please do not hesitate to contact me to discuss any questions or concerns.

B-12

Best Regards,



Noel Muyco

Attachments

- 1- Environ NOx Estimate 2023 Baseline (2012 AQMP)
- 2- Game Changer Executive Summary

Responses to Comment Letter from SoCalGas (Comment Letter B)

May 20, 2016

Response to Comment B-1:

SCAQMD staff appreciates your comments on the preliminary draft stationary and mobile source control measures for the 2016 AQMP.

Response to Comment B-2:

The proposed control measure CMB-01 of the Draft 2016 AQMP released on June 30, 2016 has been updated from the preliminary draft version released on April 8, 2016. Emission reductions have been updated, for which about 14 and 27 percent of reductions are estimated to achieve by 2023 and 2031, respectively. Although the AQMP can use a top down approach in estimating emission reductions for planning purposes, more detailed analyses will be conducted during actual rulemaking, including the refinement of existing inventory, feasibility and cost-effectiveness.

Response to Comment B-3:

Incentive funding for zero- and near-zero emission technologies is one of the 2016 AQMP approaches. Feasibility and cost-effectiveness of the technology will be considered when selecting incentives. The emission reduction requirement was initially calculated relying on the fair share reduction strategy; however, the proposed emission reductions in the 2016 AQMP are based on the reductions from both stationary and mobile sources and surpass the required reductions.

Response to Comment B-4:

The 2016 AQMP uses the latest inventory for emission sources. The NOx estimates 2023 baseline (2012 AQMP) for CES 66787 and 95024 provided in the comment are not correct numbers. For CES 66787, the 2023 baseline NOx estimate in 2012 AQMP was 1.010 tpd (versus 1.278 tpd in 2016 AQMP). There is no CES 95024 in 2012 AQMP. CES 47167 (*Commercial Natural Gas Combustion – Other; 5.336 tpd*) exists in 2012 AQMP, however, in the 2016 AQMP that category is split into two new categories - CES 95024 (2.627 tpd) and 95025 (2.578 tpd), thus totally 5.205 tpd. Higher NOx estimate 2023 baseline (2016 AQMP) inventories for CES 66787 resulted from updated inventories for the existing source categories since the 2012 AQMP. The feasibility and cost-effectiveness of emission reduction technology applications will be considered when actual rulemaking process takes place.

Response to Comment B-5:

Fuel cells are one of the attractive advanced technologies and are not mandated, but considered as a near-zero emission technology. As the commenter stated, replacing the combined heat and power (CHP) with fuel cells could bring a customer savings on their utility bills while emitting less NOx emissions from the grid. SCAQMD staff will continue to research ways to lowering operational costs.

Response to Comment B-6:

SCAQMD staff would welcome the opportunity to partner with SoCalGas in leveraging incentive dollars of equipment identified to achieve reductions needed for CMB-01, CMB-02, CMB-04, and BCM-10.

Response to Comment B-7:

SCAQMD Rule 1111 amended in September 5, 2014 requires the new 14 ng/J NOx emission limit for residential and commercial central fan-type water heaters. This low NOx limit requirement has already been implemented for natural gas water heaters manufactured and installed in the Basin. Continuous implementation of this 14 ng/J NOx emission limit is part of the proposed control methods for CMB-02.

Response to Comment B-8:

As part of CMB-02 control methods, SCAQMD staff would develop an incentive program to replace existing, older water and space heating units with new, lower NOx units. Several factors including the length of useful life of the equipment would be considered in determining the cost-effectiveness of a replacement unit.

Response to Comment B-9:

SCAQMD staff would welcome an opportunity of collaboration between SCAQMD and SoCalGas on such a study and subsequent research and technical assessment to determine the current NOx emission level of various appliance types in each of the equipment categories for CMB-04 and BCM-01. Staff is also going to work with manufacturers to set manageable timelines for development and commercialization of new, low NOx burner technologies.

Response to Comment B-10:

CARB's "Further Deployment of Cleaner Technology" for on-road heavy duty vehicles does cover the population considered in the SCAQMD MOB-08 mobile source control measure which is why the emission reductions already claimed under the CARB measure are not repeated under the SCAQMD measure. This avoids over-counting emission reductions and why the MOB-08 is listed as "to be determined" for emission reductions. The concept is that the CARB measure is the overarching goal in deploying cleaner on-road heavy duty vehicles and MOB-08 is focused on the local regional effort in accelerating the retirement of older on-road heavy duty vehicles. This can be done, for example, through the existing SCAQMD fleet rules, thus the implementation of this measure would be conducted locally by the SCAQMD. Once the local reductions are determined, the reductions can be credited toward the commitment under the CARB "Further Deployment of Cleaner Technology" for on-road heavy duty vehicles.

Response to Comment B-11:

SCAQMD staff agrees with your comments and thanks for providing additional documentation. In fact, a new set of optional NOx emission standards (0.1, 0.05, and 0.02 g/bhp-hr) for on-road heavy-duty engines not only provides greater emission reductions than engines simply meeting the current mandatory standard, but also the ability to access incentives funding for engine manufacturers and other market participants. As part of the control measure MOB-08, SCAQMD would be seeking to generate and/or develop public funding programs that more incentive funding may be available to accelerate the retirement of older on-road heavy-duty vehicles with the deployment of newer, lower-emitting heavy-duty engines in the market.

Response to Comment B-12:

SCAQMD staff appreciates your comments and looks forward to continuing to work with SoCalGas.

American Coatings Association (ACA) – David Darling, May 27, 2016

From: David Darling <ddarling@paint.org>
Sent: Friday, May 27, 2016 6:45 AM
To: Philip Fine; Heather Farr; Diana Thai
Cc: Pierce Wiegard
Subject: CTS-01 Comments

Comment Letter C

Phil, Heather and Diana,

I appreciate your willingness to share a copy of the draft CTS-01 language and taking into account our comments from our meeting earlier this month. While ACA sees your changes as an improvement from the initial preliminary draft CTS-01, we still have several outstanding concerns with the current language. To address these concerns we offer the following comments and suggestions on behalf of ACA's Architectural and Industrial Maintenance Committee members.

C-1

Regulatory History

While we appreciated the advanced notice the District gave us of your intent to add Rules 1107 and 1136 to the CTS-01, we are still concerned that the District is adding more rules than are necessary to achieve the District's CTS-01 VOC reduction goals. Based on the last CTS-01 version and our meeting, it was our understanding that the District believes that the approximately 1 ton per day of the reductions called for will potentially come from amendments to Rule 1168. However, as drafted the current CTS-01 is including many more coatings rules. While we appreciate that the District is including these rules that could be amended as fallbacks should reductions not result from anticipated action, we believe some of these rules should not be included in the CTS-01 or amended at this time.

C-2

Marine Coatings Rule 1106/Aerospace Assembly and Component Manufacturing Operations Rule 1124

While we believe that including Rule 1124 may make sense given the lower limits in Ventura County Air Pollution Control District's Aerospace rule, we do not agree with including Rule 1106 as a source of potential VOC reductions. Just last year the District proposed amendments to Rule 1106 that would not have lower the VOC limits. Yet proposing to evaluate the sufficiency of RACT for 1106 in CTS-01 seems at odds with that past proposal. Without sufficient new reasons or circumstances to change the District's past reluctance to amend the limits in Rule 1106, we ask that you consider dropping Rule 1106 from CTS-01.

C-3

Metal Parts and Products Coatings Rule 1107

We believe that Rule 1107 should not be included in the CTS-01, if inclusion is solely based on potential resolution of the Health Risk Assessment (HRA) for TBAC. There are other technological issues that go well beyond waiting for a final HRA determination on TBAC that make further VOC reductions from this category infeasible at this time. In particular, we are concerned that metal parts product coatings have different attributes than architectural and industrial maintenance coatings in that low VOC architectural and industrial maintenance coatings can't necessarily be used on metal parts that may have to be shortly after application. Therefore, the metal parts and products category has less proven low VOC compliance options potentially making further reductions in this category infeasible at this time. Thus we suggest dropping Rule 1107 from CTS-01.

C-4

Wood Products Coatings Rule 1136

C-5

We also suggest that SCAQMD remove Rule 1136 from the CTS-01. The EPA and California Department of Toxic Substances Control are currently weighing actions on Methylene Chloride (DCM) commonly used in paint stripper. These rulemakings could alter the wood products coatings industry. In turn this would mean premature amendments to this category could have unintended consequence or necessitate further amendments unnecessarily stressing industry and government resources. Therefore, we ask the District to wait until EPA, DTSC complete their work before considering additional reductions from this category.

C-5
Cont

Architectural Rule 1113

We appreciate your willingness to move Rule 1113 to the bottom of the list of potentially impacted rules and grouping it with Rule 314 as we discussed earlier this month. However, we would like to reiterate our position that since the section containing Rule 314 and Rule 1113 contemplates actions that will likely be taken solely under Rule 314 verification and reporting programs as originally included in the 2007 AQMP, including Rule 1113 in the CTS-01 is not necessary. Further, as we have noted, the District only just finished amending Rule 1113. Thus, we again suggest linking the coating certification program solely to Rule 314 and dropping Rule 1113 altogether from CTS-01.

C-6

Proposed Method of Control Section

We have some concerns with the language in the first sentence of the propose method of control section: "Reductions would be achieved by tightening regulatory exemptions that may be used as loopholes and lowering the VOC content for a select few categories where most products are already meeting lower VOC limits." The language could be construed as a place marker for further reducing or doing away with the "Small Container Exemption" (SCE) in Rule 1113. While targeted compliance and enforcement efforts may be beneficial to maximizing the benefits of existing regulation, we believe it is critical that the District keep compliance options such as the SCE. ACA supports efforts to prevent true circumvention of the regulations through modification of the rules while maintaining compliance options like the SCE.

C-7

To reflect the scope of these proposed control methods in the 2016 AQMP, we respectfully request that the District consider making the following changes: "Reductions would be achieved by lowering VOC content limits for a select few coating categories in rules that have not been updated within the past ten years (including Rule 1124 (Aerospace Coatings) – last amended 9/21/2001, and Rule 1168 (Adhesives) – last amended 1/7/2005) and also addressing potential regulatory loopholes."

Exempt Compounds and TBAC Report

During our meeting earlier this month you expressed that it was the intention of staff to prepare a TBAC report to present to the Board this summer. It was our understanding that the report would outline how the Board should act if OEHHA finds TBAC is a toxic air contaminant. Our members are very concerned with this report process, and its implications for formulation and compliance options for VOC limits across multiple categories. In particular, ACA believes that a move to withdraw exemptions without recommendations from OEHHA, a final report from CARB, approval by the Scientific Review Panel on Toxic Air Contaminants and a robust weighing of input from industry would be improper and lead to unnecessary disruptions. As such we suggest multiple stakeholder meetings—at least one in the early stage to go over what is going to be covered in the report and a second when the draft report is released. An open process will allow the Board to make an informed decision on how to proceed further with input from stakeholders. Our member would also request confirmation of the extent to which the District plans to engage stakeholder in the TBAC report process.

C-8

ACA also urges the District, should it move forward with the report, to investigate raising VOC limits for industrial maintenance coatings and auto refinish coatings, since many formulations that comply with the current limits can only do so with the use of TBAC. Further, should the District eventually modify any exemptions or limits, we request the District include an adequate implementation timeframe to allow

C-9

manufacturers to adjust their formulations.

In conclusion, we are concerned that the District is including more coatings rules than necessary to achieve the District's CTS-01 VOC reduction goals of 1-2 tons. We also suggest including Rule 314 in CTS-01 without reference to Rule 1113. Finally, we suggest multiple TBAC report stakeholder meetings, and an adequate implementation timeframe especially since any changes that result from this report could have a great impact on the coatings industry.

C-10

Thanks

David Darling, P.E.
Managing Director, Health, Safety and Environment
American Coatings Association
1500 Rhode Island Ave., NW
Washington, DC 20005
202-719-3689

Responses to Comment Letter from American Coatings Association, David Darling (Comment Letter C)
May 27, 2016

Response to Comment C-1:

Staff thanks for your participation in this process, as well as for your comments and suggestions.

Response to Comment C-2:

SCAQMD staff's responses are provided below as to why these rules should be included in CTS-01. These rules listed in the Regulatory History section of the control measure description in Appendix IV-A are potentially likely to be affected by this control measure due to toxicity concerns, RACT evaluations and potential loophole elimination. However, the applicability and effects to these rules would be determined in the actual rulemaking process.

Response to Comment C-3:

Staff has modified the Regulatory History of the control measure CTS-01 in the Draft Plan to clarify why Rule 1106 has been included for consideration as a source of potential VOC reductions. Staff intends to combine Rules 1106 and 1106.1 to promote clarity and evaluate whether the rules satisfy RACT requirements. The commenter is also referred to read the latter part of Response to Comment C-2.

Response to Comment C-4:

Inclusion of Rule 1107 in the control measure has also been clarified in the Regulatory History of the control measure CTS-01 in the Draft Plan. The commenter is also referred to read the latter part of Response to Comment C-2.

Response to Comment C-5:

Similarly to Rule 1106 and 1107, reasoning for including Rule 1136 in control measure CTS-01 has been explained in the Regulatory History of the control measure CTS-01 in the Draft Plan. The commenter is also referred to read the latter part of Response to Comment C-2.

Response to Comment C-6:

The coatings certification program to assess the potential SIP reductions has been included in the Regulatory History of the control measure CTS-01 in the Draft Plan.

Response to Comment C-7:

As the commenter acknowledged, some of regulatory exemptions may be used as loopholes. To respond to the concern, existing exemptions will be reviewed if there exists potential regulatory loopholes. This statement will stay in the control measure.

Response to Comment C-8:

SCAQMD staff has prepared a review of the existing limited exemption for tBAC and analyze the health risks using the new draft inhalation cancer potency factor established by the Office of Environmental

Health Hazard Assessment (OEHHA) in August 2015 that is higher (more carcinogenic) than previously estimated. A preliminary draft white paper has been prepared by the SCAQMD that discusses the regulatory history, health risk analysis, and staff recommendations for the exemption of tBAC. The preliminary draft tBAC paper can be accessed at <http://www.aqmd.gov/docs/default-source/planning/tbac/tbac-preliminary-draft-paper.pdf?sfvrsn=2>. A stakeholder meeting was held on November 1, 2016 to discuss the preliminary draft white paper and was presented to the SCAQMD Stationary Source Committee meeting on November 18, 2016. Both meetings provided the public an opportunity to comment and participate in the recommendations made in the white paper.

Response to Comment C-9:

As discussed in the tBAC Assessment White Paper, no changes to the current existing rules including VOC limits and exemptions, are being proposed to change.

Response to Comment C-10:

Rule 314 has been added to the Regulatory History in the control measure CTS-01 as part of the Draft Plan. In addition, clarification has been added as to the purpose of the proposed rule amendment. In addition, clarification as to the intent of the amendments for other VOC rules has been added noting that some of the rules are not anticipated to generate substantial emission reductions. Thus, SCAQMD staff is confident that the committed emission reductions from the implementation of CTS-01 will be achieved within the given timeframe.

PITCO/MagiKitch'n/ANETS/PERFECT FRY COMPANY, May 31, 2016



P.O. Box 501
Concord, NH 03302
603.225.6684
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May 31, 2016

Comment Letter D

Melisa Marks, CFSP
Southern California Gas Co.
Energy Resource Center
9240 Firestone
Downey, CA 90241

Subject: Meeting – "Overview of Foodservice Equipment Industry for the South Coast AQMD"

Dear Ms. Marks:

Thank you for the invitation to the meeting hosted by the Southern California Gas Co. titled "Overview of Foodservice Equipment Industry for the South Coast AQMD" being held at your facility on June 1st. Unfortunately, I will be unable to attend. I did, however, want to take this opportunity to share with you my concerns regarding proposed SCAQMD regulations governing NOx and PM from Commercial Restaurant Equipment.

D-1

As a manufacturer of commercial cooking equipment, Pitco/MagiKitch'n/Anets/Perfect Fry is committed to providing our customers with innovative and cost effective solutions to their cooking equipment needs. We understand that the AQMD is challenged to achieve emission reduction levels to comply with National Ambient Air Quality Standards. It is our belief that, in order to set targets that are achievable, there first needs to be an understanding of the current NOx emission levels being produced by existing equipment in the marketplace. This can then lead to planning to either promote existing equipment technologies that are low NOx emitters, or the development of new low NOx technologies applied to commercial cooking equipment. Since NOx is not currently regulated on the equipment covered by CM # CMB-04, we do not believe that, at this point, there is a thorough understanding of the existing state of the industry as it relates to NOx. Our concern is that the AQMD will set targets or mandatory emission limits that are either unattainable, or will require considerable added expense to achieve.

D-2

With that in mind, we would ask that the AQMD engage Manufacturers and Gas Industry Representatives to undertake a study to determine the current NOx emission levels of various appliance types in each of the equipment categories covered by CMB-04. Considering that each of these appliances, e.g. ovens, ranges, fryers, and charbroilers, potentially uses different burner designs and each has unique design challenges that need consideration, we feel that each appliance may need to be evaluated independently. Certainly any investment that the AQMD can make in supporting such a study would be helpful to achieving the allocation of resources to completing it in a timely fashion.

D-3

Given the current lack of knowledge of current emission levels from commercial cooking equipment, and a lack of understanding of the details of what SCAQMD is proposing in CMB-04, it is difficult to estimate the costs and times that would be needed for compliance. It is possible, if levels are set without a viable baseline, that they levels may be unrealistic and our ability to sell gas fired equipment into this region would be severely limited or outright banned for an extended period. Until we have a better understanding of both current emission levels and the targets that SCAQMD is proposing, we can only say that a considerable amount of resources and time will likely be required to achieve NOx reduction.

D-4

In recent years, there has been a considerable industry drive toward energy efficient equipment in commercial cooking equipment. In understanding that energy efficiency and low NOx production are often at odds with each other when it comes to burner and combustion system design, we want to be cautious to maintain the strides that have been made in energy efficiency while searching for solutions

D-5

to NOx reduction. We would expect that the AQMD's interests would be aligned, since an increase in overall fuel usage, even if it achieved lower NOx, would likely run counter to the AQMD's goals.

D-5
Con't

In general, we would ask that the SCAQMD undertake to understand the current state of the industry and exercise prudence in setting equipment standards that are both achievable and cost effective. This has the potential to minimize the effect on end users and consumers while still helping achieve emission reductions.

D-6

Please share with me any notes or comments from the meeting, if you would. We obviously have an interest in how this subject develops.

Thank you,



Mark McCabe
Vice-President of Key Accounts

Responses to Comment Letter from PITCO et al. (Comment Letter D)

May 31, 2016

Response to Comment D-1:

SCAQMD staff appreciates your participation in this process and comments for CMB-04 – *Emission Reductions from Restaurant Burners and Residential Cooking*.

Response to Comment D-2:

Proposed control measure CMB-04 suggests broad categories of restaurant burners and residential cooking equipment in nature that are currently unregulated NOx emission sources. Comprehensive research would be conducted for attainable emission limits and cost-effectiveness of the equipment in actual rulemaking.

Response to Comment D-3:

Studies were undertaken to determine NOx emissions from various cooking appliances, of which results are provided in Proposed Method of Control section of CMB-04 located in Appendix IV-A of the Draft Plan. The SCAQMD could support development of low NOx burner technologies for some types of equipment that could not be readily replaced by high efficiency equipment.

Response to Comment D-4:

The 2016 AQMP emissions inventory identifies NOx emissions from fuel combustion in residential, service and commercial operations. The emission inventory at various attainment years can be found in Appendix III of the 2016 AQMP. Further detailed inventory reviews will be performed during the rulemaking process.

Response to Comment D-5:

Achieving energy efficiency and low-NOx production are not necessarily at odds with each other. High efficiency cooking equipment consumes less therms of natural gas, which consequently emits less amount of NOx emissions to the atmosphere. SCAQMD staff will continue to seek energy efficient, low-NOx emitting equipment for restaurant and residential cooking.

Response to Comment D-6:

Technical feasibility and cost-effectiveness are two prime aspects to consider when implementing a new control technology in air pollution emitting sources, including cooking equipment. SCAQMD staff will continue to undertake understanding the current state of the cooking industry and currently available high efficiency cooking equipment in setting equipment standards that are both achievable and cost effective.

Southern California Alliance of Publicly Owned Treatment Works (SCAP), June 2, 2016

Comment Letter E



June 2, 2016

Mr. Wayne Natri, Acting Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765

Dear Mr. Natri:

Re: Comments on the Preliminary Draft of SCAQMD 2016 AQMP Stationary Source Measures

The Southern California Alliance of Publicly Owned Treatment Works (SCAP) appreciates this opportunity to provide comments on the Preliminary Draft of SCAQMD 2016 AQMP Stationary Source Measures. SCAP represents 83 public agencies that provide essential water supply and wastewater treatment to nearly 19 million people in Los Angeles, Orange, San Diego, Santa Barbara, Riverside, San Bernardino and Ventura counties. SCAP's wastewater members provide environmentally sound, cost-effective management of more than two billion gallons of wastewater each day and, in the process, convert wastes into resources such as recycled water and biogas.

SCAP would like to thank SCAQMD staff for meeting with our Air Quality Committee on April 26th. The primary purpose of this transmittal is to memorialize our comments on the preliminary draft control measures expressed to staff at this meeting. Overall our members are concerned that some of the preliminary control measures could negatively impact the beneficial use of biogas produced from municipal wastewater treatment plants and landfills. Rather than flaring this renewable resource, we strongly believe biogas should be used to produce energy or low-carbon transportation fuel. We would greatly appreciate your support for legislation and policies that provide financial incentives encouraging the use of biogas as a resource.

As stationary sources in the South Coast Air Basin, our members appreciate the challenge posed by this AQMP. SCAQMD is required to determine how to achieve clean air without the ability to control mobile or federal sources, which constitute the vast majority of the emissions to be controlled. SCAP objects to the proposed "fair share" concept where SCAQMD, CARB and EPA

E-1

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would each reduce emission sources under their control by 50 percent. We believe that stationary sources are already well-controlled and achieving our “fair share” is not feasible without a significant infusion of incentive funding. We respectfully request that SCAQMD specifically quantify the required funding, by sector, and to identify how these funds will be secured. In the event that funding cannot be guaranteed, SCAP requests that CARB and EPA be assigned a greater share of the reductions required to achieve attainment.

E-1
Cont'

The following outlines our specific comments on draft preliminary control measures as discussed during our April 26th meeting with your staff:

CMB-01 Transition to Zero and Near-Zero Emission Technologies for Stationary Sources:

While SCAP appreciates that this control measure uses an incentive-based approach, we are concerned that insufficient funding will be available to achieve the proposed NOx emission reductions. It is our understanding that the EPA has requested that such a control measure be supported by an enforceable commitment, so we would like SCAQMD to clarify that this control measure will not morph into command and control requirements, if funding cannot be secured.

This control measure seeks to replace traditional combustion sources with zero and near-zero emission technologies including electrification or fuel cells. The background section for this preliminary control measure explains that biogas from wastewater treatment plants and landfills can be processed and cleaned for the use in fuel cells or transportation fuels. While our SCAP membership embraces these goals, we would like to respectfully remind staff that biogas cleanup is not usually cost-effective and fuel cells have consistently failed prematurely due to stack failures, which then requires flaring in order to continue providing necessary management of the biogas. Clearly, without substantial funding incentives and performance guarantees, our members will be unable to justify biogas fuel cell or transportation fuel projects.

E-2

While we seek SCAQMD’s support in incentivizing zero and near-zero biogas technologies, we do not believe these biogas technologies are truly commercially available, reliable or cost-effective yet. Due to these inherent challenges, we request that biogas not be included in this control measure.

CMB-03 Emission Reductions from Non-Refinery Flares:

We appreciate SCAQMD staff’s clarification that this preliminary control measure will not be applicable to emergency or backup flares. Subsequent to our meeting, SCAQMD provided a detailed summer planning inventory that clarified that the wastewater sector contributes only 0.01 tons per day of NOx. Considering wastewater flares are an insignificant source of NOx and they are normally used for emergency or backup purposes, SCAP requests that the wastewater sector be excluded from this control measure.

E-3

We are also concerned that the draft control measure discussion omits the technological and financial challenges associated with biogas pipeline injection or vehicle fuel projects. The following briefly outlines our concerns regarding the language contained in this control measure: (1) compost facilities aerobically process waste materials, so flaring should not be applicable to this sector, (2) landfills flares are regulated by Rule 1150.1 and the CARB Methane Reduction Regulation, so the discussion should not suggest these flares are only regulated through NSR and BACT, (3) our

E-4

members strive to utilize biogas as a renewable resource. Nevertheless, flaring capacity at wastewater treatment plants is needed for emergency and backup purposes. Unlike wastewater treatment plants, biogas continually declines in flow and methane concentration at landfills after closure. The heating value of such dilute biogas cannot support most energy production applications, so facilities will need to maintain the ability to flare. Consequently, this control measure should not suggest that biogas can always be used as a renewable fuel, and (4) the discussion suggests that biogas can be used cost-effectively as transportation fuel, but in reality such projects are not currently financially viable.

E-4
Cont

We respectfully requests that this draft control measure exclude the wastewater sector and include a discussion regarding the technological and financial barriers limiting our ability to pursue pipeline injection and vehicle fuel projects.

E-5

MCS-01 Improved Breakdown Procedures and Process Re-Design:

Considering no SIP-creditable reductions would be obtained, SCAP does not understand the value of this proposed control measure. We acknowledge that EPA expressed concerns regarding Rule 430 due to Startup Shutdown Malfunction (SSM) litigation and the resulting SIP Call [Federal Register / Vol. 80, No. 113 / June 12, 2015]. However, Rule 430 has not been disapproved by EPA and litigation challenging the SIP Call is ongoing.

Based upon our conversations with EPA, we believe that there may be various approaches to address EPA's new SSM policy. In fact, EPA's SIP Call indicates that states and local agencies are allowed to issue their own enforcement discretion criteria, but such criteria cannot be binding on the United States or any citizens group. Unfortunately, EPA didn't provide much guidance explaining how to implement this new policy. In fact, the situation is further complicated by litigation challenging EPA's new SSM policy. What is clear though is that this major national policy is intended to address bad actors in states with weak pollution control requirements. SCAQMD has adopted the most restrictive air pollution rules in the United States, including a comprehensive breakdown rule, so we cannot believe that breakdowns in the South Coast Air Basin could cause significant emissions like those outlined by the Sierra Club's petition to the EPA. We recommend that this proposed control measure be excluded from the AQMP and allow legal proceedings to conclude prior to consideration of any rulemaking.

E-6

BCM-10 Emission Reductions from Greenwaste Composting:

While we understand that this proposed control measure is intended to reduce VOC and NH3 emissions from chipping and grinding, we are concerned about specifically identifying vendors with non-commercial technology. In the past, our members have retained vendors with this type of technology, which were unable to achieve claimed emission levels in real-world practice. SCAP respectfully requests that developing technology not be specifically discussed in the AQMP unless the actual performance can be demonstrated and validated in commercial and sector specific applications.

E-7

Our members are also confused by the focus on food waste emission reductions in association with greenwaste composting. SCAQMD Rule 1133.3 already limits the amount of food waste in greenwaste composting without triggering an overall system control efficiency of at least 80 percent.

E-8

It is unclear whether SCAQMD is proposing additional control for operations beneath this threshold or the control measure is intended to restrict other sources of potential food waste emissions. Please clarify the intent of this proposed control measure. E-8
Cont

BCM-05 Ammonia Emission Reductions from NOx Controls:

We appreciate staff's clarification that this proposed control measure is only intended for large-scale projects. To avoid potential confusion, SCAP recommended that this control measure be revised to indicate biogas and other small-scale projects would not be subject to ammonia emission reductions. E-9

Thank you for the opportunity to comment on the Preliminary Draft of SCAQMD 2016 AQMP Stationary Source Measures. At your convenience, we would like to meet with you and discuss potential incentives and legislative support strategies needed to develop renewable biogas pipeline injection and vehicle fuel projects. Please do not hesitate to contact Mr. David Rothbart of the Los Angeles County Sanitation Districts, SCAP Air Quality Committee Chair, should you have any questions regarding this transmittal at (562) 908-4288, extension 2412. E-10

Sincerely,



John Pastore, Executive Director

cc:

Dr. Philip Fine, SCAQMD

Responses to Comment Letter from SCAP (Comment Letter E)

June 2, 2016

Response to Comment E-1:

Thank you for taking the opportunity to being involved in and making comments to the 2016 AQMP. The U.S. EPA, CARB and SCAQMD mutually understand the need to seek reductions from all sectors, thus, a “fair share” reduction. The target for reductions from each entity would parallel the emission reductions needed to meet the standards. For example, according to the latest modeling data and attainment demonstrations, to meet the federal 1997 and 2008 8-hour ozone standards there is a need to reduce NOx emissions, respectively, 45 percent by 2023 and 55 percent by 2031. Reductions from federal sources include aircraft, locomotives and ocean-going vessels and can be found as part of the State SIP Strategy along with reductions from on-road vehicles and off-road equipment under the authority of CARB. SCAQMD proposes reductions from stationary and mobile sources under the District’s control for the 2016 AQMP in the form of regulatory, incentive and co-benefit approaches.

Response to Comment E-2:

SCAQMD is developing an Incentive Funding Action Plan that will discuss existing sources of funding and potential new funding sources. Staff is prepared to work to secure the funding necessary for a successful incentive program. While there is no intent to morph into a command and control requirement if funding is not secured, staff is considering future rulemaking when the new technology has been achieved in practice, more widely accepted, commercially available, and cost effective.

Staff acknowledges the concerns and previous problems with the operation of fuel cells in their industry. The proposed control measure CMB-01 in Appendix IV-A of the Draft Plan focuses on internal combustion engines, ovens, boilers, landfills, and municipal solid waste facilities in addition to wastewater treatment facilities. Thus, various types of technologies including electrification or fuel cells could potentially be utilized to achieve lower emissions from these sources. Please note that use of biogas from wastewater treatment plants and landfills remains one of the SCAQMD’s potential proposals. Staff can analyze whether emission reductions can be achieved through replacement equipment with zero or near-zero emission technology and/or diversion of waste streams that can be cleaned up or processed, and routed to pipelines or used for transportation fuels. Any potential exemptions from future requirements will be considered during the rulemaking process.

Response to Comment E-3:

In CMB-03 staff proposes routing the gas from landfills and wastewater plants that would typically be flared to equipment that can convert or clean the gas into an acceptable renewable energy source. If it is not feasible, the installation of newer flares classified as the best available control technology (BACT) would be considered. As noted in Comment E-2, any potential exemptions from future requirements or exclusion of a particular affected industry will be considered during the rulemaking process.

Response to Comment E-4:

Staff agrees that flaring is not applicable for aerobically processes so flares at composting facilities have been removed from the control measure CMB-03 in Appendix IV-A of the Draft Plan. In addition, staff agrees that landfill flares are regulated by Rule 1150.1 so such information has been added to Regulatory History for control measure CMB-03. However, staff disagrees that biogas cannot always be used as a

renewable fuel. If using the excess gas as a renewable fuel is not feasible, newer flares installation with BACT would be proposed.

Response to Comment E-5:

Technological opportunities are discussed in Proposed Method of Control section of the control measure CMB-03 in Appendix IV-A of the Draft Plan. As noted in Comment E-2, any potential exemptions from future requirements or exclusion of a particular affected industry will be considered during the rulemaking process.

Response to Comment E-6:

The commenter's opinion about this measure is appreciated, but as noted in the comment, U.S. EPA has expressed concerns with Rule 430, has not provided much guidance explaining a possible new policy, and there is litigation challenging the current policy. It is necessary for staff to keep control measure MCS-01 in the Draft 2016 AQMP Stationary Source control strategy as it is foreseen the rule will need to be amended when these decisions and direction from U.S. EPA is provided. Staff agrees that the rulemaking process would be challenging if taken place before the legal proceedings are concluded.

Response to Comment E-7:

Being an area in nonattainment of the standards and subject to U.S. EPA requirement for any Reasonably Available Control Technology, we are seeking any input on new technologies and emission reduction opportunities. Although this technology is not yet fully in the U.S. market, their machines are available for purchase. This technology was introduced as one of the potential control methods in BCM-10 but does not preclude other technology from consideration. Nevertheless, emission reductions for this control measure do not rely on this technology, but rely on composting. In addition, the control measure write-ups are broad and general in nature allowing for the requirement specifics to be discussed and debated in detail during the rulemaking process.

Response to Comment E-8:

Foodwaste composting covered in Rule 1133.3 was addressed with limited conditions due to the lack of related emissions test data during the time of rule development. Therefore, there is a potential to propose additional control for foodwaste composting operations when more related emissions data become available. More research would be needed to study effects of emissions from increased foodwaste in greenwaste composting and to review the current requirements to determine if additional emission reductions are needed. No additional controls or restrictions on other sources of potential foodwaste emissions are proposed in this control measure at this time.

Response to Comment E-9:

The proposed control measure BCM-05 is intended for both major and non-major polluting facilities as described in the Draft 2016 AQMP, Appendix IV-A. However, it is targeting large ammonia uses, so could be subject to only large projects. These details will be vetted, discussed and debated during the rulemaking process. As noted in Comment E-2, any potential exemptions from future requirements or exclusion of a particular affected industry will be considered during the rulemaking process.

Response to Comment E-10:

Staff thanks for providing comments to the preliminary draft of the 2016 AQMP stationary source control measures.

Western States Petroleum Association (WSPA), June 10, 2016



Comment Letter F

Western States Petroleum Association

Credible Solutions • Responsive Service • Since 1907

Sue Gornick
Manager, Southern California Region

VIA ELECTRONIC MAIL

June 10, 2016

Dr. Philip Fine
Deputy Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

SUBJECT: WSPA COMMENTS 2016 AQMP Stationary Source Control Measures

Dear Dr. Fine:

Western States Petroleum Association (WSPA) is a non-profit trade association representing companies that explore for, produce, refine, transport and market petroleum, petroleum products, natural gas and other energy supplies in California, Arizona, Nevada, Oregon, and Washington. WSPA-member companies operate petroleum refineries and other facilities in the South Coast Air Basin that will potentially be affected by the 2016 Air Quality Management Plan (AQMP) Stationary Source Control Measures.

WSPA provides this letter summary of our comments, as well as specific edits of the SCAQMD's draft Stationary Source Control Measures in Attachment 1, attached hereto and incorporated herein by reference. We appreciate the opportunity to do this prior to release of the 2016 AQMP first draft scheduled in late June. WSPA will be making comments on other aspects of the AQMP once it is released but wanted to provide comments on the Stationary Source Measures as soon as practicable.

ECC-01: Co-benefit emission reductions from GHG programs

WSPA understands from our recent meeting that the emission reduction programs are already in place at the state level for this measure (i.e. LCFS, AB32, etc.) and that emission reductions have already been quantified. However, the control measure appears to focus on additional direct control measures (i.e. described as "additional enhancements needed to achieve further criteria pollutant reductions") for further reductions of GHG and criteria pollutant reductions rather than co-benefits. Therefore, WSPA requests that this language be removed from the control measure.

F-1

F-2

CMB-01: Transition to zero and near-zero technologies

WSPA has several comments and concerns on this control measure and for more details, directs SCAQMD to Attachment 1, pages 19 to 27. As an overview, some concerns are discussed below:

- According to the “Draft Emission Inventory for 2016 AQMP Advisory Group – Discussion Purposes (March 2016),” the entire 2012 Summer Planning Fuel Combustion category (excludes RECLAIM) only had 29 TPD of NOx emissions. This measure would be focused on 22.3 TPD of that, with projected reductions of 10.9 TPD. Given the large amount of reductions targeted under this measure, we suggest the Description of Source Category discussion be revised to explicitly detail the sources intended to be covered. F-3
- The noted power generation sources are currently subject to RECLAIM. Since RECLAIM sources are not (as we understand it) covered by this measure, the discussion is outside the scope of the measure. This would also apply to the entire section under “Energy Sector”. WSPA requests that SCAQMD clearly specify that RECLAIM sources are not covered by this measure. F-4
- Under the section entitled “Co-Benefits from Energy Storage and Smart Grid”, SCAQMD states that zero emission technologies are becoming more prevalent to be considered as Best Available Control Technology (BACT). Additionally, WSPA notes that SCAQMD’s recent BACT guidelines draft (April 2016) also refers to various clean fuels technologies, including electrification, as BACT. However, WSPA requests that more detail be provided on these determinations, such as data used to determine what has been Achieved in Practice for specific equipment and industry categories, before being included in a control measure. F-5
- While cost effectiveness may not be determinable, the range of potential costs for this measure would greatly improve decision makers understanding of how much funding might be needed to deliver the large amount of reductions proposed. Furthermore, the amount of potential funding needed could be important for determining how much of this measure will be SIP creditable. F-6

CMB-03: Emission reductions from Non-Refinery Flares

An equipment survey is referenced in the control measure and NOx emission rates that are presented as achievable. WSPA requests a source for this survey and more details on whether these rates are Achieved in Practice or vendor representations. F-7

CMB-05: RECLAIM

At our recent meeting, you asked WSPA to provide an estimate of a tons/day reduction to be included in the control measure in lieu of SCAQMD’s estimate of 5 tpd by 2031. However, WSPA is unable to provide an estimate at this time because the December 2015 RECLAIM amendments have just begun to be implemented. WSPA believes that there is much uncertainty in those amendments with regard to future impact on the RECLAIM trading credit market. Some of the provisions, such as the opt-out for power generators under certain circumstances and the RTC floor price trigger, could cause unforeseen consequences in the later years of implementation. Additionally, SCAQMD staff is working on facility shutdown provisions that are unclear as of this writing, and we understand that CARB is currently reviewing the December 2015 RECLAIM amendments. All of the above make it difficult to estimate further allocation reductions from the RECLAIM program at this time. F-8

WSPA offers the following edits to the control measure (see pages 40 to 42 of Attachment 1 for these and others not summarized here): F-9

- Consider command-and-control regulation overlays to certain RECLAIM facilities. For some RECLAIM facilities a command-and-control overlay may be the best way to reduce NOx

<p>emissions while maintaining the required equivalency with command and control. <u>Such command-and-control overlays would be at odds with market-based design intent of the RECLAIM program.</u></p>	<p>F-9 Cont'</p>
<ul style="list-style-type: none"> • Assess facility and equipment shutdowns and the removal of associated RTCs from the market. Under command-and-control rules, shutdown emission credits are heavily discounted to BACT, based on the last 2 years of operation. <u>While Currently, for a RECLAIM facility or equipment shutdown, there is no discount of credits for a RECLAIM facility or equipment shutdown, the overall RTCs available to RECLAIM facilities have been reduced multiple times to reflect the advancement of BARCT (i.e., command-and-control equivalency). In some cases these BARCT levels are equal to, or more stringent than, BACT determinations. These credits, if not removed from the program, could reduce the incentive to implement cost-effective controls that would otherwise be required under command-and-control. California Health & Safety Code Section 39616(c) requires that RECLAIM, a market-based program, will result in an equivalent or greater reduction in emissions at equivalent or less cost compared with current command and control regulations.</u> 	<p>F-10</p>
<ul style="list-style-type: none"> • Assessment of whether the cost-effectiveness benefits that the RECLAIM market was intended to provide still exist given the need for all feasible NOx reductions and the potential lack of lower-cost control options. <u>Conversely, such assessment should consider whether further reductions are unnecessary to demonstrate attainment given the large emission reductions associated with proposed State- and District- mobile source control measures.</u> 	<p>F-11</p>
<p>MCS-01: Improved breakdown procedures</p>	
<p>WSPA understands from our recent meeting that this measure is included in the AQMP as a signal to USEPA that SCAQMD will be working to resolve the issues that USEPA has with Rule 430. However, since there are no SIP-creditable emissions from this measure, WSPA requests that it be removed from the draft AQMP.</p>	<p>F-12</p>
<p>FUG-01: Leak detection and repair</p>	
<ul style="list-style-type: none"> • The District should clarify whether it is proposing Smart LDAR instead of traditional LDAR techniques. It would not be less time consuming or labor intensive unless the District is proposing to allow Smart LDAR instead of traditional LDAR techniques. Otherwise, the addition of Smart LDAR on top of traditional LDAR would actually be more time consuming and more labor intensive. The proposed measure would not necessarily result in faster repairs. 	<p>F-13</p>
<ul style="list-style-type: none"> • Optical Remote Sensing technology has not been proven to quantify emissions. This statement leads the reader to believe that these other technologies are more accurate and have been proven to quantify emissions. The SCAQMD needs to clarify this. 	<p>F-14</p>
<ul style="list-style-type: none"> • WSPA requests that SCAQMD provide a more detailed basis for both the emission reductions and cost effectiveness of this control measure. 	<p>F-15</p>
<p>BCM-02: Cooling Towers</p>	
<p>Clarifications were made in the Background (i.e. regarding cooling tower size) and Regulatory (i.e. regarding chromium emissions) sections. As discussed in our recent meeting with you, use of chromium in cooling tower chemicals is no longer permitted so it is unlikely that there will be chromium emissions from cooling towers. Therefore, we request the language be modified to reflect this.</p>	<p>F-16</p>

We look forward to continuing to work with you during the 2016 AQMP process. If you have any questions, please contact me at (562) 307-6353 or by email at sue@wspa.org.

F-17

Sincerely,



Suzanne E. Hornicks

cc: Jill Whynot, SCAQMD

Responses to Comment Letter from WSPA (Comment Letter F)

June 10, 2016

Response to Comment F-1:

Staff thanks you for providing your letter of comments to the preliminary draft control measures.

Response to Comment F-2:

Staff concurs and the description of “additional enhancements needed to achieve further criteria pollutant reductions” has been removed from ECC-01 and was added to ECC-02.

Response to Comment F-3:

Sources intended to be covered in CMB-01 have been described in the Description of Source Category of the control measure CMB-01 in Appendix IV-A of the Draft Plan.

Response to Comment F-4:

The intent of proposed CMB-01 is to lower NO_x emissions from traditional combustion sources by replacement with zero and near-zero emission technologies, including electrification of NO_x sources. Such NO_x sources include internal combustion engines, ovens, boilers, landfills, wastewater treatment facilities and municipal solid waste facilities. RECLAIM facilities were not considered to be covered in this control measure.

Response to Comment F-5:

The section entitled “Co-Benefits from Energy Storage and Smart Grid” has been deleted in the proposed CMB-01.

Response to Comment F-6:

The average and total amount of potential incentive costs are included in the proposed control measure CMB-01 in the Appendix IV-A of the Draft 2016 AQMP.

Response to Comment F-7:

The equipment survey showed an emission rate of 0.025 pounds of NO_x per million BTU is achievable by non-refinery flares. This survey is based on the SCAQMD-permitted equipment data for landfill and wastewater treatment plant flares. There are new units capable of achieving mass emissions of 0.011 pounds of NO_x per million BTU, and concentrations of 6.69 ppm NO_x at 3 percent oxygen, when firing on biogas from a wastewater facility or process gas from oil and gas production facilities. These emission rates were verified through District-approved source tests for which references are presented in the control measure.

Response to Comment F-8:

A list of possible actions that could be taken to achieve a further reduction of 5 tons per day of NO_x emissions by 2031 from the RECLAIM program are listed and explained in the control measure CMB-05 in

Appendix IV-A of the Draft Plan. Staff agrees that there is currently a lot of activity with the RECLAIM program due to the latest amendments including approval from CARB. As such, staff is not proposing any near-term reductions from CMB-05 by 2023 and instead focused on long-term reductions that could be achieved.

Response to Comment F-9:

The first bullet of the comment stated that such command-and-control overlays would be at odds with market-based design intent of the RECLAIM program. However, it is not true if the intent of the program changes in the future. Therefore, there would be no change, but this section has been slightly modified for clarification purposes in the control measure CMB-05 in Appendix IV-A of the Draft Plan.

Response to Comment F-10:

The second bullet of the comment (which is the fourth bullet in the Proposed Method of Control of the CMB-05) was slightly modified in response to this comment and included in the control measure CMB-05 in Appendix IV-A of the Draft Plan. The California Health & Safety Code Section 39616(c)(1) statement was initially included in the control measure write-up, but was inadvertently omitted from the Draft Plan Appendix IV-A. It has been put back into the control measure write-up in the Revised Draft of the 2016 AQMP.

Response to Comment F-11:

The third bullet of the comment does not reflect the process that occurs during the control strategy development of the Plan. Control measures are proposed that seek further reduction in order to assist in attainment of the air quality standards and are not considered as to whether necessary. If unnecessary, then the control measure would not be proposed. Federal, state and local control measures are considered together in order to achieve the standards.

Response to Comment F-12:

The intent of MCS-01 is to revise Rule 430 – Breakdown Provisions, to comply with U.S. EPA’s policy for startups, shutdowns, and malfunctions (SSM). The proposed revisions to Rule 430 would consider improved breakdown procedures and/or process re-designs that would apply to breakdowns from all emission sources. Thus, this control measure has been included in the 2016 AQMP although there are no SIP-credited emissions from this measure due to the nature of the measure.

Response to Comment F-13:

The District proposes to use smart leak detection and repair (LDAR) instead of traditional LDAR because it is more efficient, less time consuming and less labor intensive than traditional technique.

Response to Comment F-14:

SCAQMD staff explores new detection technologies as they become available. Remote sensing technology has continuously been explored for its usability in the previous District’s rule projects and it was proven to be successfully adoptable as an alternative method. Currently, staff is in progress of analyzing the collected data. For new detection technology, a pilot Smart LDAR program (Phase I) will be implemented

to demonstrate its feasibility. Based on the results, fugitive VOC rules will be amended as appropriate (Phase II).

Response to Comment F-15:

Estimated emission reduction and the latest cost effective values have been added to the control measure FUG-01 in the Appendix IV-A of the Draft and Revised Plan. More details regarding the technology and anticipated affected facilities have also been added.

Response to Comment F-16:

Clarifications were made in the Background (i.e., regarding cooling tower size) and Regulatory History (i.e., regarding chromium emissions) sections in the control measure BCM-02 (Cooling Towers) in the Appendix IV-A in the Draft 2016 AQMP.

Response to Comment F-17:

SCAQMD staff appreciates your comments and look forward to continuing to work with you.

California Small Business Alliance (CSBA), June 13, 2016



Comment Letter G

Dedicated to Environmental Progress and Economic Growth

June 13, 2016

Mr. Wayne Nastri, Acting Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765

COMMENTS ON THE DRAFT 2016 AIR QUALITY MANAGEMENT PLAN

Dear Mr. Nastri:

The California Small Business Alliance (Alliance) is a non-partisan coalition of California trade associations committed to providing small businesses with a single constructive voice before air quality management districts and other environmental regulatory agencies. As active participants in the 2016 Air Quality Management Plan (AQMP) Advisory Group, Alliance members have been consistent contributors in the development of the plan. An Alliance representative has also been designated by the Home Rule Advisory Group to participate in the review of the health impacts of particulate matter air pollution in the South Coast Air Basin (SCAB) during the development of the AQMP. Finally, Alliance members have been actively engaged in the ongoing dialog with other stakeholders representing a broad cross section of business interests, neighborhood community organizations, and local, state and federal agencies. Now, with the draft plan about to be released for public comment, we want to take this opportunity to offer our comments for your consideration.

A Fair Share Approach to Clean Air

Those who represent Southern California's business community have long understood that complying with clean air standards, as mandated by the Clean Air Act, may be required by law, but in reality is unachievable by relying on emission reductions from stationary sources alone. If our region is to have any hope of meeting or exceeding current national ambient air quality standards for Ozone and PM 2.5, it will require more cooperation and commitment by the California Air Resources Board (CARB) and U. S. Environmental Protection Agency (EPA) to take decisive action to reduce emissions from the sources under their control.

With each revision of the AQMP, emissions from stationary sources – particularly small businesses – have become less of a factor in solving the overall complex problem of improving air quality in the SCAB. It should be common knowledge that timely attainment of federal standards can be achieved only when all agencies - not just the SCAQMD - assume their fair share of reducing emissions from the sources under their control.

G-1

273 North Spruce Drive • Anaheim, CA 92805

Telephone: (714) 778-0763 • Web: www.calsmallbusinessalliance.org

CTS-01 Further Emission Reductions from Coatings, Solvents, Adhesives, and Lubricants (VOC)

Many small manufacturing businesses are particularly anxious about this control measure, notwithstanding the nominal emission reduction projection of 1 to 2 tons per day.

Since the late 1980s, and through the mid-1990s, industrial users of coatings, inks, and adhesives have faced strict environmental regulations on their operations because of the large amount of solvents released in the surface coating process. While coatings manufacturers and suppliers have often responded with innovative solutions, VOC limits do vary from industry to industry, and since the regulations are often in a state of flux, strict compliance methodologies cannot be provided for each industry.

G-2

Giving consideration to the use of incentives to promote the use of super-compliant products containing little or no VOCs might prove practical in some instances for certain industry segments. But, when the District staff suggests that by putting conditions on when certain coatings, solvents, adhesives, and lubricants can be used (i.e., May 1 – October 31, the Ozone season), it reveals a disturbing lack of concern or awareness of the additional operational and financial burdens that such conditions would inflict on thousands of small businesses that would have to make substantial adjustments because of the new requirements.

When contemplating rulemaking to achieve a modest 1 to 2 tons per day of VOC emissions in the 2023-2031 time period, the District staff would do well to remember the hundreds of small businesses, and thousands of middle class jobs, that are no longer a part of the Southern California economy, because they were either lost to other states and other countries or simply disappeared forever due in large part to decades of draconian rulemaking involving these products.

FLX-02 Stationary Source VOC Incentives

Alliance members are acutely aware of the challenges posed by the 2016 AQMP, and we applaud the District staff for considering using carrots rather than sticks as a way to encourage businesses to make choices that will reduce emissions while minimizing cost impacts.

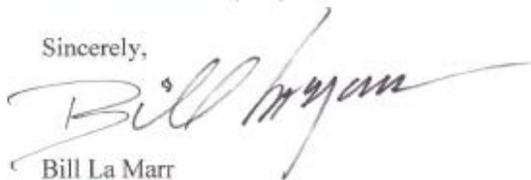
G-3

As addressed earlier in these comments, not only is it essential that the District obtain firm “fair share” commitments to reduce specific amounts of emissions by CARB and EPA, it is equally essential that the District specifically quantifies the amount of funding required for the financial incentives it proposes to offer stationary and other sources before the AQMP is approved at the local level. It is no less imperative for the District to certify to its stationary and other sources that the incentive funding is guaranteed, and will be available to businesses when they need it. And, in the event that funding cannot be guaranteed, the Alliance requests that CARB and EPA be assigned a greater share of the emission reductions required to achieve attainment.

Thank you for the opportunity to comment on the preliminary draft of 2016 AQMP Stationary Source Measures. Please do not hesitate to contact me should you have any questions regarding this transmittal at (714) 778-0763.

G-4

Sincerely,



Bill La Marr
Executive Director

cc: Philip Fine, Ph.D., Deputy Executive Officer, Planning, Rule Development and Area Sources

Responses to Comment Letter from CSBA (Comment Letter G)

June 13, 2016

Response to Comment G-1:

As the commenter stated, attainment of federal ambient air quality standards cannot be achieved only at local level, but achieved when cooperation occurs at federal, state, and local levels. A fair share approach is a mutually understanding among the three agencies, U.S. EPA, CARB, and SCAQMD that reductions from sources under each agency's control is necessary to achieve emission reductions to meet the standards. Control of stationary sources alone cannot achieve the fair share reduction commitment in the region and thus, mobile sources should also be controlled. The 2016 AQMP proposes potential emission reductions from both stationary and mobile sources under the District's control in the form of regulatory, incentive and co-benefit approaches.

Response to Comment G-2:

Seasonal control, such as more control during the summer or high ozone season, was a consideration in past AQMPs, however, this is not being considered in the 2016 AQMP. Staff agrees that in addition to the year round need for reductions, undue burden could be placed on businesses that seek steady state environments as opposed to fluctuating operations to meet the needs of the District.

Response to Comment G-3:

Incentivizing the use of super-compliant technologies is one of the concept proposed in FLX-02. The amount of funding required for the financial incentives has not been determined in this control measure at this time. SCAQMD staff will seek to garner funding and how one would apply for such funding. However, no reductions from incentives for the use of super-compliant technologies have been quantified, used in the attainment demonstration, or committed into the SIP.

Response to Comment G-4:

SCAQMD staff appreciates your comments on the Preliminary Draft of 2016 AQMP Stationary Source Measures.

Public Solar Power Coalition – Harvey Eder, June 15, 2016

Comment Letter H

The commenter provided printed copies of the following series of published papers from the United States Department of Energy’s National Renewable Energy Laboratory called ***On The Path to SunShot***¹ (May 2016). As noted on their website, *On the Path to SunShot* is a series of eight reports that examines the lessons learned in the first five years of the initiative and the challenges and opportunities the industry faces in the final five. It identifies the key research, development and market opportunities that can help ensure that solar energy technologies are widely affordable and available to more American homes and businesses.

Since these papers are copyrighted materials (e.g. published papers or books), these copyrighted materials are not reprinted here, and instead, we are providing a list of the papers received, and links to websites where such materials may be available for viewing and download.

- [Emerging Issues and Challenges in Integrating High Levels of Solar into the Electrical Generation and Transmission System](#)
- [Emerging Issues and Challenges in Integrating Solar with the Distribution System](#)
- [The Role of Advancements in Solar Photovoltaic Efficiency, Reliability, and Costs](#)
- [Advancing Concentrating Solar Power Technology, Performance, and Dispatchability](#)
- [Emerging Opportunities and Challenges in U.S. Solar Manufacturing](#)
- [Emerging Opportunities and Challenges in Financing Solar](#)
- [Utility Regulatory and Business Model Reforms for Addressing the Financial Impacts of Distributed Solar on Utilities](#)
- [The Environmental and Public Health Benefits of Achieving High Penetrations of Solar Energy in the United States](#)

¹ <http://energy.gov/eere/sunshot/path-sunshot>

Response to Comment Letter from Harvey Eder (Comment Letter H)

June 15, 2016

Thank you for the comment letter and providing documentation in regards to solar energy.

The Draft 2016 Air Quality Management Plan (AQMP) Chapter 10 – Climate and Energy has a lengthy discussion on moving towards high levels of power from renewable resources. As mentioned in the title of several of the documents provided, there are many opportunities with solar renewable energy along with many challenges. A section within Chapter 10 titled, “Challenges and Opportunities in Moving Towards 100 Percent Renewable Power” discusses in detail many of these issues that are being addressed with the development of new technologies, implementing transportation onto the grid, and along with changing how the grid traditionally operates. The transition to increasingly higher amounts of renewable energy is occurring rapidly, especially with the increasing renewable mandates established by the State. However, this transition needs to address the instabilities associated with variable and intermittent renewable generation, otherwise, the addition of large of amounts of renewables creates an instable grid system that can increase the need for traditional fossil based power plants. Many of the documents provided in the above comment letter were reviewed and similar documents specific to California were referenced during the development of the Draft 2016 AQMP Chapter 10.

SECTION 2

COMMENTS AND RESPONSES TO COMMENTS ON THE DRAFT 2016 AQMP

COMMENT LETTER NUMBER

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Air-Conditioning, Heating, & Refrigeration Institute (AHRI)	8/19/2016	29	190
Airlines for America	8/19/2016	30	193
Altery Systems (Corinne Vita)	9/27/2016	68	563
American Chemistry Council (ACC)	8/18/2016	21	129
Association of American Railroads (AAR)	8/19/2016	31	201
Association of California Cities Orange County (ACCOC)	8/10/2016	6	56
Building Industry Association of Southern California, Inc. (BIA)	8/19/2016	32	207
BYD Heavy Industries (BYD)	8/19/2016	33	211
California Construction and Industrial Materials Association (CalcIMA)	8/19/2016	34	214
California Council for Environmental and Economic Balance (CCEEB)	8/19/2016	35	225
California Hydrogen Business Council	8/19/2016	36	235
California Trucking Association (CTA)	8/19/2016	37	255
CalRecycle	8/5/2016	4	50
City of Irvine	8/19/2016	38	264
City of Mission Viejo	8/19/2016	39	270
City of Moreno Valley	8/17/2016	18	114
Clean Energy	9/9/2016	66	543
Climate Resolve (David Fink)	8/19/2016	40	276
Constance Hughes	8/15/2016	12	86
Construction Industry Air Quality Coalition (CIAQC)	8/18/2016	64	529
Consumer Specialty Products Association (CSPA)	8/16/2016	15	93
David W. Brown	8/31/2016	69	565
Del Amo Action Committee (Florence Gharibian)	8/19/2016	41	279
Del Amo Action Committee (Florence Gharibian)	8/19/2016	65	533

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Earthjustice	9/9/2016	67	549
Electratherm (Paul Hughes)	8/17/2016	19	116
Gateway Cities Council of Governments	8/19/2016	42	285
Gatzke Dillon & Ballance LLP (GDB) on behalf of John Wayne Airport	8/19/2016	43	288
Gloria Sefton	8/17/2016	20	126
HDL/GGS, Inc. (Snake змія 蛇)	8/12/2016	9	69
Health Advocates	7/27/2016	2	42
ITERIS, Inc.	7/19/2016	1	40
Jacques Jougla	8/15/2016	13	88
Julie Stoll	8/16/2016	16	102
Lennox International Inc. (Lennox)	8/19/2016	44	298
Loraine Lundquist	8/13/2016	11	84
Los Angeles Area Chamber of Commerce	8/19/2016	45	302
Los Angeles County Board of Supervisors	8/19/2016	28	187
Los Angeles County Business Federation (BizFed)	8/18/2016	23	153
Los Angeles County Metropolitan Transportation Authority (Metro)	8/18/2016	24	159
Los Angeles Department of Water & Power (LADWP)	8/19/2016	46	304
Los Angeles World Airports (LAWA)	8/19/2016	47	309
Michael Salman	8/18/2016	22	132
National Fuel Cell Research Center (NFCRC)	8/22/2016	61	505
Orange County Council of Governments (OCCOG)	8/19/2016	48	314
Orange County Transportation Authority (OCTA)	8/10/2016	7	59
Pacific Merchant Shipping Association (PMSA)	8/19/2016	49	319
Peter Berg	8/15/2016	14	90
Ports of Long Beach & Los Angeles (San Pedro Bay Ports)	8/19/2016	50	324

COMMENT LETTER NUMBER (CONCLUDED)

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PTS Staffing (Ronald Stein)	8/21/2016	60	502
Public Solar Power Coalition (Harvey Eder)	8/12/2016	10	80
RadTech	8/19/2016	51	351
Rafael Yanez	7/29/2016	3	48
Ramboll Environ	8/19/2016	52	358
REALTORS Committee on Air Quality (RCAQ)	8/22/2016	62	517
Richard Luczynski	8/24/2016	63	526
Riverside County Transportation Commission	8/19/2016	53	371
San Bernardino Associated Governments (SANBAG)	8/18/2016	25	162
Senator Jim Dabakis	8/8/2016	5	52
Southern California Alliance of Publicly Owned Treatment Works (SCAP)	8/19/2016	54	375
Southern California Edison (SCE)	8/19/2016	55	381
Southern California Gas Company (SoCalGas)	8/19/2016	56	388
Southern California Leadership Council (SCLC)	8/19/2016	57	445
Stephanie Pincetl (UCLA)	8/16/2016	17	104
Steve Milloy (JunkScience.com)	8/11/2016	8	65
Truck and Engine Manufacturers Association (EMA)	8/19/2016	58	452
U.S. EPA	8/19/2016	27	184
Valley Industry and Commerce Association (VICA)	8/19/2016	59	500
Western States Petroleum Association (WSPA)	8/18/2016	26	169

Comment Letter from ITERIS, Inc. (Comment Letter 1)

From: John A. Lower <jal@iteris.com>
Sent: Tuesday, July 19, 2016 4:30 PM
To: Michael Krause; Henry Hogo
Cc: aravind.kailas@volvo.com
Subject: Comments on the draft AQMP

Thanks for the opportunity to comment on this important document. We strongly support the stated intent to “Invest in strategies and technologies meeting multiple objectives regarding air quality, climate change, air toxic exposure, energy, and transportation”.

1-1

Truck platooning is requested to be added as a safe and economic option to lower fuel consumption and reduces CO2 emissions. It also helps the traffic flow by reducing congestion.

Pages 4-36 and 4-37 detail the Final 2016 RTP/SCS TSM strategies, and summarize Transportation Control Measures into three main categories of 1) transit, intermodal transfer, and active transportation measures; 2) HOV lanes, HOT lanes, and their pricing alternatives; and 3) information-based transportation strategies. It is requested that reference also be given in this section to the other TSM improvements that are in the Final 2016 RTP/SCS TSM strategies, including:

1-2

- Advanced ramp metering
- Expansion and integration of the traffic signal synchronization network
- Other ITS improvements

Thanks,



John A. Lower
Associate Vice President
Iteris, Inc.
1700 Carnegie Avenue | Suite 100
Santa Ana | CA | 92705-5551
tel 949,270,9682 | fax 949,270,9401
jal@iteris.com | www.iteris.com

Responses to Comment Letter from ITERIS, Inc.
(Comment Letter 1)

Response to Comment 1-1:

Thank you for participating in this AQMP public process, your comments, and your strong support for the comprehensive Plan.

Truck platooning and other operational efficiencies will be considered during implementation of the “Further Deployment of Cleaner Technologies” measures in the State Mobile Source Strategy.

Response to Comment 1-2:

Chapter 4 of the Draft 2016 AQMP includes a broad overview of the integrated land use and transportation strategies including transportation control measures (TCMs) in the Final 2016 RTP/SCS and does not include or highlight individual intelligent transportation system (ITS) or transportation system management (TSM) measures. However, advanced ramp metering, and expansion and integration of the traffic signal synchronization network have been added in the Revised Draft 2016 AQMP per the request. More information on these measures can be found in the Final 2016 RTP/SCS available online at <http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx>. It should be noted a more robust discussion of SCAG’s TCMs are included in Appendix IV-C of the 2016 AQMP and their corresponding reductions are included in baseline emissions.

Comment Letter from Health Advocates (Comment Letter 2)



July 27, 2016
South Coast Air Quality Management Governing Board
Attn: Board Chair William Burke
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Dear Governing Board Chair Burke and Governing Board Members,

The 2016 South Coast Air Quality Management District's (South Coast AQMD) Air Quality Management Plan (AQMP) provides an integral opportunity for the South Coast AQMD to bring clean air to a region plagued with dirty air for decades. While air quality has improved in the region, more than 5,000 people die prematurely each year due to unsafe air. In fact, progress in reducing ozone pollution has leveled off in recent years. To make matters worse, the communities bearing the heaviest burden of the region's air quality crisis are disproportionately low-income people of color.

While the organizations represented in this letter are reviewing the draft AQMP and preparing more detailed comments, we write now to provide some immediate feedback on the draft, stipulating seven principles that should frame revisions to the final plan. In sum, these principles reflect a range of policy considerations which will help make the final plan just and equitable and help bring clean air back to the South Coast region and its more than 17 million residents, particularly the region's most vulnerable communities. The seven principles are:

1) The 2016 plan must demonstrate a measurable, enforceable pathway into compliance with the Clean Air Act and eliminate the "black box," which just defers tough decisions,

Southern California constantly receives an "F" for air quality and, despite progress, air quality continues to plague communities, particularly communities of color. This is unacceptable. The 2016

2-1

Air Quality Management Plan must provide a detailed set of enforceable measures that achieve the 2022, 2023 and 2032 deadlines for attainment. Reliance on black box measures presents an unfavorable trade-off for those who breathe in the South Coast Air Basin. While it may provide additional time to identify the strategies to attain an ozone standard, the track record of failing to actually identify these measures has resulted in decades of South Coast residents breathing smog-polluted air. We need a plan that reflects the urgency on the health impacts felt by Southern Californians, which means actually articulating the measures to meet clean air standards.

2-1
Con't

2) The 2016 plan should have early nitrogen oxide ("NOx") reductions, as the South Coast AQMD promised the public at the February 2015 Governing Board meeting.

During the long deliberation over the prior PM2.5 plan for the South Coast and the monitors in the Inland Empire still showing violations, the Governing Board promised it would explore bringing back measures with early NOx reductions. To date, this has not happened, and residents, particularly those residing in close proximity to polluters, need relief from the heavily polluted air. In fact, the Governing Board wasted an opportunity to fix the NOx RECLAIM program, which could have provided an opportunity for early NOx reductions. Instead, the Governing Board opted to approve a Western States Petroleum proposal that cut fewer credits out of the system on a more prolonged timeline. As people continue to suffer and die from air pollution, we call on the South Coast AQMD not to waste any more time or opportunities. Thus, the plan should include enforceable regulatory measures that reduce NOx in the near term to meet the 2023 deadline.

2-2

3) The 2016 plan must be just and address long standing inequities in air quality that disproportionately harms low income communities of color,

Recognizing the inequality in air quality that falls along demographic lines of race, ethnicity, and class in Southern California, the AQMP's measures must prioritize regulations, strategies, and investments that frontload reductions in communities ranked in the top 25% most over-burdened communities as designated by CalEPA's CalEnviroScreen tool. There is immense urgency to bring clean air to the communities most harmed by polluting fossil fuels, and the AQMP should demonstrate how it will address this inequity.

2-3

4) We need an enforceable clean air plan, not an incentive dollar wish list.

The draft AQMP recently released by the South Coast AQMD staff relies too heavily on unsecured incentive funding. More than 90% of proposed future reductions are dependent on incentive-based programs – many funded with unidentified dollars. While incentives can be helpful in pushing clean air gains, it is important that the financial responsibility of paying for clean air not be borne by those who can least afford it. Taxpayers should not be required to subsidize large polluting industries. Furthermore, the strategy to raise much of the money relies on actions well beyond the control of the South Coast AQMD and will not withstand scrutiny by the California Air Resources Board or the Environmental Protection Agency. It is not a viable strategy to assume this money will be made available by Congress, for example. Such unfunded "incentives" are, similar to the

2-4

"black box," an ill-conceived way to avoid legal mandates to impose enforceable control measures. Rather, we need strict regulatory programs to help spur innovation and drive pollution reductions, clean vehicles and clean energy.

2-4
Cont

5) The AQMP should prioritize zero-emission technologies that maximize co-pollutant and greenhouse gas reduction benefits.

2-5

Through legislative, administrative, and local actions, California is pursuing strategies to solve the serious problems created by burning fossil fuels, from climate change to unhealthy air and more. Wherever feasible, AQMP measures must require and/or spur zero-emission technologies powered by clean energy.

6) The AQMP needs to commit to adopting clean energy measures for stationary and area sources.

There are a panoply of regulations that are excluded from the draft list of measures produced by South Coast AQMD staff. For example, the plan should include a requirement for solar or electric water heaters in all new development. It should require point of sale transition to electric hot water heaters. In addition, there should be a requirement that diesel backup generators are no longer permitted. The advent of clean energy like solar and storage provides important opportunities that do not appear in the current list of measures. The plan should also make sure it is not permitting the construction of new fossil fuel power plants. In particular, the draft measures seek to take credit for many programs designed to reduce energy demand. It is antithetical to take credit for these programs while simultaneously allowing the construction of new power plants.

2-6

7) While the authority over mobile sources of pollution is generally with the California Air Resources Board and the Environmental Protection Agency, the South Coast AQMD does have authority to clean up dirty vehicles. It must use this authority in this Plan.

The plan should commit to an overhaul of the Fleet Rules, which are purchasing requirements for fleets of vehicles. The plan should also commit to expanding the fleet rules to a broader set of fleets. In addition to fleet rules, the plan should also make use of its indirect source authority. The federal Clean Air Act and California's Health & Safety Code provide authority for local entities like the South Coast AQMD to advance clean vehicles through indirect source authority and transportation control measures. Under the Clean Air Act, the term "indirect source" means "a facility, building, structure, installation, real property, road, or highway which attracts, or may attract, mobile sources of pollution," 42 U.S.C. § 7410(a)(5)(C).

2-7

Particular focus should be placed on indirect sources in the Inland Empire, such as warehouses, where the majority of those displaced and burdened by under regulated logistics sprawl are low-income communities of color. We need this type of regulation to ensure that the massive tidal wave of new warehouses does not worsen air quality in what is already the most polluted area of the South Coast. Incidentally, this type of regulation could also be used to require clean energy at these facilities, including solar panels, microgrids, and other clean technologies.

In sum, these principles provide the framework for an equitable clean air plan that reflects the urgency so many Southern Californians feel when confronted daily with the air pollution killing so many and impairing the quality of life of so many more. We look forward to discussing this with you further in the coming weeks and months.

Sincerely,

Martha Arguello
Physicians for Social Responsibility – Los Angeles

Tom Dolan
Inland Congregations United for Change

Bahram Fazeli
Communities for a Better Environment

Evan Gillespie
Sierra Club

Michele Hassan
Center for Community Action and Environmental Justice

Maya Golden Krasner
Center for Biological Diversity

Fabi Lao
Coalition for Clean Air

Adrian Martinez
Earthjustice

David Pettit
Natural Resources Defense Council

John Yi
American Lung Association

CC:
Wayne Nastri, Acting Executive Officer
Jill Whynot, Chief Operating Officer
Philip Fine, Deputy Executive Officer

Responses to Comment Letter from Health Advocates
(Comment Letter 2)

Response to Comment 2-1:

A primary goal of the 2016 AQMP is to eliminate reliance on the “black box” [CAA §182(e)(5)] to the maximum extent feasible. “Black box” measures are not needed for attainment of the 1-hour ozone standard. This is the first time any ozone attainment plan for the South Coast Air Basin has not relied on CAA §182(e)(5). Such reliance is still needed for the 8-hour ozone standards.

Response to Comment 2-2:

Already adopted rules and regulations will achieve significant NOx reductions prior to 2023, including recent RECLAIM amendments. As noted in Chapter 4, the 2016 AQMP does commit to adopt and implement regulations that will achieve NOx reductions prior to 2023.

Response to Comment 2-3:

A full Environmental Justice analysis is included as part of the Socioeconomic Assessment, whereby any disproportionate community impacts of the Plan will be assessed. Furthermore, nine toxic control measures are proposed in Chapter 9 of the Plan to address local health risk impacts of stationary sources in neighborhoods impacted by toxic sources.

Response to Comment 2-4:

From base year (2012), adopted existing regulations contribute to 68 percent NOx reductions by 2023 and 80 percent NOx reductions by 2031. The incentives approach is designed to help implement the State Mobile Source Strategy “Further Deployment of Cleaner Technologies” measures and some stationary source measures. As other actions are identified, the needed funding levels will decrease. Staff is not aware of any additional feasible regulatory measures that could be included in the 2016 AQMP.

Response to Comment 2-5:

The 2016 AQMP prioritizes maximizing emission reductions utilizing zero-emission technologies when feasible and cost-effective for the attainment timeframes. However, in the near-term (i.e., on a schedule to attain the 1997 ozone standard by 2023) there may not be sufficient zero emission technologies available for all sources. As such, near-zero emission technologies will be needed. Attainment and significant health benefits will be realized in the short-term through low-NOx and near-zero transition technologies. It should be noted that ECC-01 is aimed at seeking co-benefits from existing greenhouse gas (GHG) reduction legislation. ECC-02 accounts for the co-benefits from existing energy efficiency regulations and ECC-03 seeks further efficiency gains that will reduce energy use or need while achieving NOx benefits.

Response to Comment 2-6:

Currently, there is no proposed control measure to mandate electric or solar water heaters in new developments or at point of sale; however, the current draft AQMP includes ECC-03 and CMB-02, which outline incentive programs along with future rulemaking to transition to zero and near-zero high efficiency water heaters that, in part, include solar electric water heaters, heat pumps, solar thermal pool heaters,

electric clothes washers and home weatherization. The proposed ECC-03 and CMB-02 control measures are additional and surplus to Rule 1121 and would maximize emissions benefits by incentivizing the coupling of renewables with the electric appliances. The potential for electric or solar water heaters will be considered during the rulemaking process for CMB-02.

CMB-01 seeks emission reductions with zero and near-zero emission technologies. Facility modernization efforts in CMB-01 consider energy storage for applications including replacement of backup generation combustion sources and/or serve as smaller onsite backup generation resources. SCAQMD anticipates this measure to help move away from traditional diesel generators and instead incorporate sustainable renewable technologies and help manage the grid. SCAQMD relies on the PUC and municipal utilities to evaluate the need for additional power plant construction, but SCAQMD rules ensure that any new or modified power plant will emit at the best available control technology levels. Additionally, there are several regulations which have stringent GHG reduction goals for power plants including the Federal Clean Power Plan which sets a statewide aggregate emissions target (CO₂) for all affected electricity generating units by 2030, the California Cap-and-Trade regulation, and renewable portfolio standards.

Response to Comment 2-7:

The draft AQMP facility-based measures include new development and warehouses as mentioned by the commenter. The facility-based measures and MOB-08, that affects fleet vehicles, discuss an approach to identify actions that can be quantified and SIP creditable. The measures include language to develop an enforceable mechanism including potential rule development within the SCAQMD authority. Expansion of the fleet rules to private fleets would require U.S. EPA to grant a waiver under the Clean Air Act.

Comment Letter from Rafael Yanez (Comment Letter 3)

From: RY <ryin213@gmail.com>
Sent: Friday, July 29, 2016 2:38 PM
To: Michael Krause
Subject: Re: Comments for Draft 2016 Air Quality Management Plan

Mike, with regard to the rule review, there are rules on methane, carbon dioxide, VOC and PM emissions that "grandfather in" industries from having to upgrade and that's what I've been finding as well as the rule itself not going far enough due to being outdated and not current with current technologies that have been out for the past 5-10 years.

> On Jul 29, 2016, at 2:32 PM, RY <ryin213@gmail.com> wrote:

>

> Comments for Draft 2016 Air Quality Management Plan

>

> Issues faced by AQMD:

> Permit updating on methane, carbon dioxide and VOC emitting industries. When permits are being re-issued, no new permitting constrains are really being addressed.

> Additional staff or outsourcing the permit rule review to look at each of the major rules governing the release of methane, carbon dioxide and VOC gases such as the ones plaguing Terminal Island (off loading of ship waste), Wilmington (flaring of hydrocarbon emissions), Boyle Heights (plating companies, industrial sources like rendering plants, goods movement and rail yards) and City Terrace (Industrial Coatings) will be key to coming into compliance.

3-1

>

> With the need for 100% bypassing of solid waste and the need to separate food waste, the public and agencies alike need to ensure that "oxygenation" is ensure so that those bacterial don't become anaerobic which will produce more nitrogen oxides and methane gases. US EPA shows (<https://www3.epa.gov/climatechange/ghgemissions/gases/n2o.html>) that overall, it is Agricultural Soil Management is the major source of pollutants. With larger cities in the US being faced with having to compost and recycle up to 100% diversion from landfills by 2025, this will be the new source. Best to mitigate this now.

3-2

>

> Education is needed in the schools now to have full implementation so that we're not reliant on technologies to "clean up" the air, instead BMP's are key early on. Just like the need to teach the youth of today so that it translate at home.

3-3

>

> As far as PM2.5 reduction, dust management (Construction, Industrial and Street Cleaning / Maintenance) will be key as well as storm water runoff. Multi agency and regulatory bodies will need to get together and get water companies, while renewing their infrastructure in the coming years (new focus by federal government in job creation being campaigned on now),

3-4

install a greater network of reclaimed water for the purpose of dust control, but then we need to deal with the storm water runoff to curtail pollution to rivers and streams and ultimately the ocean.

3-4

>

Con't

> This would divert a large number of dollars from healthcare to new jobs and to better health for all as well as provide a revenue source for funding these 3 program targets listed above.

Responses to Comment Letter from Rafael Yanez
(Comment Letter 3)

Response to Comment 3-1:

The 2016 AQMP seeks the most effective pathway to ozone attainment by focusing on NO_x reductions and includes control measures to make those NO_x reductions. The Plan also includes measures to directly reduce VOC emissions to assist in meeting ozone attainment. With regard to the permitting, and compliance with those permit conditions, all facilities must comply with any existing and newly adopted rules and regulations. The 2016 AQMP includes a full analysis of all emissions and sources in all areas, and applies all feasible measures to those sources to achieve emissions reductions.

Response to Comment 3-2:

The 2016 AQMP proposes a measure (BCM-10) that will focus on composting of greenwaste and other foodwaste reduction technologies, including anaerobic digestion which could also reduce emissions.

Response to Comment 3-3:

The 2016 AQMP proposes a measure (FLX-01) that seeks to improve education and public outreach.

Response to Comment 3-4:

The 2016 AQMP includes a series of PM_{2.5} reduction strategies including one focused on reducing paved road dust (BCM-03). In particular, BCM-03 proposes further paved road dust PM_{2.5} emission reductions through specifying the frequency of street sweeping.

Comment Letter from CalRecycle (Comment Letter 4)

From: Reul-Chen, Crystal@CalRecycle <Crystal.Reul-Chen@calrecycle.ca.gov>
Sent: Friday, August 5, 2016 2:28 PM
To: Michael Krause; Jong Hoon Lee
Cc: Pogue, Kyle@CalRecycle
Subject: CalRecycle's Comments on SCAQMD's 2016 Draft AQMP

Dear Mr. Michael Krause and Jong Hoon Lee,

Thank you for the opportunity to comment on the preliminary draft 2016 Air Quality Management Plan (AQMP). CalRecycle would like participate in the finalization of the AQMP, and throughout the development of control measure (CM) BCM-10. Please put me, Dr. Crystal Reul-Chen (Crystal.Reul-Chen@calrecycle.ca.gov), on any pertinent contact lists for this process.

In the meantime, we would like to submit a few comments on CM# BCM-10 from the AQMP. Our comments are detailed here:

Technology neutral and performance-based specifications: We offer our comments specifically on CM# BCM-10 "Emissions Reductions from Green Waste Composting [VOC, NH3]" in the hopes of fostering technology-neutral and performance-based control measures from which to manage organic materials in the District. We caution against supporting any one technology over another. It is important with any of these technologies to have a comprehensive understanding of the air and water quality impacts of the storage, processing, and application or disposal of any feedstock or product. In lieu of supporting any one technology, we would recommend performance-based specifications for organic materials processing technologies. As California moves to achieve mandated organic materials management goals, we envision a variety of technologies being proposed to manage organic feedstocks, and a performance-based approach would be most effective regardless of the type of technology used to manage the organic materials.

4-1

Uncomposted Green Materials: The other concept that was suggested in BCM-10 was to restrict the use of uncomposted chipped and ground greenwaste on public lands within the air district based on one study (Burger et al., 2015). As SCAQMD proceeds with this proposed control measure we encourage alignment with current CalRecycle regulations, including those related to pathogen density limits. Also, it is extremely important to clearly define the terms "mulch", "uncomposted chipped and ground greenwaste", and "direct land application" as there are several different types of organic materials that fit these broad descriptions without all requiring composting. The potential positive roles these materials can play in supporting 2016 AQMP's reduction of PM-10 emissions within the District should also be accounted for. CalRecycle has references that can help SCAQMD align with our regulations, clarify definitions, and demonstrate PM-10 emissions reductions through the use of organic materials.

4-2

We look forward to working with your staff to further explore these issues as you proceed with your proposed rulemakings, and to helping SCAQMD achieve its air emissions goals. In the meantime, please don't hesitate to contact me at 916.341.6026, or Crystal.Reul-Chen@calrecycle.ca.gov to further discuss these comments.

Sincerely,

Crystal

Dr. Crystal Reul-Chen
Senior Environmental Scientist
Organic Materials Management

Responses to Comment Letter from CalRecycle
(Comment Letter 4)

Response to Comment 4-1:

The 2016 AQMP proposes a measure (BCM-10) that explores emerging technologies and performance-based specifications to be considered during rulemaking.

Response to Comment 4-2:

SCAQMD staff will align with CalRecycle regulations as was done for the previous organic materials rulemaking. Impacts of uncomposted green materials will be reviewed in detail during rulemaking.

Comment Letter from Senator Jim Dabakis (Comment Letter 5)

From: jim.dabakis@gmail.com on behalf of Jim Dabakis <jdabakis@le.utah.gov>
Sent: Monday, August 8, 2016 8:19 PM
To: James E. Enstrom; AQMP Inquiries
Subject: Re: BYU Professor Pope and the \$38.2 Billion Question

Dear Dr Enstrom

As you are asking the greatly respected Professor Pope, Yes or No questions, let me ask you the same.

Are you the James Enstrom who In 1996, requested that the tobacco industry provide you with funds to conduct research into the health effects of passive smoking. Who in 1997 to 1998, received three tobacco industry grants, the combined value of which was \$700,000; most of this money dedicated to the study of passive smoking. This study, published in BMJ in 2003, concluded that "The association between exposure to environmental tobacco smoke and coronary heart disease and lung cancer may be considerably weaker than generally believed. This study where a Dr Enstrom, used data from one of the American Cancer Society's databases, which had requested and received from the society.

Are you the Dr Enstrom that Michael Thun of the American Cancer Society criticize for not informing the ACS that he had requested or received funding from the tobacco industry? Are you the Enstrom who, in September 2006, the ACS sent the University of California, Los Angeles a letter charged with misrepresenting scientific evidence to deny that passive smoking was harmful?

5-1

Are you the same man who, In 2006, prosecutors in a federal racketeering case filed documents which stated that you had received \$94,500 from the tobacco industry between 1992 and 1997? The following year, the judge in this case, Gladys Kessler, ruled that major tobacco companies were guilty of racketeering and misleading the public regarding the dangers of second-hand smoke, citing the paper co-authored by a James Enstrom, in the BMJ as evidence of this. Is that you?

Are you the Enstrom who in 2010, the University of California, Los Angeles School of Public Health announced it would not be rehiring because it felt his research was "not aligned with the academic mission" of their department? The Enstrom who in 2012, filed a lawsuit in federal court against UCLA in response to them terminating a position there? Are you the Enstrom that said UCLA administrators "discriminated against Dr. Enstrom based on his ideological and political affiliations and sought to purge an academic dissenter from their ranks? That in 2015, settled the case, with UCLA allowing to use the title "retired researcher" and continue to access university resources?

Is that you?

Most importantly, are you currently receiving any funding from polluters as you ask Dr Pope questions?

Senator Jim Dabakis

CC: Members of Legislature

On Mon, Aug 8, 2016 at 6:05 PM, James E. Enstrom <jenstrom@ucla.edu> wrote:

August 8, 2016

Utah State Legislators

Salt Lake City, Utah

Re: BYU Professor Pope and the \$38.2 Billion Question

Dear Utah State Legislators,

I am an environmental epidemiologist and physicist who has had a long academic career at UCLA and I am an expert on the health effects of air pollution in California. I am writing to you because research findings and claims that fine particulate matter (PM2.5) *causes* premature deaths by Brigham Young University Professor of Economics C. Arden Pope, III, are being used by the South Coast Air Quality Management District (SCAQMD) to justify proposed new \$38.2 billion air pollution regulations in Southern California. However, the scientific validity of Dr. Pope's findings has been continuously challenged since they were first published in 1995. Recently a very strong case has been made by nine accomplished experts, including myself, that "Particulate Matter Does Not *Cause* Premature Deaths" (https://www.nas.org/articles/nas_letter). In addition, there is overwhelming evidence from over a dozen sources, including both Dr. Pope and me, that PM2.5 is NOT related to total mortality in California (<http://scientificintegrityinstitute.org/NoPMDeaths112215.pdf>). Finally, in a June 12, 2013 letter to EPA, Congressmen Lamar Smith and Chris Stewart described the urgent need for transparency and reproducibility regarding Dr. Pope's research findings and they (unsuccessfully) requested the underlying data for his 1995, 2002, 2005, 2009, and 2009 research papers.

Since Dr. Pope is widely regarded as “The World’s Leading Expert on the Effects of Air Pollution on Health,” and since his extensive advice to CARB and SCAQMD is taken very seriously, I now ask Dr. Pope for a YES or NO answer to the following question: “In light of the above challenges to your PM2.5-mortality findings, do you support the way that the SCAQMD has used three studies co-authored by you (Jerrett et al. 2005, Krewski et al. 2009, and Jerrett et al. 2013) to calculate their ‘Preliminary Health Impacts – Mortality’, knowing that that these preliminary mortality impacts are the primary public health justification for a Draft 2016 Air Quality Management Plan (AQMP) that will impose an estimated \$38.2 billion in compliance costs on the South Coast Air Basin economy?” The July 28, 2016 SCAQMD tables containing the preliminary mortality impacts and the preliminary AQMP costs are attached to this letter, with full details available at this weblink (http://www.aqmd.gov/home/library/meeting-agendas-minutes/agenda?title=STMPRSocio_072816). A table summarizing all studies of PM2.5 and total mortality in California, with the 2005, 2009, and 2013 studies highlighted in red, is also attached. Relative risk of unity (RR = 1.00) means no relationship between PM2.5 and mortality. Finally, the 2013 letter by Congressmen Smith and Stewart is attached.

Because his findings will be discussed at an SCAQMD AQMP meeting next week, I request an answer from Dr. Pope by August 15, 2016. Until I receive a response to the contrary, I will assume that his answer to my question is YES. If you have the time to examine this matter, I request that you send your own answer to the above question to me (jenstrom@ucla.edu) and/or to SCAQMD (aqmp@aqmd.gov). Please let me know if you would like to discuss any aspect of this request with me.

Thank you very much for your consideration of this important matter.

Sincerely yours,



James E. Enstrom, Ph.D., M.P.H.

UCLA and Scientific Integrity Institute

jenstrom@ucla.edu

[\(310\) 472-4274](tel:(310)472-4274)

Responses to Comment Letter from Senator Jim Dabakis
(Comment Letter 5)

Response to Comment 5-1:

Comment Letter 5 is erroneously identified as an AQMP comment letter and has been deleted.

Comment Letter from Association of California Cities Orange County (Comment Letter 6)



500 S. Main Street, #410, Orange, CA 92868 | P: 714.953.1300 | F: 714.953.1302 | www.ACCOC.org

August 10, 2016

Dr. Philip Fine
Deputy Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

RE: Association of California Cities – Orange County Comments on AQMP

Dear Dr. Fine -

Thank you for preparing and providing for public review the 2016 Air Quality Management Plan. The Association of California Cities – Orange County has spent considerable time evaluating this draft on behalf of our region's 34 cities and numerous local governments.

The ACC-OC was also part of a technical working group composed of the Orange County Transportation Authority, Orange County Council of Governments, Transportation Corridor Agencies and several local jurisdictions. This group has collaborated on numerous technical and policy-level comments to the Draft. The ACC-OC firmly stands by these comments and urges AQMD to implement the recommendations.

But we also have several comments we are compelled to emphasize on behalf of our members and city governments. These comments focus on proposed Control Measures and offer recommended changes to make the overall Draft more effective, reasonable and beneficial for our shared constituencies.

6-1

EGM-01: EMISSION REDUCTIONS FROM NEW OR REDEVELOPMENT PROJECTS

This proposed measure is overly broad and could be interpreted to add a new fee to new development or redevelopment in AQMD's service area. The ACC-OC is strongly opposed to such a fee and requests clarifying language to EGM-01 that clearly states AQMD's intent with its evaluation of Rule 9510 from the San Joaquin Valley.

The well-documented housing affordability crisis is driving residents, businesses and employers out of our region. Fees for a new home in Southern California can



exceed hundreds of thousands of dollars per home! What's more, it is highly unclear what the impact and requirements from local jurisdictions would be with such a fee. The consideration of a new development and redevelopment fee is significant public policy. It should be debated as part of overall public policy debates, like the AQMP, and not in more obscure rulemaking processes. Therefore, as the 2016 AQMP is well underway, it is prudent that discussion of implementation of a similar rule to Rule 9510 be deferred to future AQMP developments.

6-1
Cont

BCM-03 FURTHER EMISSION REDUCTIONS FROM PAVED ROAD DUST SOURCES

Roughly 12 Orange County cities carry NPDES permits. Another several dozen organizations and local governments also hold these permits. An NPDES permit is among the most difficult to obtain from the U.S. Environmental Protection Agency. There are extraordinarily strict mandates, review and renewal processes administered by regional water quality control boards. AQMD currently does not have jurisdiction over the issuance, maintenance or mandates required of NPDES permits.

6-2

That is why we are concerned and confused that AQMD would suggest the "review existing NPDES mandates" as part of the BCM-03. The mandates and processes associated with NPDES permits should be left to regional water quality control boards. We urge AQMD staff to remove reference to NPDES mandate review as to not confuse jurisdictional and implementation issues related to these permits.

Again, the ACC-OC fully supports the additional technical and policy positions put forward in the Orange County Council of Governments letter. The aforementioned issues are of particular concern to the ACC-OC and we respectfully request the requested actions are completed.

Please contact me at (715) 953-1300 or hstratman@accoc.com with any questions on these requests and concerns.

Thank you,



Heather Stratman
Chief Executive Officer
Association of California Cities – Orange County

Responses to Comment Letter from Association of California Cities Orange County (ACCOC)
(Comment Letter 6)

Response to Comment 6-1:

The proposed EGM-01 working group process will solicit feedback and input from affected stakeholders to determine the most efficient and cost-effective pathway of mitigating and potentially identifying additional air pollutant emission reductions from new or redevelopment projects, while minimizing economic impacts on businesses and residents in the region. San Joaquin Valley Rule 9510 allows the payment of fees in lieu of emission reductions at the developer's options. EGM-01 does not propose any mandatory fees.

Response to Comment 6-2:

The 2016 AQMP BCM-03 proposes further paved road dust PM_{2.5} emission reductions through specifying the frequency of street sweeping. To clarify, text in BCM-03 relative to NPDES permits was modified in the Final Draft of the 2016 AQMP to read as follows: "Street sweeping as part of routine roadway and highway maintenance may be included in a state, regional and/or local jurisdiction's National Pollutant Discharge Elimination System (NPDES) permits as part of federal Clean Water Act provisions to reduce debris from entering the storm drain system. NPDES permits are governed by the U.S. EPA and issued and maintained by regional water quality control boards. SCAQMD will coordinate with NPDES permittees and regional water quality control boards to ensure rules of this Plan or future Plans do not conflict with or otherwise compromise NPDES permit requirements. This review is not intended to be a part of the NPDES permit approval process or a reevaluation of existing NPDES permits, but is intended to determine current street sweeping or highway maintenance requirements and practices to ensure that any SCAQMD rulemaking would not be in conflict with existing NPDES permit requirements."

Comment Letter from Orange County Transportation Authority (Comment Letter 7)



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August 9, 2016

Dr. Philip Fine
Deputy Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Re: Draft 2016 Air Quality Management Plan

Dear Dr. Fine:

The Orange County Transportation Authority (OCTA) appreciates the opportunity to provide comments on the Draft 2016 Air Quality Management Plan (AQMP). In addition, OCTA appreciates your diligent efforts to include a wide variety of stakeholders in your process as the final 2016 AQMP is developed.

Consistent with many of the strategies proposed in the AQMP, OCTA is currently taking actions that benefit air quality. These include upgrades to our bus fleet, such as: utilizing renewable natural gas, repowering 199 buses with 0.2 grams per brake horse-power engines (down from 2.0 grams per brake horse-power), ordering 0.02 gram per brake horse-power engines for 98 buses in our fleet, and acquiring a hydrogen fuel-cell bus, with another ten hydrogen fuel-cell buses and five electric buses pending a grant award. Other actions by OCTA that benefit sustainability include implementation of a regional network of bikeways, reallocation of transit resources to more efficiently serve high-demand areas, studying opportunities for transit-oriented development, and improving active transportation connectivity to transit services.

Furthermore, OCTA has a voter-approved sales tax measure to fund a multi-modal set of programs and projects that improve mobility in the region, reduce emissions, and preserve and enhance the environment. These include signal synchronization, system preservation, a new streetcar line, enhanced commuter rail services, freeway congestion management, an advanced-mitigation program that has set aside over 1,300 acres as permanent open space in Orange County, and a competitive funding program to mitigate water runoff beyond required standards.

OCTA does, however, have several concerns that we believe deserve further consideration prior to finalizing the AQMP. These concerns are outlined in the discussion below.

7-1

Dr. Philip Fine
August 9, 2016
Page 2

Advanced Clean Transit

The California Air Resources Board's (CARB's) Advanced Clean Transit Regulation is included in the AQMP. This is intended to ensure that nearly every heavy-duty vehicle operated in California in 2023 will meet the 2010 heavy-duty engine emission standard. However, even a highly aggressive full-fleet penetration of 2010-compliant engines would not provide sufficient nitrous oxide (NOx) reductions to attain the federal ozone standard in the timeframe required. This proposed rulemaking also requires transit operators to replace their entire bus fleets with zero-emission technologies between 2018 and 2040.

The basic requirement to update bus fleets does not appear to be cost-effective, considering a battery electric or hydrogen fuel-cell bus costs between \$900,000 and \$1.5 million, plus the cost of fueling/charging infrastructure. A conventional compressed natural gas bus costs about \$600,000. As such, implementation of the CARB regulation for buses could potentially lead to less funding for bus operations, which would likely result in reduced service levels and discretionary transit uses, which would disproportionately affect transit dependent populations in Orange County and the South Coast Air Quality Management District (SCAQMD) region. Given this, OCTA proposes that the Advanced Clean Transit regulation be performance based and technology neutral. This would help to reduce potential service impacts, and account for emission reduction efforts already underway, such as the current OCTA initiatives noted earlier.

7-2

Further, this level of investment by all of the transit operators throughout the region is only estimated to reduce NOx emissions by less than 200 pounds per day by 2023, and about 200 pound per day by 2031. This contributes extremely little to the 115 tons per day (tpd) reduction that is targeted for 2023, or the 124 tpd reduction targeted for 2031.

EGM-01 – Emission Reductions from New Development and Redevelopment Projects

The purpose of this measure is to mitigate and reduce emissions from new development and redevelopment projects. However, the description of EGM-01 is overly broad, and OCTA suggests that SCAQMD work with stakeholders to narrow this description or eliminate the strategy prior to finalizing the 2016 AQMP. Further, there are no quantifiable emission reductions associated with this measure, nor is there a cost-effectiveness analysis.

7-3

Dr. Philip Fine
August 9, 2016
Page 3

An EGM-01 working group consisting of affected stakeholders from local governments, the building industry, developers, realtors, other business representatives, environmental/community organizations, and other stakeholders, was established as part of the 2007 AQMP. OCTA respectfully requests inclusion in the working group when, and if, it is reconstituted.

7-3
Con't

In addressing indirect sources, the SCAQMD should develop implementation and compliance methods that will not unduly restrict local or regional jurisdictions' prerogatives with respect to land use approvals. During rule development, special consideration should be given to assure that any rule adopted will integrate with, and enhance, the California Environmental Quality Act (CEQA) process, and not impede the project approval process in light of CEQA timelines.

Incentive Strategies

The 2016 AQMP contains a number of measures that are designed to provide incentives to accelerate the penetration of zero- and near-zero emission technologies. Many of the measures target mobile sources that are regulated by the CARB and the United States Environmental Protection Agency (U.S. EPA).

It is therefore important to demonstrate within the 2016 AQMP that CARB and U.S. EPA are committed to these strategies, since they will likely be the implementing agencies. If they are not committed, these strategies should not be included in the 2016 AQMP, due to SCAQMD's inability to delegate to these agencies.

7-4

The Draft 2016 AQMP also notes that as much as \$14 billion in funding must be identified in order to implement the "incentive strategies." Without identification of funding sources, these measures do not seem to be any more useful than the "black box" strategies that were included in previous AQMPs. OCTA is also concerned about the types of funding sources that could be considered and would appreciate involvement in making these determinations. OCTA's primary concern is related to potential increases in regulatory fees, or potential diversion of funds that OCTA depends on to deliver transit service, and the other programs mentioned earlier that contribute toward sustainability and quality of life.

Dr. Philip Fine
August 9, 2016
Page 4

Unquantified Measures

There are a number of measures that have not been quantified in the Draft 2016 AQMP. These are often referred to as "to-be-determined" or "TBD" measures. It may not be appropriate to include these types of measures in the 2016 AQMP, since the inclusion of measures implies some level of commitment toward delivering those measures. This could become problematic, considering an economic analysis cannot be performed without the quantified benefits.

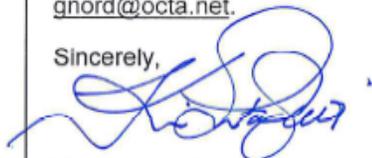
Currently, it appears as though these measures could easily be put in place of the other quantified and committed measures by SCAQMD staff after the 2016 AQMP is approved. This kind of transfer of commitment should not be an action that can be implemented as an administrative change. OCTA also understands that the TBD measures may prove to be more cost effective than some of the other measures, and so it would make sense to pursue them. However, until the time that either a backstop measure is needed or a TBD measure is identified to be more cost effective than one of the currently quantified measures, OCTA requests that the TBD measures either be removed from the plan, or clearly separated from the quantified measures, and called out as uncommitted measures that require further development and evaluation.

7-5

Furthermore, should the TBD measures remain in the AQMP, OCTA requests that the 2016 AQMP include a discussion that clearly states the purpose for including these strategies and the process required to incorporate these strategies. This process would preferably include action by the SCAQMD Governing Board and opportunities for public review and comment.

Thank you once again for the opportunity to provide input on the Draft 2016 AQMP. Should you have any questions regarding the comments above, please contact Greg Nord, Principal Transportation Analyst, at 714-569-5885, or gnord@octa.net.

Sincerely,



Kia Mortazavi
Executive Director, Planning

KM:gn

c: Board of Directors
Executive Staff

Responses to Comment Letter from Orange County Transportation Authority (OCTA)
(Comment Letter 7)

Response to Comment 7-1:

SCAQMD appreciates the participation in the development of the 2016 AQMP and the efforts taken by OCTA to benefit air quality including upgrades to the bus fleet.

Response to Comment 7-2:

Comments regarding the Advanced Clean Transit regulation have been provided to CARB since the measure is part of the State Mobile Source Strategy. It is not the intent of the control measure to result in reduced service levels but CARB has not released specific proposals for the rule amendment at this time. However, CARB has discussed concepts for a proposed regulation, which includes consideration of near-zero emission buses as a transition to zero-emission buses.

Response to Comment 7-3:

San Joaquin Valley Air Pollution Control District has an adopted rule, Rule 9510, that is approved by U.S. EPA. Rule 9510 achieves emission reductions from development and re-development projects (e.g., residential, commercial, industrial). Under State law, as a nonattainment area, the SCAQMD must evaluate all feasible measures to determine if other areas have passed rules more stringent than our own to be adopted and implemented in the South Coast Air Basin and Coachella Valley. San Joaquin's Rule 9510 covers a broad sector of development projects and these project types will be evaluated through a public process.

As noted, a working group will be established to develop EGM-01 and we encourage participation. The intent of EGM-01 is to seek emission reductions through greater deployment of cleaner technologies and not restrict local government prerogatives with land use approvals.

Response to Comment 7-4:

The SCAQMD has been in discussions with CARB regarding implementation of the State Mobile Source Strategy. The emission reductions associated with the State Mobile Source Strategy are primarily the responsibility of CARB and U.S. EPA. For the "Further Deployment" measures, the SCAQMD has a shared responsibility to help implement the measures and incentive funding is one of the implementation components.

Staff has developed a Financial Incentive Funding Action Plan as a companion document to the 2016 AQMP. Staff will explore potential funding opportunities and will seek input from stakeholders and the public. Opportunities may include new sources of funding on the federal, state and local level. Staff does not intend for these measures to divert existing funds.

Response to Comment 7-5:

The "TBD" (to be determined) measures require further technical and feasibility evaluations and the attainment demonstration is not dependent on these measures. However, they are included in the AQMP as part of a comprehensive plan with all feasible measures in case there is a possible need for additional measures and a shortfall in reductions. As emission reductions are realized and to the extent that the

reductions can be SIP creditable, the reductions will be taken as part of future rate-of-progress reporting or as part of future AQMP revisions. For the SCAQMD TBD mobile source measures, emission reductions are accounted for under the CARB SIP Strategy so emission reductions are not listed to avoid overlap. These emission reductions will take place locally and will be determined when the programs, such as facility-based measures, are implemented.

Clarification of the TBD measures has been added in Chapter 4 of the Revised Draft Plan.

Comment Letter from Steve Milloy (Comment Letter 8)

Particulate Matter in Outdoor Air Is Not Associated With Mortality

By Steve Milloy MHS, JD, LLM
JunkScience.com

The Claim. Since the 1990s, the U.S. Environmental Protection Agency (EPA) and others have claimed that fine particulate matter in outdoor air (PM2.5) is associated with and causes death.

The EPA's position is that that:

- ANY inhalation of PM2.5 can cause death;
- Death from PM2.5 may occur within hours of inhalation (i.e., "short-term" or literally "sudden death") and that;
- Long-term (i.e., years or decades) exposure to PM2.5 can cause premature death.

EPA claims that natural and manmade PM2.5 causes as many as 500,000 deaths annually.¹

In support its claim that PM2.5 kills, EPA points to "thousands" of epidemiologic (statistical studies of human populations), toxicologic (experiments on animals) and clinical (experiments on humans) studies.² EPA further claims that the agency's conclusions have been endorsed by its Clean Air Act Scientific Advisory Council (CASAC), a board of outside science advisors.³

Scientific Reality: PM2.5 does not kill anyone. The EPA's claims of PM2.5 lethality rank among the most nonsensical, fraudulent and readily disprovable scientific claims ever.

EPA's three bodies of research. EPA claims the PM2.5-mortality hypothesis is supported by existing epidemiology, toxicology and clinical studies. This is false.

- **Epidemiology.** EPA admitted in federal court that its epidemiologic studies on PM2.5 prove nothing by themselves. In 2012 litigation in which EPA attempted to justify its experiments on humans with PM2.5, EPA admitted doing the experiments because: "epidemiologic studies do not generally provide evidence of direct causation." The purpose of the human experiments, according to EPA, was to develop a medical or biological explanation (i.e., the direct causation) that would support the merely statistical (and, by the way, controversial) results of the PM2.5 epidemiology studies.⁴
- **Toxicology.** No laboratory animal has ever died from PM2.5 in an experimental setting — even though animals have been exposed to levels of PM2.5 as much as 100+ times greater than human exposures to PM2.5 in outdoor air.⁵
- **Clinical studies.** EPA has tested a variety of air pollutants — including very high exposures to PM2.5 — on over 6,000 human volunteers. Many of these volunteers were

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elderly or already health-compromised — the very groups EPA claims are most susceptible to dying from PM2.5 exposures, EPA has admitted that there have been no deaths or any dangerous adverse events clearly caused by these PM2.5 exposures.⁶ PM2.5 exposures in these experiments have been as high as 21 times greater than allowable by EPA's own air quality rules.

EPA's claim about PM2.5 causing death is not supported by the results from these research disciplines, individually or collectively.

Real-world evidence that PM2.5 does not cause sudden or long-term death. Everyone is constantly and unavoidably exposed to PM2.5 from both natural and manmade sources. Natural sources include dust, pollen, mold, pet dander, forest fires, sea spray and volcanoes. Manmade sources primarily are smoking, fossil fuel burning, industrial processes, wood stoves, fireplaces and indoor cooking. Indoor exposures to PM2.5 can easily exceed outdoor exposures — by as much as a factor of 100.⁷

Although EPA claims that almost 25% of annual U.S. deaths are caused by PM2.5, no death has ever been medically attributed to PM2.5.

Despite much research, there is no generally accepted medical or biological explanation for how PM2.5 could possibly cause death.

Much higher exposures to PM2.5 than exist even in the "worst" outdoor air are not associated with sudden death. The level of PM2.5 in average U.S. outdoor air — air that EPA claims can cause sudden death — is about 10 millionths of a gram (microgram) per cubic meter. In one day, a person breathing such air would inhale about 240 micrograms of PM2.5. In contrast, a cigarette smoker inhales approximately 10,000 to 40,000 micrograms of PM2.5 per cigarette.⁸ A marijuana smoker inhales 3.5-4.5 times more PM2.5 — i.e., 35,000 to 180,000 micrograms of PM2.5.⁹ Typical water pipe or "hookah" smokers inhale the equivalent PM2.5 of 100 cigarettes per session.¹⁰ There is no example in published medical literature of these various types of short-term smoking causing sudden death despite the very high exposures to PM2.5.¹¹ Sudden death is also not associated with other high PM2.5 exposures and environments like mines,¹² indoor wood burning, smoking areas¹³ or extremely poor quality urban air, for example, in Chinese cities.¹⁴

The EPA's claim that PM2.5 causes long-term death is grounded in two long-term epidemiologic studies: the "Harvard Six Cities" Study and the "American Cancer Society" (ACS) study. Both studies are controversial for many methodological reasons.¹⁵ The controversy cannot be resolved as EPA refuses to release and/or refuses to compel release of key data used in the studies to independent researchers for purposes of re-analysis and replication.¹⁶ For results to be considered to be scientifically credible, they must be capable of being independently replicated.

A large analysis of the recent daily air quality and daily death data from California for 2007-2010 reports no association between PM2.5 and death.¹⁷

Finally, if EPA really believed that PM2.5 was as deadly as the agency claims, then the agency would be legally and ethically compelled to stop conducting experiments in which human

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subjects, including the elderly and health compromised, are made to inhale PM2.5 at levels up to 21 times higher than EPA air pollution standards allow.¹⁸ The agency, however, has refused to cease conducting these experiments.¹⁹

But hasn't EPA's CASAC reviewed and approved EPA's claims about PM2.5 and death? As pointed out by House Space, Science and Technology Committee chairman Lamar Smith (R-Tex.), "The EPA's regulatory process today is a closed loop. The agency funds the scientific research it uses to support its regulations, and it picks the supposedly independent (but usually agency-funded) scientists to review it."²⁰ These "independent" reviewers are on the EPA payroll in amounts of tens of million of dollars.²¹ EPA's refusal to make its key data available to the public and the obvious conflicts of interest render CASAC review not credible.

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¹ A summary of What EPA claims about the lethality of PM2.5, including links to original documents, is at: <http://epahumanesting.com/the-most-toxic-substance-on-earth/>. The 500,000 deaths estimate is on p. G-7 of the EPA's quantitative risk assessment for particulate matter,

http://www.epa.gov/ttn/naaqs/standards/pm/data/PM_RA_FINAL_June_2010.pdf

² <http://www2.epa.gov/shhttp://epahumanesting.com/the-most-toxic-substance-on-earth/ites/production/files/2014-06/documents/20140602ria-clean-power-plan.pdf>, p. 4-19.

³ *Ibid.*

⁴ <https://iunsciencecom.files.wordpress.com/2014/07/epa-memo-in-opp-to-trc-062614-conv.pdf>

⁵ http://www.epa.gov/ncea/pdfs/nartmatt/Dec2009/PM_ISA_full.pdf,

⁶ <https://iunsciencecom.files.wordpress.com/2014/06/epa-irb-app-6000-volunteers.pdf>.

⁷ <http://www.epa.gov/air/basic.html>.

⁸ <http://www.atsjournals.org/doi/full/10.1164/rccm.200802-334OC-.U7OmVhaHffg>.

⁹ <http://www.drugscience.org/Petition/C2B.html>.

¹⁰ <http://www.fic.nih.gov/News/GlobalHealthMatters/march-april-2014/Pages/nih-hookah-waterpipe-tobacco-smoking.aspx>.

¹¹ <http://www.washingtontimes.com/news/2012/nov/30/whats-epa-smoking/>.

¹² <http://www.msha.gov/S&HINFO/BlackLung/2011-172NIOOSH.pdf>.

¹³ <https://iunsciencecom.files.wordpress.com/2014/07/hook-bar-pm-study.pdf>.

¹⁴ <http://www.washingtontimes.com/news/2013/jan/22/chinas-bad-air-puts-the-lie-to-epa-scare-tactics/>.

¹⁵ <http://www.foxnews.com/story/2001/02/02/epa-secret-science/>.

¹⁶ <http://science.house.gov/press-release/smith-subpoenas-epa-s-secret-science>.

¹⁷ <http://iunscience.com/2013/12/26/epa-air-pollution-scare-debunked-by-best-data-set-ever-assembled-on-particulate-matter-deaths/>.

¹⁸ <http://www.washingtontimes.com/news/2012/apr/24/did-obamas-epa-relaunch-tuskegee-experiments/>.

¹⁹ <http://www.washingtontimes.com/news/2013/feb/13/milloy-federal-judge-overturms-epa-human-experimen/>.

²⁰ <http://online.wsj.com/articles/lamar-smith-what-is-the-epa-hiding-from-the-public-1403563536>.

²¹ <http://www.washingtontimes.com/news/2012/mar/7/clearing-the-air-on-the-epa/>.

Responses to Comment Letter from Steve Milloy (JunkScience.com)
(Comment Letter 8)

Response to Comment 8-1:

The U.S. EPA is tasked with assessing new and emerging air quality science, including health studies, as part of the process of setting the federal air quality standards. This is an extensive, multi-year, public process that is described briefly in the Draft AQMP, Chapter 8. SCAQMD's role under the Clean Air Act is to develop and implement an emission reduction strategy that will bring the area into attainment in a timely manner.

The SCAQMD Board's current position is that the U.S. EPA has the primary role in assessing the science linking air pollutants and health effects. The U.S. EPA has concluded that both short-term and long-term exposure to PM_{2.5} cause mortality. It is then the role of SCAQMD to describe the public health impacts of poor air quality in our region, as well as to implement measures to attain the federal and state ambient air quality standards. It should be noted that the California Air Resources Board has also determined that there are significant mortality and morbidity effects from exposure to PM_{2.5}.

More details on the U.S. EPA's review and causal determination for PM_{2.5} and mortality can be found in the U.S. EPA Integrated Science Assessment of Particulate Matter (74 FR 66353) and in Appendix I – Health Effects to this AQMP.

Comment Letter from HDL/GGS, Inc. (Snake змія 蛇) (Comment Letter 9)

From: Snake змія 蛇 <Snake@hdltd.com>
Sent: Friday, August 12, 2016 1:06 PM
To: Angela Kim
Subject: Totally Aerobic Nitrogen Cycle
Attachments: White Paper – The Hiatt 24Hr Totally Aerobic Nitrification Cycle.pdf
Importance: High

HDL/GGS,Inc PO 7475 Long Beach, California 90807 Snake@HDltd.com

I hold Patents on a **totally AEROBIC NITROGEN CYCLE**. Our method after primary scrubbing would capture NOx from industrial sources such as power plants, industrial boilers, cement kilns, and turbines and place the NOx into an aqueous solution. Then reduce the NOx into N2 and CO2. At the same time scale down hydrocarbons and VOC emissions. There are NO toxic gases such as H2S, SO2 or CH4 produced, Neither Gas is harmful to the environment. The N2 and CO2 may be captured and utilized for other manufacturing uses.

9-1

We have developed a registered fertilizer which increases plant growth between 25 to 1000 times faster. The CO2 uptake from the rapid growth allows the Carbon Cycle to accelerate and remove not only CO2 but other gases from the atmosphere as the plants perform respiration. I shall send the OMG Fertilizer files to the AQMD via email.

Respectfully submitted

Snake
562 428 9973

From: Snake змия 蛇 <Snake@hdltd.com>
Sent: Friday, August 12, 2016 2:21 PM
Subject: Plants and CHNO
Attachments: OMG Label 1 Gallon.docx

It was pleasurable conversing with you today.

These are the photos I promised using the OMG FERTILIZER. This is the label
. Notice the NKP is very low before you dilute. At the end of this email is the CHNO which I
know you will find very interesting. **It also reduces air pollution.** Shall also send my flyer on
Jujitsu as promised. Also a few more photos in following emails

Any questions, call 562 428 9973 M-F 0930-1700 PST

Respectfully submitted

Snake

Please click
on the
following link
for more
plant photos.

[http://www.globalgreenin
gsolutions.com/data/Vest
igeElementsExperiments
.pdf](http://www.globalgreenin
gsolutions.com/data/Vest
igeElementsExperiments
.pdf)

Lime tree, brought in by a customer on Friday to "Just add water" First photo shows how it was upon arrival. Second photo was on the following Monday four days later after application of our fertilizer. MN



Right Photo before treatment. Left photo taken week later after one treatment. The flag pole was removed for painting. MN

Slawek's orange tree. Notice how bad the leaves are in the first photo to the left. NEW growth photo on the right two weeks after one application. Flourishing with good looking leaves.

This peach tree on the left appeared like this for two years. Two months later the photo on the right indicates the results with one application. CA



Trees at General Bettle in Los Angeles CA All trees were 8 foot tall when planted. This is a three year photo. The two large trees were treated only once. They also have been pruned 3 times because of their rapid growth. Their trunk is 8-9 inches across whereby the others are only 2 inches in D. The smaller trees now are between 7-8 feet



fertilizer and 1800 mg of Heavy Harvest, three days later the one on the right has grown,

Apricot Tree. The fruit is on NEW growth which occurred in November, not old growth as it should be. Apricots clustered like grapes and the fruit was larger, very sweet. CA



Photo taken in Canada whereby with Canadian government permit. I myself am against drugs. Client also sells to regular farmers but decided to send these photos to show growth patterns in a short period of time. Both plants were like the one on the left. Treated with our

Peyton's tomatoes, Texas. 1 photo untreated 2nd 24 hours after treatment 3rd one week 4th 2 weeks



CHNO – A Fully Aerobic Denitrification System The Future in Green Technology

Global Greening Solutions

We founded Global Greening Solutions, Inc. because we fundamentally believe in a better, cleaner world for everyone. We think that, regardless of belief or political ideology, everyone in the world can immediately benefit from innovative, scalable, and *clean* ways to dispose of almost any type of waste - and we're not talking about landfills.

Global Greening solutions is a technology-focused company of people committed to developing and providing technologically-based solutions to several of our world's most vexing ecological challenges.

We think that our first product, CHNO, is a strong first step to fulfilling our vision.

CHNO Product Overview

CHNO is a Green Technology System that converts many types of waste into non-pathogenic composted materials safely in a matter of hours. Utilizing a proprietary process, these reduced materials are completely safe for disposal and

can be used as highly desirable organic fertilizers and compounds.

The incoming waste can contain the following materials:

- Food wastes
- Animal remains and body parts
- Manure
- Plastics
- Yard wastes
- Paper and cardboard
- Glass (<2% by weight)
- MSW (Municipal Solid Waste) i.e. Soil and rocks (< 2% by weight, up to golf ball size)
- Metal (light metal like tin/aluminum cans, <1% by weight)
- Construction waste (except bricks, cement blocks, asbestos, concrete)
- Hydro-carbons such as oil and fuels (requires pretreatment)

The system uses a proprietary process of accelerated bacterial, chemical and mechanical action to reduce the waste material into 3 main components:

- CO₂ & N₂ gas which can be discarded to the atmosphere or captured for sale.
- Mature organic compost ready for sale. The volume of this material is as little as 5-10% of the input waste material and the weight is only 15 to 50% depending on moisture content.
- Liquid effluent with <1% nitrogen content and rich in trace minerals which is safe to be discarded to sewer or processed into a high nitrogen fertilizer via an optional stage in the system.

Each of these components is ready for sale to a variety of customers after suitable packaging.

- The output solids (cake) are excellent compost material and can be sold to a variety of customers such as Home Depot for home gardeners or farmers or government areas for uses such as reforestation of burnt areas.
- The CO₂ and N₂ gas mixture can be captured and bottled for sale to facilities such as algae farms for bio-fuel.
- The excess effluent can be processed through an optional stage which elevates the nitrogen content from <1% to as high as 25%. This is a high quality organic fertilizer which is also rich in trace minerals. It is suitable for a large variety of customers from home gardeners, nurseries and farmers.

The system requires the following resources for operation:

- Electricity - (480 volts 3 phase + 220/110 1 phase) for running pumps, heaters and electronics
- Natural Gas/Propane - for heating
- Water
- Various standard and proprietary compounds to regulate and control bacterial action

The operation of the system is fully automated to minimize overhead. This includes:

- Stage to stage transfer and timing
- Dispensing of bacteria and other chemicals and agents
- Temperature control
- Disposal of excess effluent
- Conveyer movement

The loading station can have an option for 2 conveyer systems with a storage station in between. The first conveyer will move slowly to allow manual sorting. The second conveyer will move material quickly from the storage station into the Shredder Chute one load at a time.

The system can be constructed in a range of models with capacities suitable for large plants such as a waste transfer station and sewage plants, or operations such as live stock farms or slaughter houses. A small size model is also possible for rural homes and green enthusiasts as well as a mobile station for on demand remediation tasks. It can also be used for bio-remediation of aquatic or soil hydro-carbon contamination such as oil spills and fuel spills with simple pretreatment.

System Overview

CHNO consists of 3 stations. Each of these stations can be operated at the same time so that the input material is processed in a pipeline fashion. The production system will be mostly automated so as to streamline and optimize the processing capacity of the input material.

In the #1 station, material can be loaded through a chute that feeds the primary processor using a conveyer belt or skip loader. A variety of compounds can be automatically added to the vat based on various parameters that are automatically sensed to achieve optimal organic reaction of the material.

After the primary processing is completed in approximately 5-15 minutes, it is transferred to the #2 station automatically. This station basically prepares the input material with the correct parameters so that it is ready for processing in the next stage.

The #2 Station provides an environment in which all pathogens for compost and liquid fertilizer are destroyed and also optimizes that environment for accelerated bacteria action, which digests the input material and breaks it down into the 3 basic components. Chemistry is continuously monitored and adjusted automatically for optimal bacterial action. The combination of the mechanical, chemical and bacteria action serves to reduce the waste material to a small size and allows the bacteria to consume all the dead pathogens. The bacteria action produces N₂ (nitrogen) and CO₂ (carbon dioxide) gases without any sulfur gasses expelled. These are separated by a gas/water separator within the station and can be expelled to the atmosphere or captured and bottled for sale. Dwell time in this station is expected to be around 30 minutes. Our system will exceed government requirements to provide a safety margin for pathogen destruction.

The #3 station consists of a storage tank for the output of the broken down material, a dewaterer, and a storage tank for the separated effluent. The Storage Tank serves to receive the fully digested material from the #2 station quickly so as to free it for the next batch. The slurry in the storage tank is slowly fed to the dewaterer which separates the solids from the effluent. The solids are mature non-pathogenic compost and can be packaged for sale. The effluent is saved in another storage tank for reuse in the #1 station so as to minimize both water and energy usage for the #1 station. Excess effluent can be safely discarded into city sewage or processed for sale.

The system has an optional stage in the #3 station for processing the excess effluent into a high quality organic

fertilizer instead of discarding it to the sewer drain. This stage treats the effluent and allows the NKP levels to increase. This can elevate the available fertilizer content from <1% to as much as 25% depending on processing parameters. This makes it a high quality organic fertilizer without boosting. This stage is also fully automated so that processed effluent is accumulated in a fertilizer tank ready to be pump out.

Capacity

The system is composed of 3 modular components: #1 Station, #2 Station and #3 Station, with or without the Fertilizer Processing Option. Each one of these components is currently targeted to process 25 tons of raw waste in a 10 hour day. For higher capacity applications, each of the stations can be replicated and connected such that each station can feed more than one down line station to provide redundancy and the ability to put any individual station offline for maintenance without disruption to the operation.

Resource Consumption

This system uses a proprietary chemical, mechanical and bacteria action to reduce the waste. This process requires the material to be mechanically processed and mixed with a fair amount of water. To minimize the consumption of water, this system is designed to recycle the output effluent so that water usage is required only for the first few loads.

Current Status

Global Greening Solutions is a startup company currently in the process of obtaining first round financing. Conceptual and physical design is currently in progress. We plan to initially fabricate a scaled down version to serve as a prototype to demonstrate feasibility as well as a vehicle for demonstrations. It will not be fully automated as in the full scale production system. The capacity of this demo system is yet to be determined pending design progress. We are targeting it to be at once portable and can be operated independently with a generator.

Glossary of Acronyms

CO₂ Carbon
Dioxide N₂ Nitrogen CHNO Carbon, Hydrogen,
Nitrogen and Oxygen, the building block elements of all
organics MSW Municipal Solid
Waste NKP Nitrogen, Potassium and Phosphorous, the 3
main components in fertilizer

Closing

Use of the CHNO reduces landfills, air pollution, aquifer pollution and ground pollution with a payback of a resalable product. It can also be employed for sewage, soil and bio

Responses to Comment Letter from HDL/GGS, Inc. (Snake змiя 蛇)
(Comment Letter 9)

Response to Comment 9-1:

Thank you for participating in the 2016 AQMP process and providing the NOx reduction technology information. Various technologies, including those provided, will be considered during the actual rulemaking process. Staff encourages interested parties to participate in the rulemaking process that will include working group meetings when ideas are shared and discussed for consideration in rule and incentive program development.

Comment Letter from Public Solar Power Coalition (Comment Letter 10)

From: Harvey Eder <harveyederpspc@yahoo.com>
Sent: Friday, August 12, 2016 5:29 PM
To: Jillian Wong; pfine@aqmp.gov; harveyederpspc@yahoo.com
Cc: harveyederpspc@yahoo.com; Jillian Wong
Subject: comments on nop ceqa aqmp 2016 by Harvey Eder for self & PSpC Public Solar Power Coalition 8/12/16 per MKrause phone 8/4/16 ITSC

Hello AQMP 2016 folks ie. Jillian Wong (Dr.) , Phil Fine (Dr.) and Mike Krause, 8/12/16

This document is copyrighted by Harvey Mark Eder all rights reserved. August 12,2016 2:30 pm

Due to the cite in 10 2 and 10-3 in the June 30,2016 Draft Plan that says there has been a 30% increase in ch4/methane over the last 10 years and the new 84, 86 gwp used by IPCC AR5 2013 I brought this up with Dr. Arron Katsenstein who chap 10 and is staff lead in Climate Change and GHG etc, the current number using radiative forcing for 1800 (2016 is 1841ppb ch4) ppb is 274 ppm co2equivalent ch4 emissions in the atmosphere +- 10% ch4 gwp over 20 yrs is 84,or 86 gwp compared to co2, plus ~100 ppm N2O co2 equivalent (using 300gwp for N2O) pous 406 ppm co2 Totals to at least

co2 406 ppm
ch4 274 ppm co2e (+- 10%)
n2o ~100 ppm co2e (calcs needed)

Equals at least 780 ppm co2 now

Therefor what is needed is ITSC Immediate Total Solar Conversion the corredt best science numbers on co2e at over 2 times preindustrial co2 280 ppm co2 times 2 is 560 ppm co2e and 3 times 280 ppm co2 is 840 which is apx where we are now ! These numbers were not supposed to be fact until 2050 to 2100' Its on now folks.

The entire record of my and PSpC record in and out of litigation is incorporated into the record herein in the CEQA nop etc and the Draft 2016 AQMP. Also incorporated into the

10-1

record herein as cited here by reference is the 2014 Jacobson et. al. Plan For Converting California to 80-85% solar renewables by 2030 or more and 100% by 2050 or sooner,,,,,California is the World lead in Solar Renewables not Germany anymore with its nucs (which is being phased out after fukashema in Japan) and the coal plants /mines. The Federal CAA and Ca caa require solar cost effective energy be implemented ie Deployed as cited inar5 chapt 8 "solar renewable energy " is cost effective now and has been and is being "deployed". We must lead the usa and the world. I/We submitted the 8 reports to the Dist Advisory Group with the US DOE May 18,2016 SunShot Documents including PV and CSP (Concentrated Solar Power) as well as Health benefits from solar etc and Fianceing Solar which can reduce solar by "30-60%", The original PV andf CSP 2012 were in the State law wuit filed in January of 2013 etc the original suit s were filed in 1992...

This is submission number 1 or many

Also since the Dist has ignored solar conversion and not covering ITSC lthe alternative project in the CEQA Document EIR must be ITSC II as "expediously as practicable" like our Father and Mothers did in WW2 against the Naziesw/Facists/ and Japan etc. we can and must to this now...

Either there has been a conspiracy or at best gross neglience to ignore solar most likely criminal""
It's now or never.....

Solarly,

Harvey Eder for self and for the PSPC Public Solar Coalition.
August 12,2016 as per K w/ Mr. Mike Krausde

The sun makes the wind blow , the water flow and the plants grow
It's the engine of our ecosystem
The Way The World Works.....

1223 Wilshire Blvd. #667
Santa Monica, CA. 90403
(310) 3932589

PS The little ditti is from cited in responce yo Dist Demur in lit 2013 . I was the first registerurd Environmental Studies Student at the University of California in the Fall of 1970 at UCSC with my Professor Dr. Richard Cooley who told me that its Solar Energy not appropriate or alernative energy or "clean energy " cause thats what you Dist call your Dirty Gas a Fossil Fuel which is against Ca Hand SC to Import into the state 88% of DG is imporated in Ca.breaking state law etc

Responses to Comment Letter from Public Solar Power Coalition
(Comment Letter 10)

Response to Comment 10-1:

The draft 2016 AQMP Chapter 10 – *Climate and Energy*, has a lengthy discussion on moving towards high levels of power from renewable resources. As mentioned in the title of several of the documents provided, there are many opportunities with solar renewable energy along with many challenges. A section within Chapter 10 titled, “Challenges and Opportunities in Moving Towards 100 Percent Renewable Power” discusses in detail many of these issues that are being addressed with the integration of renewables, implementing transportation onto the grid, and changing how the grid traditionally operates to accommodate renewables and new technologies. The transition to increasingly higher amounts of renewable energy is occurring rapidly, especially with the increasing renewable mandates established by the state. However, this transition to reliance on higher renewable generation needs to address the grid instabilities associated with variable and intermittent renewable generation. Otherwise, the addition of large amounts of renewables creates an unstable grid system that can increase the need and/or reliance on traditional fossil based power plants. Many of the documents provided in the above comment letter were reviewed and similar documents specific to California were referenced during the development of the draft 2016 AQMP Chapter 10. However, staff is unable to respond to “the entire of my and PSPC record in and out of litigation” since it is uncertain what documents are referred to.

Comment Letter from Loraine Lundquist (Comment Letter 11)

From: Loraine Lundquist [<mailto:loraine.lundquist@gmail.com>]
Sent: Saturday, August 13, 2016 10:53 PM
To: Public Advisor <publicadvisor@aqmd.gov>
Subject: we need a better clean air proposal

Dear AQMD,

I never realized until a [recent data release from the American Thoracic Society](#), I never knew how many deaths were caused in our city from air pollution. Our city has nearly 5 times more deaths than New York, and the number of deaths rivals deaths from alcohol.

11-1

Given these realities, I am profoundly disappointed in the draft plan you've released for clean air. Why are you putting forward an unfunded proposal? Why are you abandoning strong, useful regulations?

11-1
Con't

Please don't give into corporate interests. Protect our community and our health by creating a real clean air plan with the teeth required to make real change.

thank you,
Loraine Lundquist
16908 Kinzie St.
Northridge, CA

Responses to Comment Letter from Loraine Lundquist
(Comment Letter 11)

Response to Comment 11-1:

The 2016 AQMP does not abandon any regulations and in fact proposes a number of regulatory measures aimed at reducing NO_x and VOC emissions from a variety of stationary and mobile sources. These regulatory measures were established after a thorough analysis of all ozone-emitting sources and available methods and technologies to further reduce emissions. Incentive-based approaches are focused on accelerating high-emitting sources to transition to cleaner technologies sooner than would take place under regulations. Some sources are beyond the authority of the SCAQMD. Incentives are one way to gain emission reductions sooner than natural turnover of vehicles and equipment. Accelerating the deployment of cleaner technologies before future rulemaking is established allows the new technology to be commercially available, achieved in practice, feasible in more applications, cost effective, as well as publicly acceptable. The specific sources of funding have yet to be finalized, but staff has developed the Financial Incentive Funding Action Plan that maps out the possible opportunities to ensure the proposals have secured funding. Such funding is being sought on a federal, state and local level. To ensure the reductions are creditable in the SIP, the U.S. EPA does require these reductions to be quantifiable, surplus (beyond regulations), permanent and enforceable. With such integrity elements in place, the incentive actions can be effective and provide lasting improvements.

Comment Letter from Constance Hughes (Comment Letter 12)

DRAFT 2016 AIR QUALITY MANAGEMENT PLAN



2016 AQMP Comment Form

Please enter your contact information, comments and/or upload comment files below. The information collected may be used to provide further information about public workshops and hearings, and other events related to the 2016 AQMP. Responses to comment will be compiled and included in the final Plan package.

*Fields Required to Submit a Comment

Form Information

Date Created 08/15/2016	Time Created 11:30 AM	AQMP Year 2016
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Commentor Contact Information

Commentor's Name * CONSTANCE HUGHES	Organization * NO AFFILIATION	City LAKE FOREST	State CA	Zip Code 92630
If not representing a specific organization, please enter "No Affiliation".				

Comments (Unlimited Size)

While I applaud AQMD effort to control air pollution, I am concerned that AQMD is primarily relying on incentive funds and encouragement (would that that approach might be enough). Our air quality is among some of the worst in the entire nation; we cannot achieve significant improvement without enforcement mechanisms. Such mechanisms need to be spelled out and absolutely clear to all. Penalties for violations need to be immediate--not a slap on the hand, wink wink. I urge AQMD to be more proactive and lead the nation in setting goals w/a plan to enforce it. Taxpayers should not bear all the financial responsibilities--major work calls for collaboration of all parties.

12-1

12-2

Upload Additional Comment and Supporting Files (30 Mb Maximum per file)

AQMP Comments Files

Note: Supported upload files include all versions of Microsoft Office, jpeg, tiff, PDF, mp3, mp4, and text files.

Commentor Signature *

For More Information Contact: Angela Kim (akim@aqmd.gov) (909) 396-2590

Responses to Comment Letter from Constance Hughes
(Comment Letter 12)

Response to Comment 12-1:

Please see Response to Comment 11-1 with regard to reliance on incentive measures and enforcement.

Response to Comment 12-2:

As noted in Response to Comment 11-1, staff is developing the Financial Incentive Funding Action Plan that maps out the possible opportunities to ensure the proposed measures are funded. Such funding is being sought on a federal, state and local level. Staff intends to create partnerships and align with existing programs such as energy efficiency and rebate offers. There is no intent for taxpayers to bear all financial responsibilities but depending on the source of the funding, taxpayers might be contributing to the program. For example, since mobile sources contribute by far the greatest amount of NO_x, operators of mobile sources may contribute to the funding.

Comment Letter from Jacques Jouglu (Comment Letter 13)

DRAFT 2016 AIR QUALITY MANAGEMENT PLAN



2016 AQMP Comment Form

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***Fields Required to Submit a Comment**

Form Information

Date Created 08/15/2016	Time Created 11:55 AM	AQMP Year 2016
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Commentor Contact Information

Commentor's Name * JACQUES JOUGLA	Organization * NO AFFILIATION	City CARPIN TERIA	State CA	Zip Code 93013
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If not representing a specific organization, please enter "No Affiliation".

Comments (Unlimited Size)

Regulations should not be cut. Giving companies leniency will allow them to choose the most cost effective strategy for transportation and energy production, which is often the worst possible option for the environment. Putting the requirement on the tax payer to offset the cost of utilizing environmentally friendly technologies is forcing billions out of the pockets of small business owners and families rather than out of the profit margins of the largest corporations. The idea of incentives is a good one in some cases, but terrible in others. Ethanol subsidies have cost tax payers billions to develop a fairly neutrally beneficial technology. Allowing the market to find the best solutions to technological problems on its own is essential and so are the regulations that keep our air clean. Please, do not rely on subsidies. Rely on quantitative restrictions on what can and cannot be allowed in out atmosphere. Thank you. -Jacques Jouglu

13-1

13-2

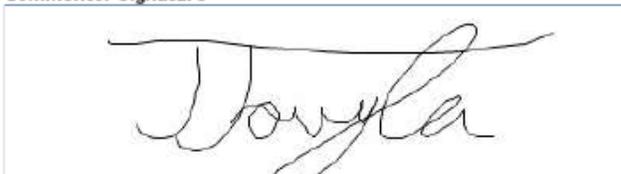
13-3

Upload Additional Comment and Supporting Files (30 Mb Maximum per file)

AQMP Comments Files

Note: Supported upload files include all versions of Microsoft Office, jpeg, tiff, PDF, mp3, mp4, and text files.

Commentor Signature *



For More Information Contact: Angela Kim (akim@aqmd.gov) (909) 396-2590

Responses to Comment Letter from Jacques Jouglia
(Comment Letter 13)

Response to Comment 13-1:

The 2016 AQMP does not cut any regulations. Please see Comment 11-1 with regard to the regulatory measures proposed in the 2016 AQMP.

Response to Comment 13-2:

Please see Comment 12-2 with regard to the taxpayer funding of the incentive-based measures.

Response to Comment 13-3:

There are a number of proposed measures in the 2016 AQMP that provide flexibility to comply and considers the importance of technology and new processes that are cost-effective and technologically feasible.

Comment Letter from Peter Burg (Comment Letter 14)

DRAFT 2016 AIR QUALITY MANAGEMENT PLAN



2016 AQMP Comment Form

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*Fields Required to Submit a Comment

Form Information

Date Created 08/15/2016	Time Created 5:23 AM	AQMP Year 2016
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Commentor Contact Information

Commentor's Name * PETER BERG	Organization * NO AFFILIATION If not representing a specific organization, please enter "No Affiliation".	City BURBAN K	State CA	Zip Code
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Comments (Unlimited Size)

I wanted to comment on the 2016 Air Quality Management Plan. I have some serious concerns about it and would like to see some major changes to the plan.

My biggest concern is regarding the reliance on incentives to help reach our air quality goals. I do support incentives and think they can be effective to change the behaviors of industry, business, and citizens, I also feel that this plan is lacking in tougher regulations, which are even more important and needed than new incentives.

I firmly believe that most people and industries will not just change their polluting patterns unless there is a strong motivator to do so. An incentive can sometimes work if there are strong financial reasons to make a change. But in most cases, I would argue that it is not always financially beneficial to reduce ones pollution. So for the good of all and for the public health, firm regulations must be implemented, to achieve our needed reductions in pollution. I feel the current and proposed rules are not strict enough. That is actually pretty obvious, with our failing grades for our air quality. We don't even meet the federal air quality levels on many days. That is shameful!

I am very dismayed by the fact that our air quality is still very poor and unhealthy in many cases. I believe it's our responsibility to do much more to reduce pollution. We are subjecting our children to air that is truly harming them. That is wrong and we should not rest until air quality is brought to healthy levels. I support stronger regulations, with corresponding stronger penalties for polluting our air. I truly feel that we can not reduce our harmful pollution without strong regulations and penalties. Incentives are again helpful, but not enough of a motivator (even if funding can be found for the amount of incentives needed to make our air healthy again) to bring the change we need.

14-1

I am glad to see stronger rules on Flaring. This is a horrible practice that should be stopped. It's inefficient and clearly a direct contributor to unhealthy pollution levels here in California. It clearly can be reduced and thus will help us achieve cleaner air for all. I do think that mobile sources of pollution should be required to emit less pollution.. but stationary sources are a serious part of the problem as well. Fracking is another area that needs stronger mandatory regulations. Methane should be constantly monitored and leaks should not be allowed. This is an area where penalties would be needed... not incentives.

14-2

I was glad to see the report was quite detailed and it's clear that we know where many of the sources of air pollution are coming from. It's now necessary to put in strong rules and penalties to reduce or eliminate those sources. To enact this plan as written, would be weak and shameful for the AQMD. You are here to protect the citizens from harmful pollution. We know we have a very serious problem on our hands and strong action must be taken. Relying on unfunded incentives would be a weak answer to this serious and life saving responsibility. You literally have the lives of the citizens in your hands, and the public is watching. Stand up and take steps to ensure the air gets cleaner for all of us. It's the reason your body even exists. Thank you.

-Peter Berg

Upload Additional Comment and Supporting Files (30 Mb Maximum per file)

AQMP Comments Files

Note: Supported upload files include all versions of Microsoft Office, jpeg, tiff, PDF, mp3, mp4, and text files.

Commentor Signature *



Responses to Comment Letter from Peter Berg
(Comment Letter 14)

Response to Comment 14-1:

Please see Response to Comment 11-1 regarding proposed regulatory measures in the 2016 AQMP and the reason for the proposed incentive measures. Staff agrees that more work needs to be done to achieve healthy clean air communities and accomplish what is required under the Clean Air Act.

Response to Comment 14-2:

Staff appreciates the support of CMB-03 (Non-Refinery Flares) and will continue to adopt strong regulation on stationary and mobile sources. Staff also recognizes the need for sufficient penalties for those who violate air pollution rules.

Comment Letter from Consumer Specialty Products Association (Comment Letter 15)



August 16, 2016

via electronic transmission

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765

Subject: CSPA Comments on Draft 2016 Air Quality Management Plan (June 2016)¹

Dear Sir or Madam:

The Consumer Specialty Products Association (CSPA)² appreciates the opportunity to offer comments on the Draft 2016 Air Quality Management Plan (AQMP) dated June 2016. We understand that the South Coast Air Quality Management District (AQMD) intends to consider all comments received on this initial draft AQMP and release a revised draft in September for further comment, along with a response to previous comments in October, prior to releasing a draft final AQMP in November. The AQMD plans to adopt a final 2016 AQMP in December for subsequent approval by the California Air Resources Board (ARB), after which it will be combined with the 2016 State Strategy for submission to the U.S. Environmental Protection Agency (EPA) as an update to the California State Implementation Plan (SIP) for Ozone and PM_{2.5}.

15-1

CSPA has participated as an active stakeholder representing the consumer products industry in all of the California ozone SIP updates since the 1980s, and has worked cooperatively with ARB in the implementation of SIP measures seeking to reduce the emissions of volatile organic compounds (VOCs) from the use of consumer products in the state. Those efforts have resulted in more than 50% reduction in VOC emissions from consumer products during the past 25 years, which has contributed to the improvement in air quality throughout California.³

¹ Hereinafter referred to as "Draft 2016 AQMP." The full text of this document is posted on the AQMD website at: <http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/Draft2016AQMP>.

² CSPA is a voluntary, non-profit national trade association representing approximately 250 companies engaged in the manufacture, formulation, distribution, and sale of products for household, institutional, commercial and industrial use. CSPA member companies' wide range of products includes home, lawn and garden pesticides, antimicrobial products, air care products, automotive specialty products, detergents and cleaning products, polishes and floor maintenance products, and various types of aerosol products. Through its product stewardship program Product Care[®], and scientific and business-to-business endeavors, CSPA provides its members a platform to effectively address issues regarding the health, safety, sustainability and environmental impacts of their products.

³ ARB regulations have set VOC limits for 129 broad categories of consumer product; when fully effective, these regulations will reduce VOC emissions by about 50 percent compared to 1990 levels. See "Staff Report: Initial Statement of Reasons for Proposed Rulemaking Proposed Amendments to the

1667 K Street NW, Suite 300 | Washington, DC 20006 | www.cspa.org | 202-872-8110

CSPA Comments on the Draft 2016 Air Quality Management Plan
 August 16, 2016
 Page 2 of 6

The Draft 2016 AQMP relies primarily on NOx reductions to be obtained through measures outlined in the AQMP and in the ARB's 2016 Mobile Source Strategy. CSPA strongly supports this aspect of the AQMP as consistent with compelling scientific evidence that NOx reductions are the best strategy, indeed the only strategy that can provide significant further reductions in ambient ozone, ambient PM_{2.5}, and greenhouse gas (GHG) emissions in the South Coast Air Basin (SCAB or Basin) and elsewhere in California. The AQMP seeks to obtain 43% additional NOx reductions by 2023, and an additional 55% NOx reductions by 2031 in the Basin.⁴ In all, the AQMP and ARB's Mobile Source Strategy seeks to obtain 80% reduction in ozone and PM precursors (NOx and VOCs), 45% reduction in GHG emissions, 50% reduction in petroleum usage, and 45% reduction in diesel PM emissions in the state.⁵ The Draft AQMP and State Strategy are based on modeling that demonstrate that these levels of reductions are sufficient to meet the relevant federal ozone and PM_{2.5} standards.

15-1
 Con't

The Draft 2016 AQMP includes numerous measures proposed to be adopted by AQMD that, together with reductions from the 2016 State Strategy, will obtain the NOx reductions required. These measures include many that provide VOC reductions along with the NOx reductions that are their primary goal. However, the Draft 2016 AQMP also includes one single new control measure to further reduce VOCs from formulated products used by commercial facilities. The measure is described as follows:

CTS-01 – FURTHER EMISSION REDUCTIONS FROM COATINGS, SOLVENTS, ADHESIVES, AND SEALANTS: This control measure seeks limited VOC emission reductions by focusing on select coating, adhesive, solvent and sealant categories by further limiting the allowable VOC content in formulations or incentivizing the use of super-compliant technologies. Examples of the categories to be considered include, but are not limited to, coatings used in aerospace applications, adhesives used in a variety of sealing applications, solvents for graffiti abatement activities. Reductions could be achieved by lowering the VOC content of a few categories within SCAQMD source-specific Rules 1113, 1124, 1144, 1168, and 1171 where possible, especially where the majority of products already meet lower limits. For solvents, reductions could be achieved by promoting the use of alternative low-VOC products or non-VOC product/equipment at industrial facilities. The tightening of regulatory exemptions can also lead to reduced emissions across multiple use categories.⁶

15-2

CTS-01 would include rules adopted in 2017-2021 and implemented in 2020-2031 that would be required to obtain a total of one ton-per-day of VOC reductions in the district by 2023 and two tons-per-day by 2031.⁷ While CSPA recognizes the need to consider all emission sources, we will express concerns in these comments regarding the need to include new measures targeting further VOC emission reductions from sources not associated with NOx emissions. Information provided throughout the 2016 AQMP as well as the 2016 State Strategy make it very clear that

Antiperspirants and Deodorants Regulation, the Consumer Products Regulation, the Aerosol Coating Products Regulation, the Tables of MIR Values, Test Method 310, and Proposed Repeal of the Hairspray Credit Program" (August 7, 2013) at Executive Summary-2.

⁴ Draft 2016 AQMP at p. ES-2.

⁵ Proposed 2016 State Strategy at p. 2.

⁶ Draft 2016 AQMP at p. 4-19.

⁷ Draft 2016 AQMP at p. 4-12.

CSPA Comments on the Draft 2016 Air Quality Management Plan
August 16, 2016
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there is no need for further VOC reductions (beyond those obtained through implementation of NOx controls) for maintaining the ozone and PM_{2.5} standards in South Coast or elsewhere in California. We therefore urge that CTS-01 be removed from this AQMP.

15-2
Con't

In the following sections, we will comment on various specific sections of the Draft 2016 AQMP.

Chapter 1

This chapter provides an excellent overview of the successful history of SCAQMD and ARB efforts to improve air quality in the South Coast. CSPA and the consumer products industry is proud to have played a role in helping achieve this improved air quality through reducing VOC emissions from consumer products by more than 50% over the past 25 years.

Nevertheless, the period when further reductions in low-reactivity VOCs such as those in consumer and commercial products will further lower ozone formation is now past, as we documented at great length to the ARB in response to their Proposed 2016 State Strategy.⁸ We therefore recommend that AQMD take this opportunity to reconsider the need for all VOC reduction measures not associated with NOx reductions in this AQMP, and also reconsider the necessity of the measures from the 2012 AQMP whose rulemakings have not been completed (including CTS-02 and CTS-03).⁹

15-3

Among the White Papers noted in this chapter¹⁰ is the VOC Controls White Paper, which provides cogent evidence that VOC emission reductions have a very minor role to play in ozone attainment strategies in the South Coast. Indeed, the only need for further VOC reductions is in the short term to prevent modest increases in ozone formation in west Los Angeles, and CSPA believes that these reductions are best obtained by the reductions in high-reactivity VOCs obtained by measures in this AQMP and the ARB State Strategy that are primarily focused on NOx reduction.

Chapter 3

The tables of VOC and NOx emissions per source category in this chapter show consumer products as among the largest VOC emission sources in the base year of 2012. It is important to understand, however, that the very low reactivity VOC emissions from consumer products did not have a significant impact on ozone formation even in 2012, and are having a diminishing impact as NOx emissions are reduced and air quality improves. By the time South Coast is in attainment of the 75 ppb ozone standard, the region will be "NOx-limited" and consumer product and other low-reactivity VOC emissions will have virtually no impact on ozone formation.

15-4

Chapter 4 and Appendix IV-A

The description in the State and Federal Control Measures section¹¹ cites reductions to be obtained from the Proposed 2016 State Strategy for the SIP that was released for comment on

15-5

⁸ See CSPA Comments to ARB on the Proposed 2016 State Strategy, dated July 6, 2016; available on request.

⁹ Draft 2016 AQMP at p. 1-13.

¹⁰ Draft 2016 AQMP at pp. 1-15 to 1-17.

¹¹ Draft 2016 AQMP at p. 4-28 to 4-30.

CSPA Comments on the Draft 2016 Air Quality Management Plan
 August 16, 2016
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May 17, 2016. That proposed state strategy includes for the South Coast 107 tons-per-day in NOx by 2023, and 97 additional tons-per-day NOx reductions by 2031. The proposed state strategy also includes 48 tons-per-day VOC reductions by 2023 and an additional 60 tons-per-day VOC reductions by 2031, with almost all of those VOC reductions coming from the same measures whose primary goal are NOx reductions. The lone exception is the 5 tons-per-day from the Consumer Products Program measure, which CSPA believes is unnecessary for attainment of federal and state air quality standards, and therefore outside of state authority to regulate. This was documented in some detail in CSPA’s comments to the ARB last month.¹² We believe that there is clear evidence in the VOC Controls White Paper and this Draft 2016 AQMP as well that those 5 tons-per-day in VOC emissions by 2031 would not contribute to ozone attainment in South Coast.

Table 4-2 lists a significant number of proposed stationary source measures aimed at NOx reductions, and some of those measures also have corresponding VOC reductions associated with them. These measures are further detailed in Appendix IV-A. CSPA concurs that these measures, if feasible, could contribute to ozone and PM_{2.5} attainment, and in some cases might help provide the small short term VOC reductions needed to prevent temporary ozone increases in west Los Angeles as NOx is further reduced. The final three measures—FUG-01, CTS-01 and FLX-02—were identified as means to achieve limited, strategic VOC controls. CSPA are in agreement that VOC controls should be limited and strategic, and that efforts should be made to apply the latest advances in technology to detect and minimize VOC emissions. However, given that these measures have no associated NOx reductions, and are unlikely to contribute significantly to attainment, specific emissions reductions should be delayed until both feasibility (*e.g.*, the use of new technology like LDAR under Phase I of FUG-01) and necessity have been demonstrated. We therefore recommend that the reductions targeted for these VOC-only measures be eliminated from the AQMP.

Specifically, in Appendix IV-A the description of CTS-01, which seeks “Further Emission Reductions From Coatings, Solvents, Adhesives and Sealants” cites the VOC Controls White Paper (released in 2015) and professes a need for modest additional VOC controls to “help avoid temporary increases in ozone concentrations in the western side of the Basin.”¹³ However, the description fails to provide any reason to believe that further reductions in these low-reactivity VOCs would actually help in this regard, or why the high-reactivity VOC reductions associated with NOx measures would not be sufficient for that purpose. The description goes on to note other recommendations from the White Paper, including that VOC reductions should be favored that gain those reductions as co-benefits from NOx, greenhouse gas, and air toxics control measures, but does not justify why this and two other measures are proposed that are not consistent with that policy goal.

The proposed method of control for CTS-01 is proposed to be achieved by closing loopholes and lowering VOC content for a select few categories where most products already meet lower VOC limits. However, without defining which loopholes and categories are under question, it is not feasible to know whether such measures would contribute measurably toward meeting the AQMP objectives, nor can the cost-effectiveness--ranking third—be independently assessed.

15-5
 Cont

¹² See CSPA Comments to ARB on the Proposed 2016 State Strategy, dated July 6, 2016; available on request.

¹³ Draft 2016 AQMP, Appendix IV-A at p.IV-A-85.

CSPA Comments on the Draft 2016 Air Quality Management Plan
August 16, 2016
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Until these specifics are defined, CSPA recommends that the cost-effectiveness estimate be revised to be “TBD,” consistent with other measures.

CSPA once again recommends that AQMD remove all VOC-only reduction targets from this AQMP, and rely on co-benefits from other measures to obtain the short-term VOC reductions needed to avoid temporary ozone increases. In particular, CSPA recommends that the rulemaking to amend Rule 1168 on adhesive and sealant applications remain indefinitely suspended.

15-5
Con't

Chapter 5 and Chapter 8

These chapters include a “first look” at what additional reductions will be needed to attain the 70 ppb 2015 ozone standard by 2037, concluding that NOx emissions in the South Coast will need to be reduced from the 100 tons-per-day (needed for the 75 ppb standard) to 75 tons-per-day.¹⁴ There is no mention of any need for further VOC reductions. We believe that this result is consistent with the attainment modeling results we have seen to date, since the region will remain NOx-limited throughout that period.

15-6

Chapter 6

The cost-effectiveness assessment of stationary source measures estimates that CTS-01, which only targets VOC emissions for reduction, would be the fourth most cost-effective measure in terms of cost per ton of emission reduced. We believe that this is misleading, since the associated VOC reductions would have essentially no impact on ozone reduction. CSPA believes that the appropriate and most relevant form for estimating cost effectiveness should be the cost for a given improvement in air quality. In this case, the cost effectiveness would be estimated in terms of cost per ozone reduction, which would rank CTS-01 and other VOC control measures far lower in cost effectiveness. Furthermore, it is also misleading to provide a cost estimate given that the mechanisms by which further reductions could be accomplished have not yet been defined.

15-7

Appendix III

The baseline and future-year inventories shown here estimate that consumer products will grow from 20% of VOC emissions in 2012 to 29% in 2031.¹⁵ This result is caused primarily by the continued reductions of high-reactivity VOCs associated with already-adopted measures aimed at NOx whose reductions are being phased in during that period. This should not be interpreted to indicate that consumer product VOC emissions are contributing an increasing amount to ozone formation. The low-reactivity VOCs in consumer products had little or no impact on ozone formation in 2012, and that impact will only be further decreasing during future years.

15-8

Appendix IV-B

ARB’s Mobile Source Strategy for South Coast as described at length in this appendix would provide South Coast 81% reduction in NOx emissions from on-road and off-road measures.¹⁶ In

15-9

¹⁴ Draft 2016 AQMP at p. 5-28 and pp. 8-3 to 8-5.

¹⁵ Draft 2016 AQMP, Appendix III at p. III-2-57 and p. III-2-69.

¹⁶ Draft 2016 AQMP, Appendix IV-B at p. IV-B-5.

CSPA Comments on the Draft 2016 Air Quality Management Plan
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addition, the state strategy would supply 48 tons-per-day in additional ROG (VOC) emissions by 2023 and 55 additional tons-per-day by 2031 from those on-road and off-road measures.¹⁷ CSPA believes that those high-reactivity ROG/VOC reductions alone are more than sufficient to prevent any temporary increases in ozone in the western basin.

15-9

Appendix V

This appendix on the results of South Coast attainment modeling has not been posted for review. CSPA will review this information and file supplemental comments when Appendix V becomes available.

15-10

Summary and Conclusions

CSPA appreciates the opportunity to comment on this Draft 2016 AQMP. In these comments we are recommending that the measure CTS-01 and other measures not associated with NOx reductions be removed from the AQMP, since those measures have not been shown to be necessary for attainment of the air quality standards that are the purpose of the AQMP. If you have any questions, please contact us at (202) 872-8110.

Respectfully submitted,



D. Douglas Fratz
Senior Science Fellow



Joseph T. Yost
Senior Director, Strategic Issues Advocacy



Kristin Power
Vice President, State Affairs



Steven Bennett, Ph.D.
Senior Director, Scientific Affairs & Sustainability

cc: CSPA Air Quality Committee and Task Forces

¹⁷ Draft 2016 AQMP, Appendix IV-B at p. IV-B-9.

Responses to Comment Letter from Consumer Specialty Products Association (CSPA)
(Comment Letter 15)

Response to Comment 15-1:

Staff appreciates the commenter for being an active stakeholder for past decades and cooperating with SCAQMD and CARB in implementing ozone SIP measures to reduce VOCs from consumer products.

Response to Comment 15-2

Volatile organic compounds (VOCs) contribute to ozone formation and PM_{2.5} levels through secondary organic aerosols. The Basin does not currently meet federal and State standards for ozone and PM_{2.5}.

The modeling analysis suggests that approximately 55 percent NO_x reduction is needed in 2031 to meet the 75 ppb ozone standard. The reduction is beyond the projected baseline, which reflects reductions due to already adopted measures. Still, on the course to attainment, if the AQMP were to rely on NO_x reductions alone, certain parts of the western Basin surrounding central Los Angeles are expected to experience inadvertent increases in ozone concentration. VOC reductions, whether they are concurrent reductions from the NO_x strategy or result from stand-alone controls such as the consumer products program, should be achieved, if not avoid completely, the inadvertent increase of ozone. Several million people are estimated to be subject to this inadvertent increase of ozone. Also, VOC is effective for meeting the 1-hour ozone standard.

While some PM_{2.5} is emitted directly from sources, the majority of ambient PM_{2.5} in certain parts of the Basin is from gas to particle formation in the atmosphere. The secondary organic particulate formation results largely from atmospheric reactions on VOCs. In order to develop an effective control strategy, one must consider the composition and by extension, the sources of PM_{2.5} in the Basin. In the Basin, approximately 30 to 50 percent of the PM_{2.5} mass is composed of organic compounds. Therefore, a VOC and NO_x combined strategy would aid in mitigating interim increases in ozone, especially in the highly populated western side of the Basin, while potentially providing additional benefits for PM_{2.5}, toxics, and greenhouse gases. A control strategy that focuses primarily on NO_x reductions, with additional strategic and cost-effective VOC reductions, is the most desirable way to minimize the general public's exposure to unhealthy ozone pollution not only in the target attainment year, but also during the course of the control effort. Strategic VOC reductions will be developed in the most economically feasible way including VOC reactivity to yield ozone and PM_{2.5} formation potential.

Response to Comment 15-3:

Please see Response to Comment 15-2 with regard to the need for further VOC reductions.

Response to Comment 15-4:

Different chemical reactions are responsible for the formation of ozone and secondary organic aerosols (SOAs) from volatile organic compounds (VOCs). Since both ozone and PM_{2.5} formation are largely dominated by atmospheric reactions, we must consider the potential for a VOC to contribute to both ozone and PM_{2.5} levels. Organic compounds with large ozone formation potentials may or may not contribute significantly to PM_{2.5} mass. Similarly, many gaseous organic compounds classified as VOCs, intermediate-VOCs (IVOCs), or Semi-VOCs (SVOCs) that contribute to SOA may or may not play a significant role in the formation of ozone.

Therefore, a VOC and NO_x combined strategy would aid in mitigating interim increases in ozone, especially in the highly populated western side of the Basin, while potentially providing additional benefits for PM_{2.5}, toxics, and greenhouse gases. A control strategy that focuses primarily on NO_x reductions, with additional strategic and cost-effective VOC reductions, is the most desirable way to minimize the general public's exposure to unhealthy ozone pollution not only in the target attainment year, but also during the course of the control effort.

Response to Comment 15-5:

Please see Response to Comment 15-2 regarding VOC controls in FUG-01, CTS-01, and FLX-02 measures.

The chemical reactions that form ozone are highly complex and depend not only on NO_x and VOC levels, but also on the ratio of VOC to NO_x concentrations. NO_x emissions can even reduce ozone concentrations in the immediate vicinity of an emission source, but will contribute to more ozone formation downwind. A decrease in ambient VOC concentrations generally leads to a decrease in ozone. However, because of the complex chemistry involved, a decrease in NO_x concentrations may lead to a decrease or an increase in ambient ozone depending on the local VOC concentration. The local VOC concentration is a mixture of many distinct compounds, each with unique impacts on ozone formation. This complex dependence on NO_x and VOC concentrations leads to interesting policy implications, which can be explored using comprehensive air quality models.

The Community Multiscale Air Quality (CMAQ) model has been used to investigate the ozone concentrations as a result of various levels of VOC and NO_x emissions under different control strategies. The CMAQ model, which is the U.S. EPA recommended regulatory model, is considered the preeminent, state-of-the-science air quality model for analyzing air quality improvement strategies. Since ozone concentrations are a complex function of both NO_x and VOCs concentrations, we use a three-dimensional plot to visualize this dependency. The Empirical Kinetics Modeling Approach (EKMA) ozone "isopleths" diagrams illustrate the outcomes of this complicated chemistry.

The modeling analysis suggests that approximately 55 percent NO_x reduction is needed in 2031 to meet the 75 ppb ozone standard. The reduction is beyond the projected baseline, which reflects reductions due to already adopted measures. Still, if the AQMP were to rely solely on NO_x reductions on the course to attainment, certain parts of the western Basin surrounding central Los Angeles are expected to experience inadvertent increase in ozone concentration. VOC reductions, whether they are concurrent reductions from NO_x strategy or resulted from stand-alone control such as the consumer products program, should reduce, if not avoid completely, the inadvertent increase of ozone in the western side of the Basin where millions of people may be subject to the exposure. Geographical location of such VOC sources that are subject to the strategic VOC controls are an important consideration to develop VOC control measures to minimize such inadvertent exposure.

In addition, CTS-01 does contribute toward the AQMP objectives since VOC reductions are one of the AQMP objectives. Cost effectiveness is assessed by comparing the control measure costs to VOC reductions, not ozone reductions.

Response to Comment 15-6:

Please see Response to Comment 15-2 with regard to the need for additional VOC reductions.

Response to Comment 15-7:

Please see Responses to Comments 15-2 and 15-5 regarding cost-effectiveness of CTS-01 and associated VOC reductions. Additionally, the majority of the VOC emission reductions are projected to come from continuing the Rule 1168 amendment that was suspended in 2014.

Response to Comment 15-8:

Please see Response to Comment 15-2 regarding the impact of VOC emissions on ozone formation. The increased percentage of VOC emissions shows that consumer products play a significant role in ozone formation and should be at the forefront when considering further VOC reductions. In addition, given that the VOC emissions associated with consumer products occur in densely populated urban centers, the ozone and PM_{2.5} formed from the VOCs, even if they have low reactivity, still increase the level of exposure to millions of population, therefore, the strategic but limited VOC reductions are still needed and included in the AQMP.

Response to Comment 15-9:

Simulations with incremental VOC and NO_x emission reductions from 2023 and 2031 baseline emissions were generated to create ozone isopleths for each station in the Basin. The ozone isopleths provide guidance in developing control strategies by depicting ozone concentrations as a function of both NO_x and VOC reductions. They provide the basis for estimating the Basin carrying capacity and the maximum allowable emissions of NO_x and VOC to reach attainment. Both 2023 and 2031 baseline scenarios without any additional reduction beyond already adopted measures do not lead to attainment, indicating additional emission reductions are necessary to meet the standards. Additional limited VOC reductions will avoid any increases in western Basin ozone exposure above the 2023 attainment target. A “weekend effect”, typically experienced in urban areas, results from reduced NO_x emissions on weekends leading to higher ozone and consequently more weekend days exceeding the standard. This indicates a benefit of VOC reductions to minimize inadvertent ozone increases during the course of NO_x reduction. In addition, the weekend effect is stronger in the western part of the Basin. Given that the majority of the VOC emissions from consumer products are located in urban population center, the emission reductions on that category provides significant benefit to reduce ozone and PM_{2.5} exposure despite of the low reactivity.

In addition, the model demonstrated that the 2022 one-hour ozone standard is sensitive to VOC reductions; therefore, early VOC reductions are crucial for reaching attainment.

Response to Comment 15-10:

Please see Response to Comment 15-2 with regard to the need for CTS-01 and other VOC measures not associated with NO_x reductions.

Comment Letter from Julie Stoll (Comment Letter 16)

From: Julie Stoll [<mailto:jeffersonstoll@hotmail.com>]
Sent: Tuesday, August 16, 2016 4:10 PM
To: Public Advisor <publicadvisor@aqmd.gov>
Subject: Clean Air Plan

SCAQMD:

It is absolutely imperative that your agency address the appalling air pollution levels in Southern California. Therefore, I would like to commend you for drafting a plan to clean our dirty Southern California Air. However, the plan is lacking in several areas.

16-1

The main problem with CalARP plan is that it does not require big polluters like refineries to do anything. Rather, the language seems to just encourage refineries to make important, safer changes. I would like to see requirements imposed and enforced on refineries. They make billions of dollars of profits, yet are not held accountable for air pollution.

One issue that is of particular importance to those who work or reside in Torrance is the fact that the Torrance Refining Company uses hydrofluoric acid (they call it modified, however there is only a 10% additive). This absolutely must be banned. The language in the plan should clearly ban it with absolutely no way for the refinery to continue using this deadly substance that could kill thousands.

16-2

Speaking as a representative of what many other citizens are feeling, we are fed up. I am seriously considering moving away. The days where refineries heavily influence agencies like yours because of the money they acquire endangering our lives must end. Please stand up for what is right. Impose strict regulations on refineries - especially refineries that operate in densely populated areas like Torrance.

Sincerely,
Julie Stoll

Responses to Comment Letter from Julie Stoll
(Comment Letter 16)

Response to Comment 16-1:

The December 2015 amendments to the RECLAIM program established a NOx RECLAIM Trading Credit (RTC) allocation shave of 56 percent to the largest emitters in the program, which include the refineries. This reduction in allocations will result in the installation of the Best Available Retrofit Control Technology (BARCT) at most of these facilities. Otherwise, these facilities will be in violation of SCAQMD rules for having their emissions exceed their allocations.

Response to Comment 16-2:

The SCAQMD recognizes the potential hazards of using HF at refineries. It is used as an alkylating agent to boost the octane of gasoline. An alkylation technology study was conducted by Norton Engineering Consultants and the final report was completed on September 9, 2016. This report looked at possible alternative technologies for the use of HF at refineries, and it was determined that the most viable and commercially available option is sulfuric acid alkylation. Although this method is commercially available, there has not been any documented conversion of an alkylation unit from HF to sulfuric acid. There are also inherent risks in the transportation of concentrated sulfuric acid, and such a conversion would cost in the \$100 million dollar range. Another alternative that was identified was solid acid alkylation and the costs for conversion were estimated to also be in the \$100 million dollar range. Hydrofluoric acid is not a precursor to ozone or PM2.5 so there are no control measures for it in the AQMP. However, the SCAQMD's Rule Forecast Report (Agenda Item 19 from the December 2, 2016 Governing Board agenda) lists a potential rulemaking applying to the use of hydrogen fluoride at refineries, tentatively scheduled for December 2017.

Comment Letter from Stephanie Pincetl (UCLA) (Comment Letter 17)

Stephanie Pincetl
Professor in Residence
UCLA Institute of the Environment and Sustainability
(attribution for information only)

August 16, 2016

Air Quality Management Plan Draft 2016.
South Coast Air Quality Management District

Comments on Chapters Four and Ten

Chapter Four: Control Strategy and Implementation.

Chapter Four provides insight into the AQMD proposed path to achieving emission reductions to meet air quality goals. The most prevalent strategy is to provide incentive funding and supporting infrastructure.

Comments on Incentive funding

Incentive funding is an alternative to setting command and control standards and imposing fines for non-compliance. Often the two strategies are coupled, and/or can be coupled to ensure best implementation of change, ensuring that smaller businesses, companies that are less well capitalized or other entities are provided sufficient assistance so they can implement change. This approach does not seem to be what is present in the AQMD, rather all entities are treated similarly and encouraged to access incentives.

For incentive funding to be viable the following are necessary:

- High levels of funding by the regulator
- High levels of staffing to implement
- Knowledgeable staff to ensure no fraud
- Full customer information
 - Strong outreach and education
 - Nondiscriminatory rules and regulations (e.g. ability of small undercapitalized entities to access funding)
 - Regional networks
- Straightforward, flexible and easy access to the funding
- Level playing field
- Sufficient funding to make programs worthwhile for the customer of the incentive
- Tracking implementation
- Tracking savings

Often one or more of these necessary attributes for incentive programs are absent, and programs fail. Incentive programs also suffer due to requirements for recipients to have certain types of credit to qualify, and/or ability to repay, a way to protect the incentive-provider but

17-1

which can discourage participation. If there are intermediaries who handle the programs, they may also have requirements. The burden of obtaining an incentive can be quite high.

Further incentive programs put the burden on the public to be knowledgeable and to be proactive. This is a cost that is rarely included in cost/benefit assessments.

Neither the report nor the appendices provide detail amount of funding to be available, exact programs and funding for each. There does not seem to be a prioritization scheme for who gets the funding, nor mechanisms to ensure fairness among sectors and sizes of market participants in sectors.

17-1
Con't

No quantification of potential savings that could accrue by sector, nor penetration needed for the potential savings. No cost estimates for achieving significant penetration.

Specific Comments

Pg. 4-6

Why is it unfair that stationary sources should bear "fair-share" since AQMD has most jurisdiction over stationary sources. This is not explained. What is the basis for fairness?

17-2

4-8

If NOx is one of the major air quality issues in the region relative to attaining the federal ozone standards, reliance on more natural gas (instead of diesel), simply pushes the problem off into the future, natural gas still pollutes. Using natural gas as an ozone and NOx emissions reductions strategy reinforces an infrastructure that will create path dependencies and lock-in, involving large costs to unravel in a renewable electricity future. Those interests who invested in natural gas will resist the change and it will involve losses for those interests. The Plan creates a pathway that will costly to shift in the future.

17-3

Further, while it is true that natural gas emits less CO2 and NOx, this does not take into account supply chain emissions. While AQMD's purview is air quality in the basin, climate impacts of drilling and extraction of natural gas from wells and its transportation in pipelines (as well as leaks as with Aliso Canyon) contribute substantially to emissions that are climate changing. Thus AQMD should add the supply chain emissions in its analysis of natural gas, as the basin is impacted by global GHG and methane emissions

4-9

Measures are cast as costs; there are no benefits discussed. Health benefits are a major driver of the new ozone standard. While there is a mention of negative public health consequences from failure to meet air quality standards, improving public health is a major benefit thus transitioning to cleaner transportation technologies will also have significant benefits, not just costs. The paragraph should also acknowledge that any mitigation of climate change is a benefit for the region.

17-4

Tables 4-2 on 4-10 & 4-11

Very difficult to know what is going to be done.

17-5

For existing buildings there is no data base that tracks energy efficiency program effectiveness other than by using modeled, sampled or self-reported data. This means that the rebound effect is rarely captured, and, at the same time, the modeled savings are very modest, as the **Technical Appendix IV-A-31** shows. The UCLA Energy Atlas (www.energyatlas.ucla.edu), shows, for example, a significant rebound effect in new residences in wealthy areas. While very efficient per square foot of new construction, per capita energy consumption in Malibu, for example, is ten times greater than that of residents in South Los Angeles. Relying on energy efficiency investments will likely not be enough to reduce total consumption. The deployment of EE programs to date have not been systematic, have not been data driven, rely on customers to know about the program, be willing to fill out arcane paperwork, and to pay a portion of the retrofit – whether for weatherization, or a refrigerator. (Have you looked at Gas Company rebates? \$75/50 for a clothes washer, \$200/150 for a tankless water heater, \$0.15/sq.ft. for insulation, not to mention the restrictions: -- existing insulation must be R-11 or less. The final insulation level must be R-38 or R-19 if there is less than 24 inches of attic clearance, and so on). Realistically, this strategy will not yield the kinds of turn-over of the building stock to more savings that is needed, the rebate programs are complex to access and qualify for, and the rebate amounts are too small for widespread transformation.

17-6

No state agency currently has sufficient data to determine energy use by buildings across AQMD territory, nor the actual implementation effectiveness of past EE programs by the utilities. Thus it is not possible to know hot-spots of energy inefficiency, the rebound effect, as mentioned earlier, nor what programs have worked where. It is strongly recommended that the agency avail itself of data driven analytics such as the UCLA Energy Atlas. As IV-A-27 states, 64 % of residential structures were built before 1979, these are where the savings will be. Since 48% of the residential properties are occupied by tenants, there also must be concerted new ways to target landlords. I suggest that there a requirement for energy upgrades for the renewal of any permit tied to rental properties. If the landlord cannot afford the upgrade then they can apply for a rebate, but all rental properties must upgrade.

In addition, the co-benefits from existing residential and commercial building energy efficiency measures and possible additional ones need to be explained (they are implicit in table 4-2, but could be made more clear).

Cool roofs should be mandatory and dark colored roofs forbidden in all zones of the region as well as for retrofits and all reroofing. The easiest strategy would be to forbid suppliers of roofing to carry dark colored roofing materials and to require solar reflectance of all roofing materials, a similar strategy as AWMD employed for low to zero VOC paints. It is useful to remember that at first the requirement for low flush toilets was seen as intrusive and was opposed; today they have been normalized.

Please define near-zero emissions.

Business Case for Clean Air Strategies

Shifting from the status quo to other technologies, practices and methods is never frictionless. Change may favor some interests over others, that is the nature of change – the status quo is disrupted. Thus the question becomes, when creating a business case for near zero emissions (not defined), what does this mean and for which businesses, all existing ones? Further, enhancing clean air has indirect benefits for businesses by improving health. Hence the definition of business case must include public health benefits – less sick days, less absenteeism, less doctors and hospital visits, and, for children, better lung development, better school attendance, better future workforce.

17-7

Further, new equipment can be counted as a cost, or a benefit. If it is manufactured locally, it is a benefit for jobs and manufacturing while being a cost for the purchaser.

Appendix IV –A-45

Are all of these measures commensurable in impact on air quality? Should they not be prioritized and rank ordered?

What is the rationale for regulatory relief and how has it affected compliance?

How will AQMD work with agencies, utilities, businesses and other stakeholders to accomplish all that is listed at the bottom of IV-A 46?

It would seem that AQMD would be best off establishing standards and if businesses needed help meeting them, then an incentive program could be developed. I see no standard for performance in this discussion.

Mechanisms will be explored to incentivize businesses and facilities to choose the cleanest technologies as they replace equipment and upgrade facilities, and to provide incentives to encourage businesses to move into these technologies sooner. Although replacement of older, higher emitting sources is expected to have the greatest potential for emission reductions, providing incentives and eliminating barriers for new sources to manufacture and use ultra clean technologies is also important. IV-A-47

This is an example of the need for standards. What is cleanest? Who decides? What is clean enough?

17-8

IV-A-48: Record keeping sentence makes no sense.

17-9

What are the enforcement mechanisms?

Incentive effectiveness

“Given the potential variety of programs and projects that will be developed, the incentive effectiveness is only an estimate based on the specific equipment and facilities identified. Once a **working group** is established, staff expects additional types of equipment and processes improvements to be identified for facility modernization. The equipment/industries identified are only an example of a pathway to the five tpd reductions based on the data in the AER and permitting systems. Upon implementing the VIP, the incentives will be allocated based on pre-defined criteria developed by the working group (e.g. incentive effectiveness, funding partnership opportunities, capital cost of equipment, maximum NOx reductions, location in or

17-10

near EJ areas, small business, etc.). The incentive effectiveness for specific incentive programs will be determined as they are developed and implemented by the SCAQMD. It is anticipated that \$450 million dollars will be allocated to achieve five tpd of NOx emission reductions from this incentive programs. Incentives may include grants for the new purchase of equipment as well as loan programs in areas where capital costs are high but long-term cost savings from increased efficiency are achieved. **Public funding or public-private partnerships** can be used to tip the balance towards a business case for investments when equipment upgrades do not offer sufficient returns for private investment. The SCAQMD will work together with businesses, other government agencies, and public utilities to implement incentive programs that will reduce the most emissions with the least amount of cost." IV-A-56

17-10
Con't

The public is missing from this stakeholder working group discussion especially if there is to be public funding involved.
Further, this approach has very high transaction costs and will skew the discussion toward entities with staff that can be devoted to the discussion.

In Chapter 4, additional comments beyond buildings
CMB-05- The RECLAIM assessment discussion is unclear, need to expand on the statement that it included more RTCs than necessary and how that is being redressed, particularly in light of cap and trade.

17-11

BCM-10
What is the cost of implementation and who will bear it? How much VOC and ammonia will be avoided and how does it fit with city led increased composting targets?

17-12

FUG-01 Smart LDAR, FTIR etc. . . self-reporting These new technologies will be paid for through incentives? Is there spot checking by AQMD? What is the cost benefit of having the agency do this itself as it is essentially remote sensing? It could also be contracted out to a university.

17-13

FLX-02 seems like a great deal more work for agency staff: develop incentive funding, permitting and fee incentives and enhancements, NSR incentives and enhancements, branding incentives, record keeping and reporting. Would AQMD do the branding, or is this a consultant's role?

17-14

Emissions Growth Management
EGM 01
Discussion, no action.

17-15

Facilities-based mobile sources/ warehouses
Should require electrification at rail yard and intermodal facilities and electrify short-haul entirely.
Stakeholder should include nearby residents.

Goals seem modest for dirty vehicle retirements

MOB-11

If this extended exchange program for the lawnmower and leaf blower exchanges (55,000 lawn mowers), is seen as success, then it would be useful to have a definition from the agency of what success means. The penetration of this program is woefully inadequate, and is hopefully not an example of what is desired for, say, building retrofits.

17-16

Chapter 10

The most striking part of this chapter is 10-12 and the projection that electricity use will grow 20 percent from 2012 – 2031, an average of 1.1 percent a year. Does this take into account SB 805 targets and other statewide goals?

AQMD has an obligation to ensure that conservation efforts, like some of those discussed above, are successful. If SB 805 is not included in the 1.1 a year, then there is no reason why existing building energy use cannot be reduced to counter balance 1.1 percent energy use each year. However, if it is, then incentive programs will likely be insufficient to address increased energy increases, and most of the programs described in the Plan will be inadequate.

The goals for the region must be the reduction of energy use, efficiency is only one strategy. While AQMD cannot infringe on the existing authority of counties and cities to plan or control land use, with AB 32 and SB 375, AQMD has a strong role to play in providing critical air quality analysis for land use decisions. Developing stronger alliances with cities and counties around the air quality implications of land use decisions and incentives for land uses that are less transportation dependent and building patterns that are conducive to low emissions should also be part of the AQMD tool kit for addressing air quality.

17-17

Responses to Comment Letter from Stephanie Pincetl (UCLA)
(Comment Letter 17)

Response to Comment 17-1:

Staff appreciates the insight and suggestions regarding implementing a viable incentive program. These will be considered when the individual incentive program and guidelines are being developed. The guidelines are expected to address detailed implementation specific to the different incentive programs. A Financial Incentive Funding Action Plan is currently under development that will provide more detail as to the possible sources of funding available.

Response to Comment 17-2:

The SCAQMD has primary responsibility in developing a control strategy to demonstrate attainment of the air quality standards and has primary authority over stationary sources. So, if the control strategy fails to reach attainment, it would be likely more reductions would need to occur from stationary sources unless an agreement is reached with state to commit to more reductions. Because most of the stationary sources are already subject to the most stringent controls in the nation, the statement in the Draft Plan that it is unfair that stationary sources alone should bear emission reduction burden without an adequate and fair-share level of reductions from all sources would be a valid statement. This clarification has been added to the Revised Draft 2016 AQMP.

Response to Comment 17-3:

The SCAQMD has a long-standing policy of technology and fuel neutrality; however, staff also recognizes the benefits of cleaner technologies to reduce air pollution given multiple environmental goals. One of the objectives for the 2016 AQMP is to prioritize maximizing emission reductions utilizing zero-emitting technologies when cost-effective and feasible, and near-zero technologies in all other applications. In some cases near-zero technology may rely on natural gas, but zero-emitting technology will be useful when feasible. Also, SCAQMD must obtain NO_x reductions to meet the 1-hr and the 80 ppb 8-hr ozone standards which may require near-zero technology where zero-emission technology is not yet feasible.

Response to Comment 17-4:

Thank you for your comments. Benefits to public health and climate change mitigation have been added to this paragraph.

Response to Comment 17-5:

Because Table 2 is too big to be fit in one page, control measures in the table are grouped by target pollutant, such as NO_x or VOC, and then are re-grouped by nature of measures, either regulatory, co-benefits, incentive-based, or other measures.

Response to Comment 17-6:

We support the development of energy efficiency metrics that directly measure efficiency programs effectiveness, not only encouraging and tracking energy savings, but also to track emission reductions.

Rental properties are eligible to apply for rebates and incentive programs. This would be difficult for SCAQMD to enforce, but will look into this further.

In addition, ECC-04 proposes the implementation of similar standards. Ongoing meteorological and chemical transport modeling will help determine if these measures lead to improvements in air quality.

Response to Comment 17-7:

If equipment cannot be replaced with a technology or a facility cannot be modernized to zero emissions, then a near-zero technology or design would be expected. There is no formal definition of “near-zero” but for the purposes of this AQMP, “near-zero” is defined as at least 90 percent decrease in NOx emissions compared to current emission standards. Different technology exists for different types of equipment. Some technology and equipment replacements have greater emissions reductions or are lower emitting than others. The purpose of the control measure CMB-01 is to adopt regulations and incentives to more facilities and businesses towards technologies with zero and near-zero emissions that may have been less cost-effective in the past. The SCAQMD will establish working groups to include all stakeholders and determine the most effective methods, balancing factors such as costs, emissions reductions, small businesses, Environmental Justice areas, etc.

Response to Comment 17-8:

Staff will form working groups to facilitate a dialogue between agencies, utilities, businesses, and other stakeholders to accomplish the proposed controls. Working group meetings could help affected or interested stakeholders address potential concerns that may arise from new technology and equipment replacement. An example could be coordinating a landfill facility with a city to provide biogas as a transportation fuel. Also the potential incentive concepts listed in CMB-01 can be discussed in the working groups to better coordinate between all entities.

Response to Comment 17-9:

One method inspection staff ensures compliance is through verification of operational or maintenance records. Recordkeeping and reporting requirements may be reduced for equipment that meets specific zero and near-zero emission technologies as an incentive. An example of a recordkeeping and reporting incentive can come from replacing a diesel internal combustion engine (ICE) with a fuel cell or battery storage. This diesel ICE may currently be required to keep fuel usage records, operation and weekly maintenance logs, and/or a fuel meter; however, if the facility changed to a fuel cell or battery storage fuel usage records, hour meter records, and operation logs may no longer be needed to be maintained and reported to enforcement to ensure compliance because the technologies are inherently clean.

Response to Comment 17-10:

Staff agrees all interested stakeholders including the public should participate in working group meetings and discussions. Staff will ensure outreach is conducted for all interested parties.

Response to Comment 17-11:

The RECLAIM program establishes a programmatic cap for the entire universe of facilities and investors. In order to maintain market liquidity and to allow opportunity for facility and industry growth, the allocations of RECLAIM Trading Credits must be greater than the programmatic emissions. At the same

time, however, the programmatic level of allocations must be equivalent to what would be achieved under command-and-control regulations and the SCAQMD is required under State law to perform periodic BARCT assessments to ensure equivalency.

Response to Comment 17-12:

BCM-10 discusses the affected industry, estimated amount of VOC and NH₃ reduced, and cost effectiveness of the proposed method of control. Increased diversion to composting is already considered and included in the inventory. The cost of implementation is estimated in the AQMP Socioeconomic Assessment Report.

Response to Comment 17-13:

It is undetermined to which technologies will be deployed, but once successful demonstration of technology is completed, it is anticipated that facilities would be required to pay for, maintain, and report on such systems, with SCAQMD oversight.

Response to Comment 17-14:

SCAQMD acknowledges the level of work to establish and implement an incentive program but also recognizes the benefits from encouraging and supporting transitions to cleaner technologies outside the regulatory framework, in particular for the short-term. SCAQMD staff has experience with developing incentive program guidelines, outreach, contracts, and enforcement. The SCAQMD in the past has awarded certifications to facilities and provided labeling for products. Staff is open to new ideas and depending on availability of staff resources, there could be consideration of securing assistance from a consultant.

Response to Comment 17-15:

The SCAQMD Mobile Source Measures are intended to help implement the State Mobile Source Strategy "Further Deployment of Cleaner Technologies" measures found in Appendix IV-B. One of the objectives of the measures is seeking greater deployment of zero-emission technologies wherever possible and near-zero emission technologies everywhere else.

The State Mobile Source Strategy contains a measure calling for zero-emission last mile delivery, which seeks to deploy zero-emission vehicles for short-haul deliveries.

For the facility-based measures and emissions growth management measure, the SCAQMD staff will work with all affected stakeholders to seek approaches to maximize the penetration of zero-emission technologies as early as possible.

The SCAQMD intends to include community organizations and interested nearby residents in the public process. SCAQMD staff believes that the goals of the facility-based measures and the emission growth management measures will be aggressive in nature since the measures call for identification of actions that go beyond regulation requirements. These actions will help meet the State SIP Strategy "Further Deployment of Clean Technologies" measures. The "Further Deployment" measures when fully implemented will result in over 100 tons/day of NO_x reductions by 2023. The SCAQMD measures are proposed to help meet a large portion of these measures through early actions.

Response to Comment 17-16:

The focus of MOB-11 is on larger diesel-powered lawn and garden equipment such as riding lawnmowers and chipping and grinding equipment. The population of these types of equipment is much smaller and usage is much greater compared to the number of handheld equipment and smaller lawn and garden equipment used primarily at residential locations.

Staff believes that it is more cost-effective to focus on this sector to achieve greater emission reductions, while continuing the existing lawnmower and leaf blower exchange program to encourage consumers to use zero-emission technologies.

Response to Comment 17-17:

Electricity use is estimated based on the California Energy Commission Demand Forecast Mid Demand Baseline Case. This table includes retail sales and other deliveries only measured at the customer level. Losses and consumption served by self-generation are excluded. Certain existing statewide goals are included in the projections if they were adopted/implemented in time to be included in the CEC Demand Forecast. The table was developed based on actual 2013 data. The table includes sales from entities outside of California control areas.

Comment Letter from City of Moreno Valley (Comment Letter 18)



August 17, 2016

**Community Development Department
Planning Division**
14177 Frederick Street
P. O. Box 88005
Moreno Valley CA 92552-0805
Telephone: 951.413-3206
FAX: 951.413-3210

South Coast Air Quality Management Plan
Mr. Michael Krause
Planning and Rules Manager
21865 Copley Drive
Diamond Bar, CA 91765-4182

Re: Notice of Availability of the Draft 2016 Air Quality Management Plan

Dear Mr. Krause,

The City of Moreno Valley appreciates the opportunity to comment on the 2016 Draft Air Quality Management Plan (DAQMP).

A number of plan objectives are provided within the DAQMP. It is understood that a key element of Plan implementation will be private and public funding to help further development and deployment of the advanced technologies and emission reductions highlighted in the document. The DAQMP did not provide specific details on funding sources and incentives to carry out the goals and objectives of the Plan.

18-1

The DAQMP did not include details on sanctions to meet strict air quality strategies. The City asks that local jurisdictions have adequate time to review any sanction proposals if included with the future implementation of the Plan.

18-2

It is understood that there may be future opportunities for local jurisdiction training and review regarding key implementation strategies. The City asks that local agencies are notified and receive ample time to act on any training opportunities when they become available.

18-3

We look forward to receiving a copy of the Final 2016 AQMP once it becomes available. Please include the City on any mailing lists regarding final documents as well as for future notifications of meetings/public hearings associated with the project.

Should you have any questions or concerns, please contact Mark Gross, Senior Planner at (951) 413-3215.

Sincerely,

Mark Gross, AICP
Senior Planner

c: Richard J. Sandzimier, Planning Official

Responses to Comment Letter from City of Moreno Valley
(Comment Letter 18)

Response to Comment 18-1:

As part of the 2016 AQMP, a Financial Incentive Funding Action Plan is currently under development that will provide more detail as to the potential source of funding available. Part of this Financial Incentive Funding Action Plan was presented at the Mobile Source Committee Meeting on October 21 and at the 2016 AQMP Advisory Group Meeting #14 on October 27, 2016. The Revised Draft 2016 AQMP also discusses the level of funding incentives needed to help achieve NOx emission reduction associated with the State SIP Strategy “Further Deployment of Cleaner Technologies” measures.

Response to Comment 18-2:

The comment is not clear as to the “sanctions” to “meet the strategies.” Failure to submit or implement a Plan could result in federal sanctions and consequences pursuant to the Clean Air Act (CAA). The U.S. EPA Administrator would need to make a finding of failure to submit a Plan, disapprove a portion of the Plan, or failure to implement an approved Plan. The state would be given 18 months after the finding or disapproval to correct the deficiency. If still not satisfied, sanctions such as prohibition of highway funds for local projects and increased emissions offset requirements could be triggered. Further, the U.S. EPA could develop and require a Federal Implementation Plan (FIP) that would likely not fully consider local needs.

Strategies in the AQMP are intended to be developed into rules or programs that would be established through a public process such as working group meetings, workshops, reports and public comment periods. Rules and programs typically include enforcement elements to ensure the rules are properly complied with and programs are properly implemented. Again, there will be adequate time for interested parties to participate and comment.

Response to Comment 18-3:

Similar to the development of the rules and programs, the SCAQMD hosts workshops and training classes for new programs and ample information is provided online to educate the public and interested parties. It is suggested the commenter take advantage of the SCAQMD website (www.aqmd.gov) that provides an ongoing rule development schedule, upcoming working group meetings and public workshops, as well as available documents on the interested subjects.

Comment Letter from Electratherm (Comment Letter 19)

DRAFT 2016 AIR QUALITY MANAGEMENT PLAN



2016 AQMP Comment Form

Please enter your contact information, comments and/or upload comment files below. The information collected may be used to provide further information about public workshops and hearings, and other events related to the 2016 AQMP. Responses to comment will be compiled and included in the final Plan package.

*Fields Required to Submit a Comment

Form Information

Date Created 08/17/2016	Time Created 11:13 AM	AQMP Year 2016
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Commentor Contact Information

Commentor's Name * PAUL HUGHES	Organization * ELECTRATHERM	City RENO	State NV	Zip Code 89502
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If not representing a specific organization, please enter "No Affiliation".

Comments (Unlimited Size)

We would like to provide information and a solution for biogas utilization which can meet or exceed emission requirements with an available commercialized technology called the Power+ manufactured out of Reno, Nevada. Hot water is it's fuel and it has ZERO emissions. This is not a black box technology and can be implemented now without delay, trials, or testing. The Power+ generator has been proven with installations around the world with over 60 years of cumulative runtime. The Power+ simply utilizes hot water from a low emissions biogas boiler (already in use, proven, and permitted at wastewater plants in California) to make onsite power. This technology has also been proven in reducing emissions at oil wells. It is a very cost effective solution compared to other options and can be implemented at wastewater plants, landfills, and oil well sites immediately.

19-1

Upload Additional Comment and Supporting Files (30 Mb Maximum per file) (1)

AQMP Comments Files

PLN - AQMP Comments - 8/17/2016 - Comment Type: - Author: PAUL HUGHES - Agency: - N

Note: Supported upload files include all versions of Microsoft Office, jpeg, tiff, PDF, mp3, mp4, and text files.

Commentor Signature *

For More Information Contact: Angela Kim (akim@aqmd.gov) (909) 396-2590

8/17/2016

Information and application of the ElectraTherm Power+ Generator to reduce emissions at wastewater treatment plants and landfills generating biogas

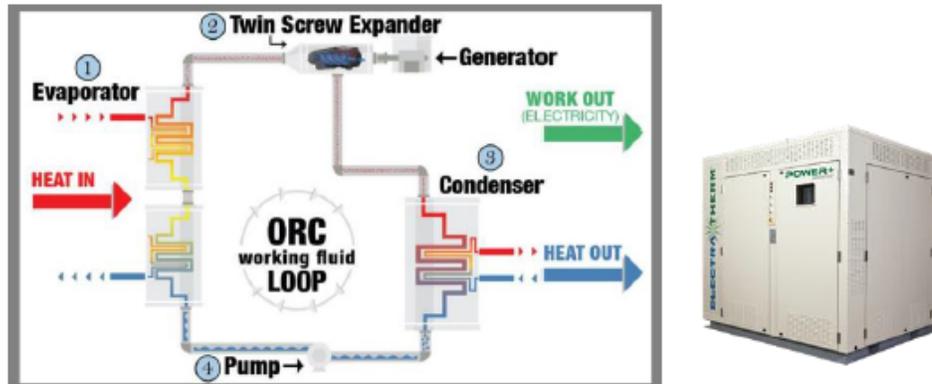
Process: Biogas > Low emission boiler > Power+ Generator

Key Benefits:

1. Make onsite power in an emission free generator. The Power+ itself has no combustion, and zero emissions.
2. Meet or exceed current & proposed AQMD & EPA emissions levels with no need for delays or extensions.
3. Dramatically lower emissions compared to engines. The Power+ system works in tandem with low emission boilers already permitted and in place at most wastewater plants in Southern California.
4. Utilize all the biogas being produced and/or flared. A renewable resource, and of great interest to Utility customers, and neighbors.
5. Dramatically lower capital investment, O&M, and footprint compared to an engine
6. Simplified biogas power generation solution.
7. Eliminate the need for biogas conditioning systems and the often overlooked electrical parasitic loads they require.
8. Eliminate the need for large volumes of onsite biogas storage. A maintenance item, safety concern, and in today's world a security risk.
9. Dramatically reduce the fugitive methane leak points typically associated with biogas conditioning systems and storage. Methane is a potent greenhouse gas, around 25 times more damaging than carbon dioxide.
10. Provides a variable-load solution that can follow the wastewater plants' varying biogas production. No need to recalibrate the Power+. Engines, microturbines, or fuel cells will struggle without adequate volume and stable flow of clean biogas.
11. The Power+ flexibility means the boiler can run continuously and stay hot which substantially increases boiler life and decreases boiler O&M costs and power usage.
12. Reduce natural gas use. Natural gas is typically used in bringing a boiler up to condensing temperature before switching to biogas. Also, natural gas is often blended in biogas when running engines to increase efficiency and stable operation.
13. Proximity to manufacturer for support and service. We are located in USA out of Reno, Nevada. The Power+ Generator has been installed in 14 countries with over 60 years cumulative runtime with a 97% availability. With only 3 major moving parts we pride ourselves on reliability.

ElectraTherm's Power+ Generators generate fuel-free, emission-free electricity from low grade waste heat (170-240°F/77-116°C), utilizing Organic Rankine Cycle (ORC) and proprietary technologies. Hot water fuels ElectraTherm products. ElectraTherm machines are fully packaged with outputs up to 110kWe per module (<7'x11') for distributed power generation.

8/17/2016



No gearbox, combustion, air filters, or exhaust stack. Low temperature (170F-252F) hot water is the fuel.

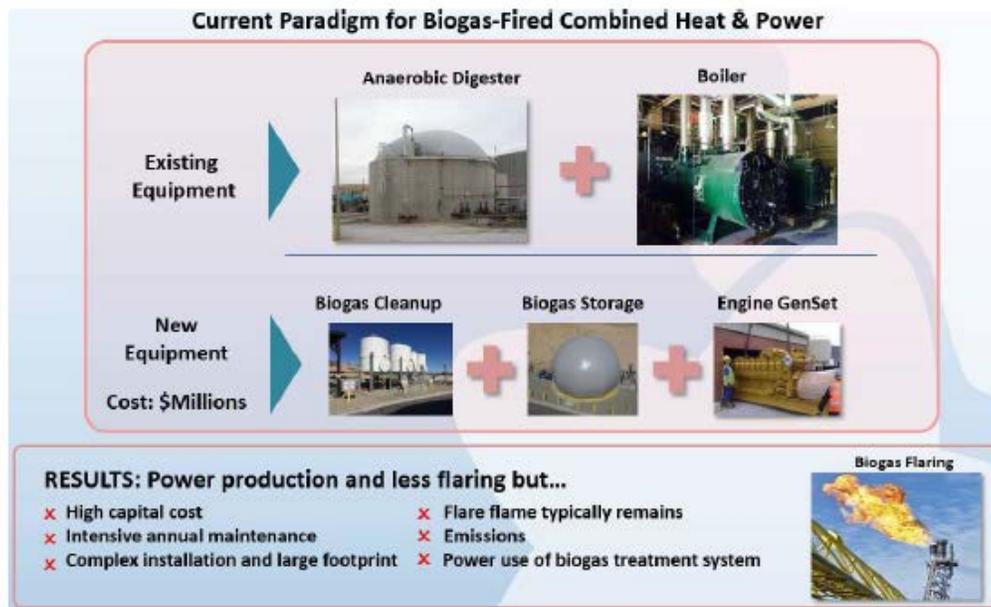
ElectraTherm Power+ Generators use a closed-loop Organic Rankine Cycle (ORC) to create pressure by boiling a working fluid into a gas. The gas expands and turns a twin screw expander, our power block, which drives a generator to produce electricity. It is very similar to the Rankine (steam) cycle, but replaces water with a much lower boiling point working fluid (boiling point of 57F). ElectraTherm combines traditional components with patented technology to create electricity from waste heat.

ElectraTherm has the largest fleet of low temperature ORC installations in the world. To attain this goal, ElectraTherm adapted its core power generating technology to a number of different applications. Current deployments and demonstrations include, flare to power, engine heat recovery from a variety of engine models, waste biomass and biogas, industrial waste heat, geothermal fluids and solar thermal energy.

Hot water fuels ElectraTherm products. Boilers at anaerobic wastewater treatment plants create hot water from the biogas to heat the digesters. The Power+ twin screw expander allows the generator to ramp up and down as well as start and stop based on temperature and flow always generating the maximum power. Using a turbine technology does not allow for these fluctuations and is unforgiving to changing biogas volumes which wastewater plants can experience.

Due to the fact that emission reduction, beneficial methane use, and power generation are major issues for plants in the US, ElectraTherm sees the potential for a new paradigm and an easier solution to the age old problem of what to do with produced biogas. The slides below show the current methodology for using methane to create power with the Power+ being an alternative with a much smaller, simpler, less capital and maintenance intensive solution.

8/17/2016



OR....

Lower emission power generation solution. And can eliminate flaring!



THIS IS SMART POWER[®]

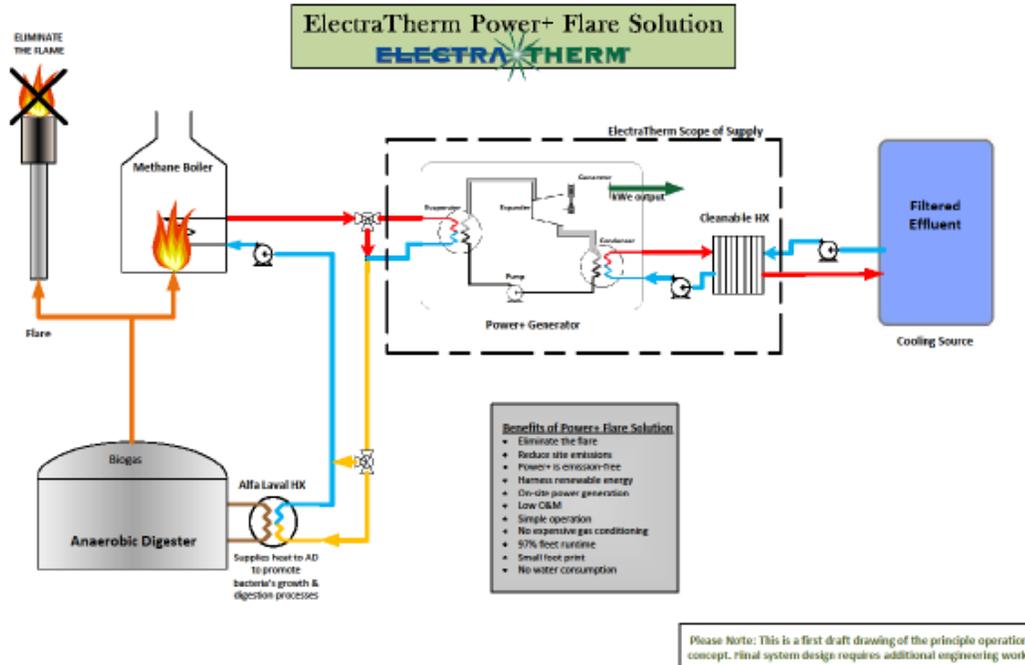
8/17/2016

Our application is at wastewater plants with Anaerobic digestion typically start at plants treating >3 MGD. Specifically plants that are flaring off greater than 40,000 ft³/day will be able to utilize a Power+ generator. Our largest Power+ 6500 (110kW) generator will max out at 243,000 ft³/day of biogas, larger biogas volumes will require multiple machines effectively multiplying power output as well. Many California wastewater plants already have existing dual fuel low emission boilers capable of burning all or majority of the biogas currently being flared.

Another benefit of utilizing existing low emission boiler technology is that these boilers are already proven, operators are familiar with them, already approved with AQMD, readily available, and relatively low cost. Also, they do not require the extensive biogas conditioning which is required for engines, microturbines, and fuel cells. Boilers can typically handle much higher levels of H₂S (<1000ppm H₂S) and are very efficient at 80% or greater. Many wastewater plants only utilize the boilers to heat the digesters on demand, and when these boilers come online they usually require natural gas usage to ramp the boiler up to condensing temperature before switching over to biogas. Also, operators understand that keeping a boiler hot will extend boiler life, lower O&M, and help keep biogas feed lines from plugging.

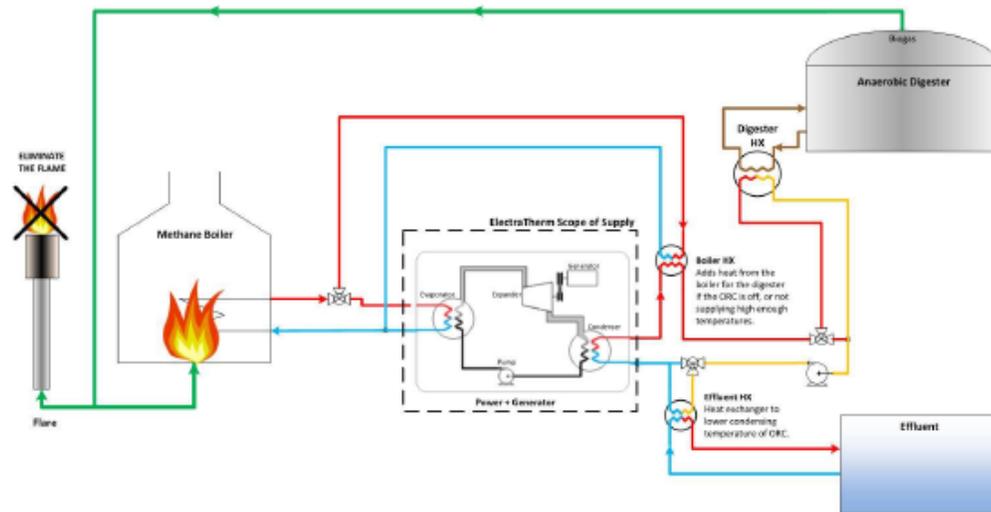
Installation options diagrams:

Eliminate flaring and generate power



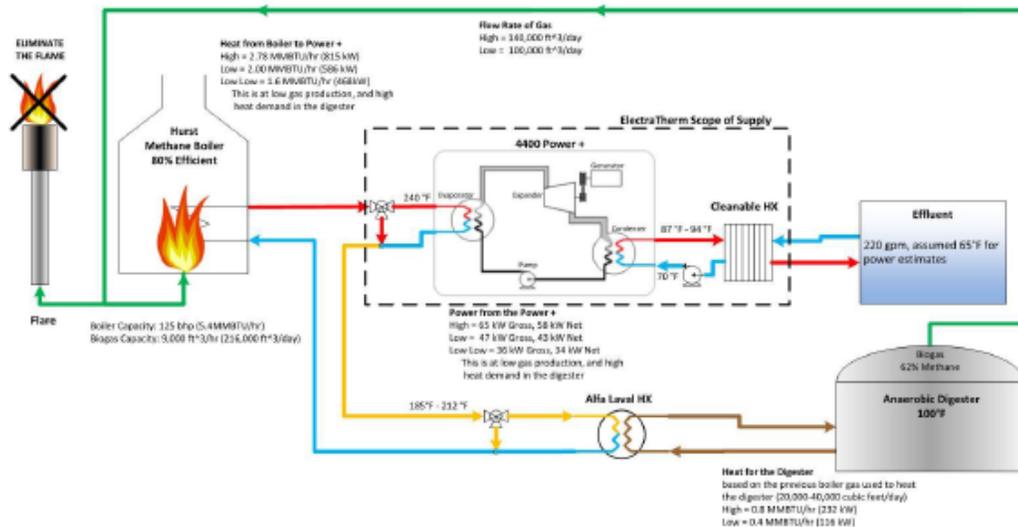
8/17/2016

Utilize biogas to make Power and provide heat to be used in digester (CHP)



Costs of implementing the Power+:

Example: Plant is flaring 140,000 ft³/day of 62% methane



8/17/2016

On an installed basis without any increase in cost of power and including all Power+ O&M costs this facility would have a 4 year payback. The estimated total capital expenditure including estimated installation would be \$327,617.00. They would eliminate all flaring and lower their emissions by utilizing existing Hurst low emission boiler(s) and make >\$0.05 power including all O&M costs for Power+ generator. The internal rate of return for the life of equipment would be >23%.

ElectraTherm Power+ Generator Pricing:

Power+ 4200 (35 kW) \$173,587.00

Power+ 4400 (65 kW) \$200,724.00

Power+ 6500 (110 kW) \$297,200.00

*Freight & start up are not included

**Cleanable heat exchanger with pump skid not included (added if plant effluent has free chlorine or high solids).

Proven flare emission reduction and power generation

In the summer of 2015 ElectraTherm partnered with Hess Corporation to commission a Power+ Generator at a North Dakota oil well. The Power+ captured the natural gas that would otherwise be flared to generate electricity and reduce or eliminate onsite flaring. In collaboration with distributor Gulf Coast Green Energy, the project successfully demonstrated an effective means of flare reduction, and changes the landscape for industries where flaring or very capital intensive and maintenance intensive power generation were previously believed to be the only options. Funding for the project was provided by the Department of Energy's Research Partnership to Secure Energy for America (REPSEA) program and the Houston Advanced Research Center's (HARC) Environmentally Friendly Drilling Program. A short video on the project is <https://youtu.be/4UJEZ1e-PRA> or

<https://electratherm.com/flare-elimination-system-video/>.

Currently North Dakota state regulations require that oil and gas companies significantly reduce the amount of natural gas that is burned in flares over the next several years or face steep penalties and potential curtailment of oil production at offending wells. ElectraTherm's Power+ captured the waste heat and provided beneficial and clean methane utilization without capital intensive gas clean-up, storage, engine or micro turbine capital costs, and the heavy maintenance associated.

At the oil well, natural gas that would otherwise be flared was instead used to fuel an industrial boiler. The boiler heated water to run the Power+ Generator, and produces clean energy that is used onsite displacing the retail cost of power.

This demonstration showed that we could capture a wasted fuel source that was being flared to the atmosphere, and put that fuel to use in remote oil fields. The emissions profile of the site is greatly improved, the power is consumed on site and the equipment is easy to install and maintain. Beyond oil

8/17/2016

and gas, ElectraTherm sees potential for other applications where flaring is a major concern, such as at landfills and waste water treatment plants.

Texas A&M was recruited by HARC to provide emissions reductions results of a raw flare as compared to the boiler emissions onsite. According to the report, "It is important to note that the emissions from the Power+ Generator system's boiler are lower (comparatively less harmful to the environment) and would provide the added utility of power generated for use from the raw gas or fuel gas which would otherwise be wasted." The report includes the percentage of reduced emissions as a result of the Power+ Generator, with an 89% reduction in CO, 48% reduction in NO_x and 93% reduction in VOCs.

Percent Reduction in Emissions

CO ↓	89%
NO _x ↓	48%
VOCs ↓	93%

The report concludes "The real benefit is the power generated by raw gas or fuel gas which would otherwise be wasted by open flaring. Furthermore, this new technology would meet the goals of the US EPA and North Dakota."

Papers, Publications, and Proceedings

Feb 23, 2016

Midstream Magazine published a by-line from John Fox on how waste heat from gas compression can provide site power and increase engine efficiency.

<https://electratherm-electratherm.netdnssl.com/wpcontent/uploads/2016/02/MidStreamMagFeb2016.pdf>

Nov 25, 2015

The Bakken Magazine wrote a story on the Texas A&M report that showed ElectraTherm's flare elimination technology can significantly reduce well site emissions.

<http://thebakken.com/articles/1371/report-gas-capture-technology-significantly-reduces-emissions>

Sept 16, 2015

A white paper on the Organic Rankine Cycle (ORC) and benefits for reciprocating engines was published in the September issue of Power Engineer Magazine.

https://electratherm-electratherm.netdna-ssl.com/wp-content/uploads/2015/09/ejournal_Vol19Issue3_Sep2015_ET.pdf

May 28, 2015

ElectraTherm's partnership with Air Burners to commission the PGFireBox was included in Biomass Magazine.

<http://biomassmagazine.com/articles/11991/electratherm-commissions-whole-log-woody-biomass-power-plant>

8/17/2016

April 16, 2015

ElectraTherm was featured in Compressor Tech 2 Magazine's April 2015 publication.

https://electratherm-electratherm.netdna-ssl.com/wp-content/uploads/2015/04/Compressor_Article_2015.pdf

April 14, 2015

Diesel and Gas Turbine Worldwide covered the 2015 Energy Company of the Year award given to ElectraTherm by Nevada's Center for Entrepreneurship and Technology (NCET).

<http://www.diesलगasturbine.com/April-2015/ElectraTherm-Wins-Energy-Company-of-the-Year/#.VyqBaZrmpCp>

May, 2016

Pending publication of ~70 page report detailing the efficiency gains witnessed by Southern Research on ElectraTherm's second Dept. of Defense contract. ElectraTherm replaced the radiator on a 1.1MW Cummins diesel fired reciprocating engine and reduced fuel consumption up to 14%. The increase was due to capturing the jacket water and exhaust energy and converting that to addition electricity production and the removal of the cooling load parasitics on the engine. ElectraTherm has created the world's first radiator with a payback.

Reference videos:

ElectraTherm Power+ Intro: <https://youtu.be/jolldSWMSHE>

Media highlights /Presidents visit: <https://electratherm.com/news-room/in-the-news/>

For more information please contact:

Paul Hughes – North American Business Development

M. 559.298.5558

W. 775.398.4680 ext.151

phughes@electratherm.com | www.electratherm.com

Responses to Comment Letter from Electratherm
(Comment Letter 19)

Response to Comment 19-1:

Staff appreciates the information on this technology and included it as an example of emission reductions that can be utilized as an alternative to flaring (CMB-03) and for reducing emissions from biogas usage at landfills and waste water treatment facilities (CMB-01).

Comment Letter from Gloria Sefton (Comment Letter 20)

AQMD Comment Form

Page 1 of 2

DRAFT 2016 AIR QUALITY MANAGEMENT PLAN



2016 AQMP Comment Form

Please enter your contact information, comments and/or upload comment files below. The information collected may be used to provide further information about public workshops and hearings, and other events related to the 2016 AQMP. Responses to comment will be compiled and included in the final Plan package.

*Fields Required to Submit a Comment

Form Information				
Date Created	Time Created	AQMP Year		
08/17/2016	10:45 AM	2016		
Commentor Contact Information				
Commentor's Name *	Organization *	City	State	Zip Code
GLORIA SEFTON	NO AFFILIATION	TRABUC	CA	92678
	If not representing a specific organization, please enter "No Affiliation".	O CANYO N		

Comments (Unlimited Size)

I delivered the following content in testimony to the AQMD Board at its hearing on July 8, 2016. Please include this in the administrative record for this matter.

Mr. Chairman and members of the Board, good morning. My name is Gloria Sefton. I'm an attorney in the medical device industry (a highly regulated industry, needless to say) and a resident of Trabuco Canyon in Orange County. I'm also a lifetime member of the Sierra Club and a board member of Friends of Harbors, Beaches and Parks in Orange County. I am speaking today as an individual.

I took this morning off from work because I am disturbed about the direction the AQMD appears to be going.

I was born in LA and grew up in the San Fernando Valley in the 60s and 70s. I remember well the brown, smoggy days - days when you couldn't play outside or see the Santa Susana Mountains that were only a few miles away.

Through regulation, the quality of our air has improved year over year since.

I'm very concerned that this board would consider taking us back to those days. An incentive-based plan puts business interests above public health and safety and is wrong-headed and dangerous. Allowing the Department of Water of Power to run its antique diesel generators this summer is one example of these relaxed standards that will hurt our citizens.

In LA County alone, population has grown by more than 3.5 million since the 60s when I grew up, making it even more critical that regulation of emissions, not incentive-based favors to business, be in place to ensure that our air is clean and safe to breathe.

When the Department of Transportation imposed fuel economy standards on cars and light trucks, the auto industry complained bitterly that it couldn't be done and that they'd be driven out of business. But what happened? They rose to the occasion, in healthy competition with one another, inventing new technologies to reduce fuel consumption and emissions before their deadlines. The result? Cleaner air.

So please, continue to do the job that AQMD has done so well. Don't let political ideology create a false choice between clean air and a favorable business climate. Clean air is important not only for our health and quality of life, but for our region's tourism and desirability.

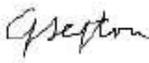
Technology-forcing regulations can create clean air and healthy businesses too.

[Upload Additional Comment and Supporting Files \(30 Mb Maximum per file\)](#)

AQMP Comments Files

Note: Supported upload files include all versions of Microsoft Office, jpeg, tiff, PDF, mp3, mp4, and text files.

Commentor Signature *



For More Information Contact: Angela Kim (akim@aqmd.gov) (909) 396-2590

20-1

Responses to Comment Letter from Gloria Sefton
(Comment Letter 20)

Response to Comment 20-1:

The 2016 AQMP includes aggressive new regulations as well as development of incentive funding and supporting infrastructure for early deployment of advanced control technologies. Technology-forcing regulations can drive development and commercialization of clean technologies, with future year requirements for new or existing equipment. Incentives can then accelerate deployment and enhance public acceptability of new technologies. Please see Response to Comment 11-1 regarding the intent of the incentive measures and their important role in meeting fast approaching ozone standard deadlines. In addition, since the release of the Draft Plan, two of the three incentive-only measures have been modified to include future rulemaking.

Comment Letter from American Chemistry Council (Comment Letter 21)



BY ELECTRONIC MAIL

August 18, 2016

Philip Fine, Ph.D.
Deputy Executive Officer
Planning, Rule Development & Area Sources
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765-4182

Re: Draft 2016 Air Quality Management Plan

Dr. Fine:

The Hydrocarbon Solvents Panel (HSP) and Solvents Industry Group (SIG) of the American Chemistry Council (ACC) appreciate the opportunity to comment on the District's draft air quality management plan. ACC is concerned about the proposal for further reductions of two tons per day of volatile organic compound (VOC) emissions from coatings, solvents, adhesives, and sealants by 2031 (CTS-01). The proposal appears to be a carryover from the 2012 Air Quality Management Plan (AQMP), which the District indicates was not implemented as a result of "technical and policy challenges."¹ The 2016 draft AQMP identifies a number of stationary source rules that could be affected by CTS-01 - in particular Rule 1168 pertaining to adhesive and sealant applications.

Ozone levels in the South Coast Air Basin have declined significantly over the past few decades, but have begun to level off in recent years.² AQMD's modeling results suggest that this is the result of the complex interaction between VOC and nitrogen oxide (NOx) concentrations in the troposphere and that further reductions in ozone concentrations require reductions in NOx. The modeling also suggests that further progress on ozone levels is largely independent of additional reductions in VOCs. Consequently, the proposed 2016 AQMP focuses largely on measures to reduce NOx levels. Yet the data presented in the draft 2016 Plan indicate no overall change in NOx emissions over the last 4 years, while VOC emissions have continued to decline – as a result of continued emissions reductions from stationary sources.³ It is curious therefore that the draft plan continues to propose reductions in VOC emissions from adhesive and sealant and other applications.

The description of CTS-01 in Appendix IV-A of the draft AQMP notes that the District proposes to adopt a "NOx-heavy strategy accompanied by more modest VOC reductions" to help avoid temporary increases in ozone concentrations in the western side of the Basin. The draft Plan further explains that the VOC control program is intended to prioritize controls that maximize the co-benefits of NOx, greenhouse gases (GHG), and air toxic reductions, followed by controls that could create a "win-win" for

21-1

¹ SCAQMD. Draft 2016 Air Quality Management Plan (2016 AQMP), at 1-11 (June 2016).

² SCAQMD. 2016 AQMP White Paper - VOC Controls (October 2015).

³ 2016 AQMP. Appendix III – Base and Future Year Emission Inventory, at III-2-2 (June 2016).



Philip Fine, Ph.D.
August 18, 2016
Page 2

the affected entities. Unlike most of the other proposed measures, however, CTS-01 does not result in co-benefits for NOx, GHG, or air toxic reduction. Furthermore, in the absence of details on precisely how CTS-01 would be implemented,⁴ it is impossible to determine whether it would create a “win-win” for the affected entities. Finally, while the rationale for proposing CTS-01 appears to be the avoidance of temporary increases in the western side of the Basin, the District projects a reduction of 120 tons per day of VOCs by 2023⁵ - well in excess of the 30 to 40 tons/day the District suggests it needs to avoid increases in ozone exposure.⁶

21-1
Cont

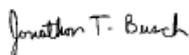
ACC also wishes to express its concern with the cost estimate of \$8,000 to \$12,000 per ton of VOC reduction for CTS-01.⁷ Without additional details on how the VOC reductions from stationary sources are to be achieved, it is impossible to determine whether the estimate is accurate. While the value represents the District’s estimate of the cost for VOC reduction, moreover, it does not reflect the “cost effectiveness” of the measure in achieving the ultimate goal of reduced ozone levels. In order to determine the true cost effectiveness the District would have to consider, not only the cost to reduce VOC emissions, but also the resulting impact of this reduction on ozone levels. As described in the White Paper on VOC Controls, and as summarized above, the District’s modeling results confirm that VOC reductions in the absence of a decrease in NOx emissions will have negligible impact on ozone. When measured against the impact on ozone levels, therefore, the true cost of implementing CTS-01 will be considerably higher.

21-2

Based on SCAQMD’s own modeling results, significant progress towards achieving the federal ozone standard can only be achieved by reducing NOx emissions. ACC strongly encourages the District to defer any decision about further reduction in VOC emissions from stationary sources until such reductions are a cost-efficient means to achieve the desired air quality objectives in the South Coast Basin.

If you have any questions, please contact us (Jon_Busch@americanchemistry.com, 202 249-6725; Steve_Risotto@americanchemistry.com, 202 249-6727).

Sincerely,



Jonathon T. Busch
Director



Stephen P. Risotto
Senior Director

⁴ For example – which exemptions would be tightened; which product categories would be subject to lowered limits.

⁵ 2016 AQMP, Appendix III, at III-2-66. The District’s 2023 emission inventory projects 379 tons of VOC/day in 2023, compared to baseline emission of 502 tons/day of VOCs.

⁶ 2016 AQMP White Paper - VOC Controls, at 10.

⁷ 2016 AQMP, at 6-20 (Table 6-5).



Responses to Comment Letter from American Chemistry Council (ACC)
(Comment Letter 21)

Response to Comment 21-1:

Please see Response to Comment 15-2 with regard to the need for CTS-01 measure in the 2016 AQMP.

Response to Comment 21-2:

Please see Responses to Comments 15-2 with regard to VOC reductions not associated with NO_x reductions, 15-5 with regard to cost-effectiveness of CTS-01, and 15-7 with regard to VOC emission reductions from stationary sources, respectively.

Comment Letter from Michael Salman (Comment Letter 22)

2533 4th Ave
Los Angeles, CA 90018
salman@history.ucla.edu
323-402-0840
August 18, 2016

Dr. Philip Fine,
Deputy Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Subject: Comments on CMB-01 and CMB-03, especially as concerns oil and gas production flaring.

Dear Dr. Fine

Thank you for allowing me to speak at the May 4, 2016 meeting of the AQMP Advisory Group for being responsive on the subject of non-refinery flaring. I am writing to follow up on the exchange I had with you and Executive Director Nastri at the May 4 meeting, which focused on the following areas:

- 1) More consistent emphasis on beneficial use as the preferred method of control over flaring.
- 2) Disaggregating the category of “non-refinery flares” because the gas composition and potential for beneficial use to avoid flaring varies considerably between different sources. Landfills, solid waste plants, and oil & gas production sites are quite different from each other. They pose different challenges and opportunities.
- 3) I requested that SCAQMD should take a firmer and more direct regulatory stand against routine flaring at oil and gas well sites – that is, to prohibit routine flaring at well sites - for two reasons:
 - a. The Governor’s office has, through CAL EPA Secretary Rodriguez, committed to the World Bank’s Zero Routine Flaring by 2030 Initiative that seeks to prohibit the introduction of any more new flares and promises to end all existing routine flaring at well sites by 2030 at the latest.
 - b. Oil and gas well sites have numerous alternatives to flaring to handle stranded gas, tail gas, and any other gas that cannot be sold. Most of these solutions are already tested. They are all lower in Criteria Pollutant emissions than flaring, and they would all either make beneficial use of the gas or store the gas for later use (i.e., re-injection). All are far superior to flaring in terms of Greenhouse gas emissions. Beneficial use alternatives would earn the operators profits, whereas flaring produces no revenue.
- 4) Last, I asked SCAQMD to please take an active role in lobbying for incentives to promote early adoption of beneficial use alternatives to flaring.

22-1

I will discuss these four themes in order.

More consistent emphasis on beneficial use: Thank You.

I am pleased to see that the June 2016 Appendix IV-A on “SCAQMD’S STATIONARY AND MOBILE SOURCE CONTROL MEASURES” uses more consistent language to emphasize a preference for beneficial use over flaring.

22-1
Con't

Disaggregating the category of “non-refinery flares”: Need to Do More

It seems a little bit of new language has been inserted into CMB-01 about the particular problems of landfills and municipal solid waste facilities.

Indeed, there are some challenges for those facilities to make beneficial use of their bio-gas, and so it is an appropriate step to introduce the idea of forming a “working group” to that “will strive to overcome obstacles and include interested parties such as The Gas Company, Sanitation District, Landfills, and CPUC.” (see p. IV-A-47)

But it also seems to me that the language concerning oil and gas production sites remains unchanged and continues to confuse and conflate the gas from production well sites with the bio-gas from landfills and waste treatment plants. Not only is the gas composition and quality radically dissimilar at these different sources, so too is the range of beneficial use alternatives, plus long term storage through re-injection is a way to store gas at production well sites.

This point merits explication.

First, the gas quality differs radically at bio-gas generating sites as compared to oil and gas production sites.

22-2

Landfills and sewage plants tend to produce lower Btu gas with many impurities and a lack of consistency since feedstock for producing the gas fluctuates.

In contrast, the Btu rating of gas at production well sites is much higher, often higher than pipeline quality gas. The composition of the gas is far more consistent overall especially on a site by site basis. And in the LA Basin most of the production well sites produce low sulfur “sweet” gas that needs only modest sulfur removal by means like iron sponge adsorbers or other filtering (relatively simple solutions already used for decades).

SCAQMD has in its file gas composition reports from the Wilmington Controlled Drill Site operated by Warren E & P and a gas composition report from the Murphy Drill Site operated by FMOG. I have copies of both of those reports and I will attach copies to this submission.

I suspect that SCAQMD probably also has gas composition reports from other oil production sites, including the Baldwin Hills and Santa Fe Springs because flares have been permitted for both facilities.

The Wilmington Site has been flaring the majority of its produced gas because up until now it has not had processing equipment and an arrangement to sell any gas to SoCalGas. The Btu rating of gas at Wilmington has clocked in between 1019 and 1032, which is in the range of pipeline gas. It is low in sulfur and other impurities. However, now that Wilmington is supposed to start selling gas to SoCalGas sometime soon, the gas that Wilmington will send to its flares will have a different composition likely to include heavier hydrocarbons and a higher Btu, but not more impurities.

Since 1986, the Murphy site has sold almost all of its gas through SoCalGas's distribution system (along with gas from its sibling Jefferson and 4th Ave sites, though 4th Ave has been idle since 2010). Before 1986 all gas from all three sites was reinjected at Murphy. The Murphy site has never had a flare. In 2011, however, SoCalGas applied to CPUC for a change to SoCalGas Rule 30 that would end historical exemptions from non-H₂S gas composition requirements; this rule turns on the Wobbe index and essentially prohibits gas with a Btu higher than 1150 from being input into the distribution system. In 2014 the CPUC approved the rule change, to be implemented by the end of 2016. Largely because of the proposal to change Rule 30 that was submitted to CPUC in 2011, the operator of Murphy applied to SCAQMD in 2012 for a permit to install a flare for the first time ever. In that application the operator submitted a study of the tail gas it was already burning in microturbines as indicative of the gas that it would be burning in the flare it desired to install: 1463 Btu, and low in impurities.

Second, there are a wider range of alternative solutions for oil & gas production sites as compared to bio-gas sites.

Only oil and gas production sites would be suitable for gas injection wells to store gas in the hydrocarbon geology from which it was pumped up. Gas injection wells have been used for many decades. In addition to storing the gas for later use, re-injection is a form of secondary recovery for oil, which increases oil production. The Murphy Site has a permitted and operational gas injection well that was given an extensive workover in 2011-12. Well sites that do not currently have a gas injection well could add one. Reinjection has costs and produces no direct revenue, much like the reinjection of produced water. But it does have some value in secondary recovery of oil and a clean solution to the problems of produced water and gas that cannot be sold is simply a necessity.

Oil and gas production sites are far more suitable for Gas-to-Liquids (GTL) platforms that convert gas into liquid fuel that can be mixed with crude and piped to refineries. The GTL process is 90 years old and proven. In recent decades several companies have focused on reducing the scale of GTL platforms to make them viable as solutions to avoid flaring at isolated well sites. Several manufacturers now make mini-GTL platforms that would be suitable for well sites in the LA Basin. For example, Greyrock Energy based in Sacramento makes platforms that can process 250 mcf/day into 20 barrels of liquid fuel, and platforms that turn 500 mcf/day into 40 barrels of liquid fuel. This GTL platform steam reforms natural gas into syn-gas, a process that burns a small quantity of gas to create the needed heat; burning a few mcf/day will produce far less in emissions than flaring 500 mcf/day.

22-2
Cont

Microturbine and fuel cell solutions are also easier to implement at production well sites than at bio-gas sites because the gas quality is more consistent and there is no need to raise the Btu level of the gas. CARB certified microturbines from Capstone outperform CEB flares in emissions, and fuel cells can be near zero emission.

But CMB-03 continues to treat all sources of waste gas as if they are the same.

When CMB-03 discusses the potential use of waste gas as transportation fuel, it assumes the Btu level will need to be raised: "Utilization of waste gas as a transportation fuel can be both economically and environmentally beneficial. The gas would be required to undergo treatment to remove any impurities, such as sulfur and siloxanes, and to raise the heating value to specification." (IV-A-69) The assumption that the Btu level would need to be raised clearly comes from focusing on landfills and sewage plant sources. It is not a problem with gas from production well sites.

CMB-03 also emphasizes the need to clean gas before it is used in fuel cells. Indeed, fuel cells are sensitive to impurities, but CMB-03 still does not distinguish between very impure and inconsistent gas from bio-gas sources as opposed to the already much cleaner and much more consistent gas from production wells.

Third, bio-gas sources and production wells are very different operationally, and they have different social, political, and legal contexts.

Bio-gas production is biologically unavoidable. Landfills and solid waste treatment facilities are typically public operations run for public service out of necessity, not for profit. In contrast, gas from oil production is a function of historically developing technologies and choices (both economic and political). Oil production facilitates social uses and social goods, but it is a privately run and historically profitable industry.

More crucially at this moment, the sensible change to SoCalGas Rule 30 stands to prompt an increase in flaring at production well sites because the rule change makes a substantial portion of locally produced gas unmarketable through the SoCalGas distribution system. At the Murphy Site, the operator wants to flare off 400MCF/day of gas, which is about 40% of the total peak daily production from Murphy and Jefferson combined.

SoCalGas and the CPUC passed the Rule 30 change to protect end users and the environment. They never thought of the unintended consequence that this would lead to a big increase in flaring. CPUC staff were shocked when I told them that flaring was the proposed solution for the newly off-spec gas at Murphy.

Oil and gas production sites will also be facing further gas composition restrictions designed to reduce corrosive agents in the gas stream that degrade pipelines and cause fugitive leaks. The future will make more and more of the associated gas produced from oil wells unmarketable. Without action, oil companies will want to flare it off because flaring is the solution most convenient and most familiar to them.

22-2
Con't

Oil and Gas production sites have entered a critical phase in which flaring will increase and indeed begin for the first time at sites like Murphy, unless substantial pressures and/or incentives persuade companies to use better technologies.

22-2
Con't

A firmer and more direct regulatory stand against routine flaring at oil and gas well sites is needed and warranted.

I urge you to consider a direct regulatory prohibition of routine flaring at oil and gas production sites. A similar prohibition has been highly successful at refineries.

Refineries have a much more substantial and legitimate need for flares than production sites. Refinery flares have emergency and safety functions; most well sites in the Basin have not had flares at all. Keeping refineries online fulfills a social need; a refinery going off line raises gasoline prices noticeably. The same cannot be said for individual well sites, plus they can achieve any needed redundancy by using a gas injection well to back up the main beneficial use technology for handling gas.

There is simply no necessity for flares at well sites.

Since the early 2000's the California Energy Commission and CARB have talked about creating incentives to substitute microturbines for flares and to use recovered heat from the microturbines to replace boilers. (see attached CEC and CARB studies) But it has not happened. Incentives to reduce flaring at well sites have not moved forward. In fact, available incentives are being reduced.

The Governor's office has committed to eliminating routine flaring at well sites. The June 2016 Appendix on Control Measures now mentions the World Bank initiative, but not the fact that the Governor's office has signed onto the initiative. See the attached copy of Matt Rodriguez's commitment letter to the World Bank.

22-3

Last but not least, the beneficial use alternatives to flaring are profitable. Microturbines and GTL are proven technologies and proven to be profitable. Fuel Cells await their first demonstration use to handle stranded or otherwise unmarketable gas at well sites, but they are proven in far worse environments with poor quality bio-gas.

The oil industry is characterized by boom-bust cycles that tend to devastate the small and medium sized well operators that predominate in the LA Basin region. It has been in a bust phase for the past two years. Beneficial use of waste gas offers the industry a new business model with financial ballast. Well sites use a lot of electricity. The annual bill at Murphy is more than \$1 million. Rather than flaring off-spec gas because that is the easiest solution to a problem (as long as it is allowed), oil companies could instead choose a profitable solution. Microturbines would eliminate a well sites electric bill. Fuel cells produce electricity much more efficiently from the same quantity of gas and thus would return more revenue than microturbines. Similarly, the revenue from a GTL system is easy to calculate: a 500 mcf system producing 40 barrels a day would generate fuel worth about \$730,000 per year at \$50/barrel oil prices.

5

While flares have zero return on capital because they produce nothing except pollutants and greenhouse gases, all of the beneficial use solutions discussed here would easily reach the break even point within about seven years with no new or special incentive funding.

I understand that the SCAQMD Board is trying to emphasize use of incentives rather than new regulations to meet attainment goals. One does not have to fight against that vision to see that there are some instances where a regulatory prohibition would not only be most cost-effective for meeting air quality goals, but also would be the surest way to produce effective lobbying to get new incentives to offset costs for businesses. Furthermore, in the case of beneficial use alternatives to well site flaring, the beneficial alternatives are economical for the companies, but they need a push to move forward.

22-3

Please take an active role in lobbying for incentives to promote early adoption of beneficial use alternatives to flaring.

The SCAQMD Board's preference to use incentives should increase the importance of lobbying for incentives.

As I mentioned on May 4, the CPUC is in the process of reducing its SGIP rebates for microturbines and fuel cells that use natural gas. The SGIP program makes no distinction between pipeline quality gas and off-spec gas that would be flared. Gas that cannot be sold should be classified (with proper restrictions) as a form of waste gas that is eligible for a higher level of incentives and other credits.

22-4

If regulations prohibiting flaring are not put in place AND if incentives are not provided to push companies toward beneficial use, the flared gas will increase in volume. Flared gas is a pure waste and a pure source of pollutants and greenhouse gases. If used beneficially in microturbines, fuel cells, and/or GTL, there would be lower emissions than would be achieved from the use of CEB flares, and there would be carbon savings from other fuels that would be displaced.

Everyone loses with flaring. Beneficial use alternatives are win-win.

Yours

Michael Salman

Attachment A to Comment Letter 22:



Edmund G. Brown Jr.
Governor
Matthew Rodriguez
Secretary for Environmental Protection

December 28, 2015

Ms. Anita Marangoly George
Senior Director, Energy and Extractives Global Practice
The World Bank Group
1818 H Street, NW
Washington, DC 20433

Re: Invitation for the State of California to join the "Zero Routine Flaring by 2030" Initiative

Dear Ms. George,

Congratulations on the success of the "Zero Routine Flaring by 2030" Initiative in Paris. On behalf of the State of California, I am pleased to submit this letter as confirmation of California's endorsement of the initiative. We look forward to working with the World Bank to commit to eliminating existing legacy routine flaring no later than by 2030, and to help ensure that new oil fields are developed with plans that include a gas utilization solution without routine flaring or venting.

My agency will be the focal point for further coordination in support of this initiative.

Sincerely,

Matthew Rodriguez
Secretary for Environmental Protection

Attachment

Cc: Mr. Ken Alex
Senior Advisor
California Governor's Office of Edmund G. Brown Jr.

Ms. Aimee Barnes
Deputy Secretary for Border and Intergovernmental Affairs
California Environmental Protection Agency

Richard Corey
Executive Officer
California Air Resource Board



ANITA MARANGOLY GEORGE
Senior Director
Energy and Extractives Global Practice

December 2, 2015

Mr. Matthew Rodriguez
California Secretary for Environmental Protection
1001 I Street, P.O. Box 2815
Sacramento, CA

Dear Mr. Rodriguez,

*Initiative to Reduce Global Gas Flaring:
"Zero Routine Flaring by 2030"*

Early this year, United Nations Secretary-General Ban Ki-moon and World Bank President Jim Kim launched a global initiative to end the oil and gas industry practice of wastefully and routinely flaring gas at oil production sites around the world. The "Zero Routine Flaring by 2030" Initiative (attached) aims to eliminate existing "legacy" routine flaring no later than by 2030, and to help ensure that new oil fields are developed with plans that include a gas utilization solution without routine flaring or venting.

We are requesting the State of California join 42 other governments, oil companies, and development institutions (attached with Initiative text) who have endorsed this Initiative. Our ambition is to garner the broadest coalition of leading oil-producing countries and oil companies, thereby establishing its principles as a global industry standard. While the United States government has yet to endorse the Initiative, we believe California could lead the way to a subsequent national endorsement, given the State's climate change mitigation goal of reducing greenhouse gas emissions by 40 percent below 1990 levels by 2030 and further eliminating methane and black carbon from the oil and gas sector.

The "Zero Routine Flaring by 2030" Initiative addresses a major climate change and resource management issue. Flaring at oil production sites around the world causes about 350 million tons of CO₂ emissions every year, and there are also negative impacts from black carbon emissions and un-combusted methane. Furthermore, gas flaring is a waste of energy resources that the world can ill afford. If the gas that is flared globally every year were used for power generation, it could provide about 750 billion kWh of electricity, or more than the African continent's current annual electricity consumption.



Mr. Matthew Rodriguez

-2-

December 2, 2015

We plan to bring a powerful message on climate action through gas flaring reduction to the COP21 and will announce and recognize recent endorsers of the Initiative at an event there on December 7.

Although the Initiative is not a legally binding document, oil companies have already made it clear that it will have real impact on their upstream business going forward. The many leading international oil companies that already have a no-flaring policy for new field developments consider the Initiative a positive contribution because it will level the playing field: other companies would adopt the same practice and governments would require it.

We would like to confirm the Initiative focuses solely on routine flaring. Thus, non-routine flaring such as during startup, malfunction or maintenance, as well as safety flaring, is not within its scope. Furthermore, routine flaring, as applicable to this Initiative, excludes combustion of hazardous or polluting emissions such as volatile organic compounds and hydrogen sulfide. Nevertheless, these emissions should be minimized.

Please let us know if you have questions or would like additional information about the Initiative, by email, teleconferencing or visit by our experts.

We remain hopeful that California will endorse this important Initiative and look forward to hearing from you soon.

Sincerely,



Anita Marangoly George
Senior Director
Energy and Extractives Global Practice

Attachment: "Zero Routine Flaring by 2030" Initiative with list of current endorsers

Website: www.worldbank.org/zeroroutineflaring

Contact: Francisco J. Sucre

World Bank

fsucre@worldbank.org

202-473-5479

Initiative to Reduce Global Gas Flaring: “Zero Routine Flaring by 2030”

During oil production, associated gas is produced from the reservoir together with the oil. Much of this gas is utilized or conserved because governments and oil companies have made substantial investments to capture it; nevertheless, some of it is flared because of technical, regulatory, or economic constraints. As a result, thousands of gas flares at oil production sites around the globe burn approximately 140 billion cubic meters of natural gas annually, causing more than 300 million tons of CO₂ to be emitted to the atmosphere.

Flaring of gas contributes to climate change and impacts the environment through emission of CO₂, black carbon and other pollutants. It also wastes a valuable energy resource that could be used to advance the sustainable development of producing countries. For example, if this amount of gas were used for power generation, it could provide about 750 billion kWh of electricity, or more than the African continent’s current annual electricity consumption. While associated gas cannot always be used to produce power, it can often be utilized in a number of other productive ways or conserved (re-injected into an underground formation).

This “Zero Routine Flaring by 2030” initiative (the Initiative), introduced by the World Bank, brings together governments, oil companies, and development institutions who recognize the flaring situation described above is unsustainable from a resource management and environmental perspective, and who agree to cooperate to eliminate routine flaring no later than 2030.

The Initiative pertains to routine flaring and not to flaring for safety reasons or non-routine flaring, which nevertheless should be minimized. Routine flaring of gas is flaring during normal oil production operations in the absence of sufficient facilities or amenable geology to re-inject the produced gas, utilize it on-site, or dispatch it to a market. Venting is not an acceptable substitute for flaring.

Governments that endorse the Initiative will provide a legal, regulatory, investment, and operating environment that is conducive to upstream investments and to the development of viable markets for utilization of the gas and the infrastructure necessary to deliver the gas to these markets. This will provide companies the confidence and incentive as a basis for investing in flare elimination solutions. Governments will require, and stipulate in their new prospect offers, that field development plans for new oil fields incorporate sustainable utilization or conservation of the field’s associated gas without routine flaring. Furthermore, governments will make every effort to ensure that routine flaring at existing oil fields ends as soon as possible, and no later than 2030.

Oil companies that endorse the Initiative will develop new oil fields they operate according to plans that incorporate sustainable utilization or conservation of the field’s associated gas without routine flaring. Oil companies with routine flaring at existing oil fields they operate will seek to implement economically viable solutions to eliminate this legacy flaring as soon as possible, and no later than 2030.

Development institutions that endorse the Initiative will facilitate cooperation and implementation, and consider the use of financial instruments and other measures, particularly in their client countries. They will endeavor to do so also in client countries that have not endorsed the Initiative.

Governments and oil companies that endorse the Initiative will publicly report their flaring and progress towards the Initiative on an annual basis. They also agree to the World Bank aggregating and reporting the same.

The parties that endorse the Initiative acknowledge that its success requires all involved – governments and oil companies, with the support of development institutions – to fully cooperate and take the action described herein to eliminate routine flaring no later than 2030.

The following governments endorse the Initiative:

Angola	Mexico
Cameroon	Netherlands
Republic of Congo	Norway
France	Peru
Gabon	Russian Federation
Germany	Turkmenistan
Kazakhstan	Uzbekistan

The following oil companies endorse the Initiative:

BG Group	Royal Dutch Shell
BP	Société Nationale des Hydrocarbures (SNH – Cameroon)
Eni	Société Nationale des Petroles du Congo (SNPC)
Entreprise Tunisienne d'Activités Pétrolières (ETAP – Tunisia)	Sonangol (Angola)
KazMunayGaz (Kazakhstan)	State Oil Company of the Azerbaijan Republic (SOCAR)
Kuwait Oil Company	Statoil
Niger Delta Petroleum Resources Ltd. (Nigeria)	TOTAL
ONGC (India)	Wintershall
Petroamazonas EP (Ecuador)	

The following development institutions endorse the Initiative:

African Development Bank (AfDB)	Islamic Development Bank (IsDB)
Agence Française de Développement (AFD)	OPEC Fund for International Development (OFID)
Asian Development Bank (ADB)	United Nations Sustainable Energy for All (SE4ALL)
ECOWAS Bank for Investment and Development (EBID)	West African Development Bank (BOAD)
European Bank for Reconstruction and Development (EBRD)	World Bank Group
Inter-American Development Bank (IDB)	

Attachment B to Comment Letter 22:



Plains Exploration & Production Co.
5640 South Fairfax Ave.
Los Angeles, CA 90056

Date Sampled: July 31, 2012
Date Reported: July 31, 2012

Attention: Pamela Sims
CC:

Lab ID: 120706
File ID: 07-01-12 Turbine

Sample ID: Murphy Lease
Turbine

Pressure: psig
Temperature: Deg F.
Sample Time:

GC/TCD (ASTM D1945, GFA 2261)

Analysis Results: (Detection Limit = 0.01)	Mole %		G/MCF	
OXYGEN	0.02			
NITROGEN	0.07			
CARBON DIOXIDE	0.12			
TOTAL INERTS:	0.21	(sum)		(sum)
METHANE	66.34			
ETHANE	16.32			
PROPANE	7.59		2.09	
iso-BUTANE	1.85	7.54	0.61	2.61
n-BUTANE	2.76		0.87	
iso-PENTANE	0.92	2.93	0.34	1.13
n-PENTANE	0.71		0.26	
HEXANE+	1.30		0.53	
Total:	100.00			

Specific Gravity*	0.849	Dew Point:		Deg F.
Hydrogen Sulfide:	ND < 2.5 ppm (vol)	Water Content:	ND < 2.0	lbs/MMCF
Mercaptan Sulfur:	ppm (vol)			
Gross BTU/ft ³	1462 (dry gas)		HHV:	1462
	1437 (water vapor saturated)		LHV:	1332

Revised By:

Justin Stepanian

3302 Industry Dr., Signal Hill, CA 90755
Tel: 562-426-0199 Fax: 562-426-5664
www.strata-analysts.com

Attachment C to Comment Letter 22: [OffGases Project Oil-Field Flare Gas Electricity System, PEIR Final Project Report, California Energy Commission, December 2008, CEC-500-2008-084.](#) (Hyperlink inserted)

Attachment D to Comment Letter 22:

3/26/13 WARRENCEBSODSFT RESULTS SUMMARY IBA 2012

1.0 INTRODUCTION (Continued)

Table 1-3
SUMMARY OF TEST RESULTS
Warren E&P
WTU Flare
January 18, 2012

PARAMETER	INLET	EXHAUST	PERMIT LIMIT
		As Found	
O ₂ , %	0.00	8.06	
CO ₂ , %	8.33	7.70	
N ₂ , %	0.91	84.23	
H ₂ , %		11.9	
Flow Rate, w.cfm (Facility flow monitor)	224.34	1,762	
Flow Rate, d.cfm (Facility flow monitor)	224.34	1,307	
Temperature, °F (as measured at sampling point)	81.4	1,049	
Temperature, °F (as measured at by set thermocouple)		1,195	1,100
H ₂ S, cf	352		
MMBtu/hr	(13.82)		17
SO ₂		4.06	
ppm @ 3% O ₂		4.06	15
lb/hr (as SO ₂)		0.12	
lb/day (as SO ₂)		2.9	
DENSO ₂ (as SO ₂)		0.009	
DENSO ₂ (as SO ₂)		8.86	
CO		2.3	
ppm @ 3% O ₂		7.2	10
lb/hr		0.03	
lb/day		0.83	
DENCO		1.002	
DENCO		2.53	
Hydrocarbons:			
CH ₄ , ppm	901.600	< 10.00	
TGNM0, ppm (as CH ₄)	118.593	1.35	
TGNM0, lb/hr (as CH ₄)	65.6	0.01	
TGNM0, lb/MMBtu (as CH ₄)	-	0.001	
TGNM0, lb/day (as CH ₄)	1374.9	0.27	
TGNM0, ppm @ 3% O ₂ (as CH ₄)		1.88	10
Destruction Eff. % (DRE)		99.98	98
DENMCF		0.81	7
Particulate (as PM ₁₀)			
g/dscf		0.0004	0.12
lb/hr		0.049	
DENP10		0.004	
lb/day		1.17	
DENMCF		3.01	
Total Sulfur Compound,			
Total Reduced Sulfur lb/hr, ppm	192		
SO _x Exhaust, lb/hr (as H ₂ S) ⁽¹⁾		< 0.003	
SO _x Exhaust, lb/day (as H ₂ S) ⁽²⁾		< 0.06	1
DENMCF		< 0.17	

Notes

The results in this table are the averages of all measurements.

(1) Values presented fell below 20% of the selected analyzer range. A low level CO calibration gas (9.02ppm) was introduced to the analyzer to quantify measurements below 20% of scale.

(2) The exhaust SO_x lb/hr and lb/day results are calculated from inlet reduced sulfur concentrations.

Attachment E to Comment Letter 22:

**Draft White Paper
Potential GHG Reductions from Clean Distributed Generation Technologies
at Oil and Natural Gas Facilities**

The purpose of this paper is to present staff's draft findings regarding the potential to use clean distributed generation (DG) technologies to generate electricity from fuel that currently is being flared in the production of oil and natural gas and to estimate the corresponding potential for emission reductions. Staff utilized existing data that Air Resources Board (ARB) has collected from oil and natural gas facilities via a survey of these facilities that was conducted in 2009. The survey was not designed to address the issue of using clean DG technologies in lieu of flaring. As such, the analysis has some limitations due to the nature of the data that was available. The assumptions used in the calculations and some of the data limitations are addressed further in the body of the paper.

Background

Gas, mainly methane and carbon dioxide (CO₂) is typically produced when oil is extracted from oil fields. This associated gas is separated from the oil and depending upon the quality and quantity of the gas, can be processed to be added to a natural gas pipeline, used as fuel for equipment at the facility, flared, or re-injected into the oil field. For the gas that is flared, staff evaluated the potential for using clean DG technologies in place of flaring thus harnessing this energy for a useful purpose (thermal or electricity) with a corresponding reduction in emissions. The evaluation also includes an estimate of the electricity potentially produced from combusting the gas that would otherwise be flared, as well as the associated impact on emissions of greenhouse gas and criteria pollutants. Additionally, natural gas is flared at some natural gas facilities. Thus, in addition to considering the potential to utilize flared gas from oil fields, staff also considered the potential for redirecting flared gas from natural gas facilities for use with clean DG technologies.

Clean DG technologies are electrical generating technologies that have very low criteria pollutant emissions¹. Examples of clean DG technologies include microturbines, fuel cells, and a thermal oxidizer integrated with a microturbine. The estimates given in this paper are based on the best available information. Additional research including site-specific field data would be needed to refine the assumptions used in the analysis.

¹ Many of the technologies have been certified via ARB's Distributed Generation Program (sections 94200-94214 of the California Code of Regulations) to have emissions that are no greater than the emissions that would be emitted by a new combined cycle power plant equipped with Best Available Control Technology

Basis of Data Used For Analysis

This analysis is based on the results of a comprehensive ARB survey (2009) regarding oil and gas drilling and production activity during 2007². The survey was completed by 325 companies representing over 1,600 facilities, and represents all activities associated with finding, producing, processing, transporting, and storing oil and natural gas.

Staff used the survey results from facilities using vapor recovery and flares. The survey requested information on the type of control device and the amount of gas that is burned in flares, thermal oxidizers, and incinerators. Based on the survey results, there are a total of 255 control devices (flares, thermal oxidizers, incinerators, carbon adsorbers, etc.) located at 178 facilities.

Staff evaluated the survey results to establish the possible sources of gas to fuel DG technologies from these facilities. Sources of gas were grouped according to facility type and control device technology for evaluation. Staff found that many of the types of facilities or control devices reported in the survey were not suitable for supplying gas to clean DG technologies. In these cases, these facilities or control devices were excluded from the DG evaluation. For example, staff evaluated the likelihood that the flared gas is either an intermittent flow or constant flow. Flared gas that is expected to be intermittent was excluded from the DG evaluation because most clean DG units require a constant flow of fuel to operate efficiently. Table 1 lists the facility types and control devices that are included in the survey results, but excluded from staff's DG evaluation and the reason for the exclusion.

² <http://arb.ca.gov/cc/oil-gas/oil-gas.htm>

Table 1
Categories Excluded From Oil and Natural Gas Clean DG Evaluation

Category Excluded From Evaluation	Reason for Exclusion
Carbon absorbers	Gas collected is typically not flared
Utility natural gas transmission stations	Flaring activity is intermittent, based on maintenance needs or emergency event; need steady flow of gas for DG
Natural gas storage facilities	Flaring is intermittent, based on maintenance needs or emergency event; need steady flow of gas for DG
Crude oil storage facilities	Gas associated with the oil is removed before reaching storage facilities; limited flaring of gas
Gas Plants	Flaring activity is intermittent, based on maintenance needs or emergency event; need steady flow of gas for DG
Off-shore facilities	Infrastructure needed to connect from platform to grid not cost effective
Flares with no reported gas usage	Assume activity would not provide steady gas flow needed for DG

Staff notes that the gas plants, as a category, flared the largest amounts of gas; however, most of the flared gas was the result of normal maintenance, which occurs infrequently, and therefore, would not be a good candidate for DG applications.

After excluding the above facilities and control devices, staff focused its evaluation on 124 combustion devices located at 88 facilities for suitability of using clean DG in lieu of flaring. The amount of gas flared by this group represents about 1/3 of the total gas flared for all sources documented to flare gas in the survey. Based on the limitations of the available data, staff views this as an approximation of the gas potentially available for DG applications. Refining the estimate would require more detailed site-specific information which is beyond the scope of this evaluation.

Results

Using ARB Oil and Gas Field Survey results, staff determined whether there was sufficient gas flow, in terms of British thermal units (Btus) per hour, at each location identified in the survey to support at least one clean DG unit operating at 85 percent of its capacity. Staff assumed this to be the typical operating capacity for DG-sized generating equipment over the course of one year. If there was not enough gas to support the DG unit, then for the purposes of this analysis, the gas would continue to be flared. By considering the application of relatively small DG systems, such as a 65 kW microturbine, staff determined that half of the 124 flares could support that technology at 40 different facilities. However, only about a third of the flares processed enough associated gas to support one of the larger clean DG units shown in Table 2 below.

Overall, if clean DG units are used instead of the flares, about 100,000 to 200,000 megawatt-hours (MWh) of electricity could be generated from 14 to 28 megawatts (MW) of total potential generation capacity. This amount of electricity is equivalent to serving between 15,000 and 30,000 homes³. The lower end of the range is based on the assumption that all the gas is utilized in thermal oxidizer-microturbine hybrid devices, while the upper end of the range is based on using more efficient 400 kW fuel cell devices.

Table 2 estimates the potential emission reductions for two cases: 1) electrical generation only and 2) combined heat and power (CHP) applications using a variety of clean DG technologies. Additional reductions resulting from more efficient CHP applications are only considered for those locations that have onsite thermal needs based on responses to the survey. For CHP applications, staff assumed clean DG can only be used to displace onsite heating applications that do not require steam. For example, staff assumed the heat from a CHP application can be used in place of the heat provided by heater treaters or oil heaters.

In the table, the potential emission reductions of oxides of nitrogen (NO_x), volatile organic compounds (VOC), and greenhouse gases (GHGs) are reported for each type of clean DG system. For example, the first row reflects estimates for the potential reductions if only 65 kW microturbines are used to generate electricity and provide CHP at the sites that can support this size turbine. The lower emission reduction estimate is for electrical production only and the higher estimate includes CHP. Criteria pollutant emission reductions are based on the difference between emissions from the flaring/burning of the associated gas and the emissions from the clean DG system and the emissions from any remaining associated gas that would be flared/burned. Additional reductions would come from CHP if there are heater treaters or oil heaters at the location and electricity is displaced from the grid. GHG emission reductions are based on the difference in GHG emissions between the flare and clean DG unit, the potential for CHP application (e.g., replacement of heater treaters), and the displacement of electricity from the grid.

³ Based on United States Energy Information Administration estimate for the electricity used by an average California home

The estimates are based on the assumption that the gas flows are constant (the survey results provided the annual amount of gas flared). If the flows vary, which is likely, then the DG units, particularly fuel cells, may need to be sized to match the lowest flow rate or provide for storage, which would lower the energy production and emission reductions shown in the table below. Additionally, site specific issues may also reduce the available amount of gas that can be used in a clean DG unit.

**Table 2
Potential Emission Reductions of Different Clean DG Technologies to Utilize Gas that is Currently Flared***

Equipment	Size (kW)	Potential DG Sites / Units	NO _x (TPY ⁴)	VOC (TPY)	GHG (kMT/yr) ⁵
Microturbine	65	40 / 282	53 – 65	10 – 12	62 – 102
Microturbine	250	17 / 60	49 – 58	<1 – 2	51 – 83
Thermal Oxidizer / microturbine	250	17 / 56	54 – 54	3 – 3	49 – 49
Fuel Cell	300	22 / 93	70 – 74	5 – 6	108 – 122
Fuel Cell	400	17 / 56	56 – 63	2 – 4	72 – 96

* Lower end of ranges based on electricity generation only, while the higher end is based on potential for CHP applications.

Staff understands that significant amounts of gas may be re-injected back into the underground reservoir from which the oil or gas came. Using this gas instead for power generation and thermal load could result in additional reductions. Finally, ARB is considering developing a measure for controlling storage tanks that are currently exempt from emission control requirements. If this measure was developed, additional gas could be available to power clean DG units that could garner additional emission reductions.

Summary

This paper presents staff's draft findings regarding the potential to use clean DG to generate electricity from fuel that is flared in the production of oil and natural gas and the resulting potential for emission reductions of GHG and criteria pollutants. Staff utilized existing data from an oil and natural gas facilities survey conducted in 2009. However, the survey was not designed to address the issue of using clean DG technologies in lieu of flaring. As such, the analysis had some limitations due to the nature of the data that was available. Additionally, staff did not estimate the cost or the

⁴ TPY stands for standard tons per year

⁵ kMT/yr stands for thousand metric tons of CO₂ equivalent emissions per year

cost effectiveness of using clean DG as costs are highly site-specific due to the nature of capturing/directing gas to DG technologies.

If clean DG units are used to combust associated gas from oil and natural gas production, the amount of gas flared is estimated to support between 14 to 28 MW of DG generating about 100,000 to 200,000 MWh per year. This is equivalent to the amount of electricity that could serve between 15,000 and 30,000 homes.

Utilizing these DG units would also result in reductions in NO_x (50 to 75 TPY), VOC (up to 12 TPY) and GHG (50 to 122 kMT/yr) emissions. These emission reductions would be equivalent to removing about 15,000 to 35,000 new cars from the road.

DRAFT

Responses to Comment Letter from Michael Salman
(Comment Letter 22)

Response to Comment 22-1:

Thank you for supporting CMB-03 which is proposed as a regulatory measure to address non-refinery flaring.

Response to Comment 22-2:

Staff acknowledges that there are different technology options and challenges with the different source categories included in CMB-03 (oil and gas, landfill, and wastewater treatment). Each source category may require a different approach with the overall goal of reducing NOx and other emissions from non-refinery flares. Once a working group is established, a more detailed discussion on the different methods or alternatives to flaring waste gas from each source category will be determined and addressed.

Response to Comment 22-3:

Staff will be pursuing paths to reduce routine flaring at oil and gas facilities and require any flaring that does occur to have the most stringent emissions limits feasible.

Response to Comment 22-4:

Staff will lobby for incentive funding to ensure the success of incentive measures. These incentive measures are designed to encourage facilities to transition to zero and near-zero emission technologies. A Financial Incentive Funding Action Plan is currently under development that will provide more detail as to the possible sources of funding available.

While likely evident, we must underscore that this is not simply an academic concern. The costs of further under-predicted reductions would be extremely high. SCAQMD's preliminary cost summary for the Draft 2016 AQMP's control measures is \$38 billion (2017 present value), which includes almost \$14 billion in incentives, between 2017 and 2031. If future ozone reductions are under-estimated (leading to an over-estimation in needed reductions), perhaps dramatically, then standards imposed on the regulated community and incentive funds may be unnecessarily large.

The District has a well-earned reputation of being on the forefront of regulatory emissions and photochemical modeling science. BizFed recommends that SCAQMD dedicate funding and staff resources to work with ARB and industry technical experts on an expedited basis, with resolution of these issues in 2017 being a priority. Ultimately, these issues may not be resolved in the timeframe of the 2016 AQMP development; at a minimum, however, they should be acknowledged in control strategy commitments to USEPA. In addition, the public should be allowed at least one-month (30 days) to review and comment on Appendix V, entitled "Modeling and Attainment Demonstrations," of the Draft AQMP upon its issuance.

23-2
Con't

The Overall Policy Framework Should Prioritize Cost-Effective, Non-Regulatory, and Innovative Approaches to Emission Reductions

BizFed is supportive of an AQMP establishing a policy framework that prioritizes non-regulatory, innovative approaches to emission reductions that are cost-effective and minimize operational disruptions. Programs or control measures must allow for and should incentivize voluntary and collaborative approaches to achieving air quality goals. Furthermore, we believe that an AQMP should not be punitive, especially as the region has made tremendous strides lowering emissions from stationary and mobile sources. To this end, the Draft 2016 AQMP includes incentives to encourage the accelerated transition of vehicles, buildings, and industrial facilities to cleaner technologies in a manner that benefits air quality and the local economy. We support this approach and appreciate the District's efforts to partner with industry.

23-3

Currently, the Plan estimates that the amount of incentive funding needed is approximately \$11 – 14 billion over a seven to fifteen-year period. We urge the District to provide additional information as to how much funding has been secured, how much funding has yet to be obtained, and the timeline over which the balance of funds is expected to be received and become available for use. BizFed is committed to collaborating proactively with the District to help develop solutions for obtaining the needed funding. We understand that this will take a strong public-private effort, and we look forward to working with SCAQMD on this matter.

BizFed Has Serious Concerns About SCAQMD's Proposals to Control Growth and Indirect Sources

SCAQMD proposes one growth management measure, EGM-01 - Emission Reductions from New Development and Redevelopment Projects, and four "facility-based" mobile source measures: MOB-01 - Emission Reductions at Commercial Marine Ports, MOB-02 - Emission Reductions at Rail Yards and Intermodal Facilities, MOB-03 - Emission Reductions at Warehouse Distribution Centers, and MOB-04 - Emission Reductions at Commercial Airports. These control measures seek to reduce emissions from on- and off-road sources, which are within the exclusive purview of ARB and the U.S. EPA. Importantly, both ARB and the U.S. EPA already have rules and regulations in place for these sources to significantly reduce NOx emissions. According to the Draft 2016 AQMP, "[t]he effect of the rules and regulations are significant, showing reductions of over 67 percent in NOx emissions and close to 60 percent in VOC emissions between 2012 and 2023, even with increases in fleet population," (Draft 2016 AQMP, Chapter 3, p. 3-4.)

23-4

BizFed has serious concerns about the SCAQMD making commitments to the state and federal governments that it will control growth and indirect sources because SCAQMD lacks authority to control growth or overrule local land use decisions, and land use is within the exclusive purview of

local cities and counties. Furthermore, not only does SCAQMD lack the authority to adopt indirect source rules, such rules would likely have a chilling effect on business development.

Critically, both the District and ARB have acknowledged that the growth management and indirect source control measures are not necessary to meet the requirements of the federal Clean Air Act. Further, there is no emission reduction target for these control measures in the Draft 2016 AQMP, and there is little to no emission reduction benefit from the indirect source control measures. Instead, additional mobile source emission reductions will come from new measures that call for greater emission reductions through accelerated turnover of older vehicles to the cleanest vehicles and equipment currently available and increased penetration of commercially-available near-zero and zero-emission technologies through existing incentives programs.

23-4
Con't

Measures MOB-1 through MOB-4, and MOB-8 Will Negatively Impact Regional Goods Movement and Goods Movement Dependent Industries

We have serious concerns about the effects that the proposed control measures MOB-1 through MOB-4 ("Facility Measures") and portions of MOB-8 ("Fleet Rules") will have on goods movement and goods movement-dependent industries.

BizFed has repeatedly opposed freight facility emission caps and performance targets. The proposed Facility Measures may leave the door open for the adoption of such regulations. These concepts would represent an unprecedented, and legally questionable, expansion of the SCAQMD's regulatory authority of the freight industry at a time when the industry is spending billions of dollars to reduce key pollutants by as much as 99 percent.

We are also concerned about any expansion of the District's Fleet Rules to private trucking fleets, which was already struck down by the United States Supreme Court.

23-5

Facility Measures and Fleet Rules put the region at a competitive disadvantage with the rest of the country because they:

- Push private investments in freight facilities and infrastructure outside of the region.
- Negatively impact wage growth and job creation in a sector that is one of the region's largest providers of working class jobs.
- Create inefficiencies by creating incentive to cite freight facilities outside the region, thereby lengthening vehicle miles traveled to reach Southern California population centers and increasing emissions.
- Create an unnecessary patchwork of regulations as California has already adopted the strictest fleet regulations in the country to meet the basin's needs.

Measure CMB-05 Is Not Needed Due to the December 2015 Amendments to the RECLAIM Program, and Its Reductions Are Unsubstantiated

The Draft AQMP, in control measure CMB-05, proposes a reduction target of 5 tpd from the NOx RECLAIM program by 2031. The presented basis for this measure is to address "issues that arose during recent NOx RECLAIM amendments." (Draft 2016 AQMP, Appendix IV, p. IV-A-77.)

23-6

However, all of the so-called "issues" were addressed by the December 2015 amendments to the RECLAIM program or about to be moot based on pending rulemaking. For example, by its very design, the December 2015 RECLAIM rulemaking will essentially eliminate all previously "unused" RTCs once fully implemented by 2023. The December 2015 rulemaking also features an "off-ramp" for Electrical Generating Facilities at BACT or BARCT, so that remaining RECLAIM facilities will have to meet the Staff's BARCT levels (found in Rule 2002) on a programmatic basis. Staff also is now proposing

RECLAIM amendments for confiscation of RTCs from shutdown facilities. Further, several other "issues" are no longer valid concerns given the 2015 amendments to RECLAIM. And several of the other concepts (e.g., command-and-control overlays, the role of investors, etc.) are matters of District policy and/or State law, and should be considered beyond the scope of this AQMP.

Given the substantial emission reductions already achieved by the RECLAIM program, and the very large pending reductions being required under the December 2015 amendments, we are very concerned about proposed CMB-05 and the cost burden it would impose on the Southern California economy. Furthermore, Staff has provided no factual basis to support taking 5 tpd of additional reductions out of the NOx RECLAIM program. We strongly recommend this measure be removed from the AQMP. If the district insists on including a RECLAIM control measure in this AQMP, it should be a range since what is included in the AQMP is the minimum commitment to USEPA that must be met. We recommend a range of 0-3 tpd.

23-6
Con't

In closing, as the District moves forward to finalize the 2016 AQMP, the business community that we represent and, we believe, the business community at large remain committed to working with SCAQMD to ensure the Plan fulfills its legal requirements while also protecting and promoting job creation and economic success for Southern California. Thank you for allowing us the opportunity to provide our comments on this important matter.

Sincerely,



Gilbert F. Ivey
BizFed Chair
Former CAO,
Metropolitan Water District



David Fleming
BizFed Founding Chair



Tracy Hernandez
BizFed Founding CEO
IMPOWER, Inc.

Responses to Comment Letter from Los Angeles County Business Federation (BizFed)
(Comment Letter 23)

Response to Comment 23-1:

Staff thanks for your participation in the development of 2016 AQMP and your comments on the Plan's proposed control measures.

Response to Comment 23-2:

The 2016 AQMP uses a state-of-the-science modeling platform, the most updated emissions inventory and U.S. EPA guidance. The underestimation from the 2012 AQMP has been improved upon based on the newest attainment guidance by U.S. EPA. In addition, U.S. EPA requires to use 5-year weighted design value to demonstrate attainment, however, the analysis conducted by other private institutes failed to use the recommended 5-year weighted design value and mislead the results.

Appendix V was released in September 2016 and provided more than 30 days for public review and comment.

Response to Comment 23-3:

Staff appreciates support for the incentives approach. A Financial Incentive Funding Action Plan is currently under development that will provide more detail as to the possible sources of funding available.

Response to Comment 23-4:

The SCAQMD Mobile Source Measures are intended to help implement the State Mobile Source Strategy "Further Deployment of Cleaner Technologies" measures found in Appendix IV-B. The SCAQMD is identified as an implementing agency under these measures. As such, the SCAQMD staff is providing the proposed measures to initiate discussions through a public process to identify actions or develop mechanisms to achieve additional emission reductions.

With regard to the facility-based measures, during the public process, SCAQMD staff will seek input and comments on identifying actions that could be voluntary or regulatory nature. The SCAQMD staff will report to the SCAQMD Governing Board on progress in identifying actions. However, if actions are not identified or incentive funding is not sufficient to achieve additional emission reductions, the SCAQMD staff will recommend to the SCAQMD Governing Board the development of rules within the SCAQMD authority or other enforceable mechanisms. Staff is proposing that a recommendation be made within one year from the adoption of the Final 2016 AQMP. See Response to Comment 23-5 regarding the need for the proposed measures.

Response to Comment 23-5:

As noted in response to Comment 23-4, the proposed measures seek to implement the State Mobile Source Strategy "Further Deployment" measures. The proposed measures do not set a "cap" and the overall AQMP emission reductions needed for attainment is proposed to be used as a goal to initiate discussions on identifying actions to achieve additional emission reductions. While these measures are not assigned specific emission reduction goals, staff believes they are still necessary to help implement the State SIP Strategy "Further Deployment" measures in the AQMP. Identified emission reductions will

be credited in the SIP as part of future Rate-of-Progress reporting and future AQMP revisions if the emission reductions are considered surplus, quantifiable, and permanent. If the emission reductions are to be placed into the SIP, U.S. EPA requires that an enforceable commitment be made to ensure that the reductions are permanent.

As part of the public process, the SCAQMD staff will be evaluating the need to adopt rules to help implement this measure.

SCAQMD staff appreciates the comments regarding competitiveness. It is for these reasons that staff believes that a public process to identify actions, including those that are already being implemented by businesses and industry, that potentially have criteria pollutant emission reduction benefits and providing funding incentives to assist fleets to replace older vehicles and equipment will help reduce any potential competitiveness concerns. Conversely, the region bears the health costs of serving as the nation's key gateway for imported goods, and it is important to reduce these impacts to the extent feasible without undue socioeconomic impact. The socioeconomic impact assessment details anticipated impacts and benefits from implementing the 2016 AQMP.

Response to Comment 23-6:

Under state law, the SCAQMD is required to conduct periodic BARCT assessments as pollution control technologies advance over time. Under the proposed control measure, this BARCT re-assessment would occur out into the future and well beyond the recent 2015 amendments to the program. Potential technologies that were identified in the December 2015 amendments would have further matured and based on past amendments, the control measure's emission reduction target is reasonable. This notwithstanding, the control measure also proposes a serious consideration for an orderly sunset of the RECLAIM program in order to create more regulatory certainty, reduce compliance burdens for facilities, and achieve more SIP-creditable emission reductions.

**Comment Letter from Los Angeles County Metropolitan Transportation Authority
(Comment Letter 24)**



Metro

Los Angeles County
Metropolitan Transportation Authority

One Gateway Plaza
Los Angeles, CA 90012-2952

213.922.2000 Tel
metro.net

August 18, 2016

Dr. Philip Fine
Deputy Executive Officer
South Coast Air Quality Management District
21865 Copely Drive
Diamond Bar, CA 91765

Re: Draft 2016 Air Quality Management Plan

Dear Dr. Fine:

Thank you for the opportunity to review the South Coast Air Quality Management District (AQMD) Draft 2016 Air Quality Management Plan (AQMP). We have been pleased to have participated in the AQMP Advisory Group over the last several years as the AQMD has worked to address the challenging air quality issues facing our air basin.

Metro is pleased to be a partner in working toward the attainment of air quality and greenhouse gas reduction goals through an ambitious long range planning effort that includes significant transit, active transportation, and demand management programs. These programs have been major contributors to the region's efforts to attain both federal air quality conformity requirements and state greenhouse gas reduction goals of SB 375. Additionally, Metro is a leader in operating clean fuel transit vehicles, currently operating the largest clean fuel fleet in the North America, with over 2,000 clean fuel buses.

24-1

We commend the AQMD for a Draft AQMP that is generally well written. As you have stated in this Draft AQMP, it is clear that fair-share emission reductions at the federal and state levels are important in reaching federal air quality requirements. Our comments on the Draft 2016 AQMP are as follows:

- In Appendix IV-B, page 30 (incorporated from the Advanced Clean Transit Measure (ACT) from the Air Resources Board's 2016 Mobile Source Strategy) – We support the “flexibility to allow transit fleets to implement advanced technology in ways that are synergistic with their operations.” If the rule that results from the ACT measure restricts transit agencies to turnover their clean CNG fleets to electric or fuel-cell buses, the cost of doing so would significantly reduce service, impacting disadvantaged communities that we serve as well as our ability to meet federal air quality conformity requirements. There are also operational considerations associated with a mandate for specific fleet technologies given the demands of our extensive territory and the current state of technology.

24-2

- Page ES-8 of the Draft AQMP begins the discussion of using public funding incentives to meet the NOx emission reductions needed to attain federal ozone air quality standards (estimated at \$11 billion to \$14 billion over a seven to fifteen year period). Incentive funding and other dedicated funding programs are necessary in order to meet requirements for increasingly cleaner transit vehicles, infrastructure and training.

24-3

If you have any questions, please contact Brad McAllester, Executive Officer, Long Range Planning at 213 922-2814.

Sincerely,



Therese McMillan
Chief Planning Officer

cc: Hasan Ikhata, SCAG Executive Director

**Responses to Comment Letter from Los Angeles County Metropolitan Transportation Authority
(Metro) (Comment Letter 24)**

Response to Comment 24-1:

Staff appreciates the comment and will work closely with the transit agencies to help attain air quality standards for the region.

Response to Comment 24-2:

Staff appreciates the comment and looks forward to working with the transit agencies as CARB develops the Advanced Clean Transit regulation. Your comments will be forwarded to CARB.

Response to Comment 24-3:

Staff appreciates the comment. We look forward to working with Metro and other stakeholders in identifying additional incentives funding. Staff is preparing the Funding Plan to accompany the 2016 AQMP which further identifies potential incentive funding sources.

Comment Letter from San Bernardino Associated Governments (Comment Letter 25)

Governments
SANBAG
Working Together

San Bernardino Associated Governments
1170 W. 3rd Street, 2nd Floor San Bernardino, CA 92410-1715
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■ San Bernardino County Transportation Commission ■ San Bernardino County Transportation Authority
■ San Bernardino County Congestion Management Agency ■ Service Authority for Freeway Emergencies

August 18, 2016

Mr. Wayne Nastri
Acting Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Subject: San Bernardino Associated Governments' (SANBAG's) comments on the draft 2016 Air Quality Management Plan (AQMP)

Dear Mr. Nastri:

This letter is in response to the opportunity being provided by the South Coast Air Quality Management District (SCAQMD) for comment on the draft 2016 AQMP released on June 30, 2016. SANBAG greatly appreciates the effort that went into the preparation of the draft AQMP by SCAQMD, the California Air Resources Board (ARB), and the Southern California Association of Governments (SCAG).

The first part of the letter provides some general comments on the objectives of the AQMP, followed by several comments on selected sections. It is our understanding that a second draft will be provided following this initial comment period and that there will be additional opportunity for comment on that draft.

As you are aware, southwestern San Bernardino County has some of the worst air quality in the United States. Like other counties in the South Coast Air Basin, we are very concerned about air quality and are committed to making further improvements together with SCAQMD, ARB, and the private sector. SCAQMD and your partners in the region have made tremendous progress in improving air quality in the last several decades, especially for the most impacted areas such as San Bernardino County. This progress needs to continue.

25-1

At the same time, air quality standards and timelines need to be achievable in ways that do not set back the San Bernardino County economy. Over 20 percent of our labor force derives its living from the logistics sector, which is often cited as a primary source of the NOx emissions that contribute to ground-level ozone concentrations. As we move forward with air quality improvements, we must pay attention to the dual objectives of cleaning the air while also promoting a vibrant economy. A vibrant economy is needed to support the technology advancements and their adoption into the marketplace in a way that will make the air quality improvements possible.

WN160818 - SS

Cities of: Adelanto, Barstow, Big Bear Lake, Chino, Chino Hills, Collon, Fontana, Grand Terrace, Hesperia, Highland, Loma Linda, Montclair, Needles, Ontario, Rancho Cucamonga, Redlands, Rialto, San Bernardino, Twentynine Palms, Upland, Victorville, Yucaipa
Towns of: Apple Valley, Yucca Valley County of San Bernardino

Wayne Natri
August 18, 2016
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Comments on Plan Objectives

SANBAG concurs with the Plan objectives as expressed on pages ES-4 through ES-6, and would like to emphasize the following points:

- For objective *“Eliminate reliance on future technologies (CAA §182(e)(5)) measures to the extent feasible.”* - We agree with the statement that “Some CAA §182(e)(5) flexibility may be needed for Plan approval by U.S. Environmental Protection Agency (EPA) given the need for continued technological and cost improvements and new funding and incentive programs.” SCAQMD rightly recognizes that there is a potential need to include some of the incentive-based measures in the “black box” (CAA §182(e)(5)) if EPA determines that the funding for these measures is too questionable.

On the broader topic of flexibility, we recognize that major technological advancements have occurred and commercialization of key technologies (e.g. ultra-low NOx truck engines) appears within reach. However, unknowns still exist in the cost and performance characteristics of some of the technologies. While we recognize that SCAQMD and ARB must prepare an approvable State Implementation Plan (SIP), it is also important that the marketplace have confidence in the performance of the cleaner technologies being made available. We trust that the federal regulators will work with us on the long term pathway to attainment and not put SCAQMD and ARB in the position of having to adopt measures in the short term that are not as cost-effective and that potentially have greater impacts on business when the most effective measures are within reach. Perhaps the need for flexibility could come into play if, for example, commercialization of some of these key technologies should lag behind the anticipated timeline.

25-2

We recognize that the attainment timelines are tight, but flexibility and a cooperative spirit at all levels will be important as we get closer to the attainment dates. All the agencies in the region are working extremely hard to improve air quality, and our success has been evident. The AQMP acknowledges the dual goals of both attaining air quality standards and supporting the economy, and the type of flexibility suggested in this objective is a good example of this balance in action.

- For objective *“Develop a strategy with fair-share emission reductions at the federal, state, and local levels.”* – Our reading of the draft AQMP suggests that the South Coast Air Basin cannot achieve the NOx reductions for timely attainment of federal ozone standards alone, even together with actions by ARB. This objective references the importance of federal action, including a new ultra-low NOx engine emission standard for heavy duty trucks. SANBAG has signed on to SCAQMD’s “Petition to EPA for Rulemaking to Adopt Ultra-Low NOx Exhaust Emission Standards for On-Road Heavy-Duty Trucks,” as documented in our letter to EPA’s Gina McCarthy dated July 18, 2016. The need for federal action is clearly identified in Figure ES-2 of the AQMP Executive Summary, and the graphic shows that the importance of federal action increases over time. Although ARB may adopt its own ultra-low NOx standard, it will be much better for California and the region if EPA carries out its responsibility by adopting this

25-3

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 August 18, 2016
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standard, which will be key to attaining the ozone standard that EPA, itself, has set. Federal action more than doubles the NOx reduction of a state-only action. Adopting only a state standard will also put California at an even greater competitive disadvantage, which is contrary to the intent of the Governor's Executive Order B-32-15. We were glad to see that the EPA has signaled its intent to begin discussions on a lower NOx standard in its August 16, 2016 Final Rule on "Standards to Reduce Greenhouse Gas Emissions and Improve Fuel Efficiency of Medium- and Heavy-Duty Vehicles." The EPA clearly understands the importance of such an action and we are optimistic that they will move the process forward.

25-3
 Con't

- For objective **"Invest in strategies and technologies meeting multiple objectives regarding air quality, climate change, air toxics exposure, energy, and transportation."** – As we stated in our comment letter on the AQMP white papers last year, we support strategies for reducing criteria pollutants that have co-benefits for Green House Gas (GHG) reduction. However, this may not always be practical if we are to meet the more pressing deadlines for attaining the 8-hour ozone standard. ARB indicated at the AQMP Advisory Group meeting on June 15 that their strategy for mobile sources involved beginning with measures for GHG reduction and then adding control measures needed to attain federal standards for criteria pollutants. This seems logical, except that it could result in an overall strategy that is suboptimal for achieving federal standards for criteria pollutants within the prescribed timelines for 2023 and 2031. It would seem that meeting federally mandated criteria pollutant attainment deadlines should take priority.

25-4

Additional clarification is needed regarding how the GHG reduction goals for mobile sources interact with the attainment of criteria pollutant standards. The extent to which the GHG goals influenced the attainment strategy is unclear, and whether/how the costs associated with GHG reduction strategies are included in the costs for attainment. The costs identified in the AQMP for attaining federal standards are extraordinary, and we would just want to make sure that the path to attainment is not unintentionally more costly than it needs to be. We would request that SCAQMD and ARB more thoroughly explain the cost and timeline implications of the way in which they approached the co-objectives of GHG and criteria pollutant reduction. If the path to attainment for criteria pollutants is less than optimal from a timing and cost perspective, this is another reason for the regulatory agencies to provide flexibility to the South Coast, per the first objective in the AQMP. In other words, the District and its partners should not incur greater costs in its path to timely attainment by virtue of also striving to help the state achieve its GHG reduction goals. It is not clear from the documentation whether this is the case, but the question needs to be raised.

- For objective **"Seek significant funding for incentives to implement early deployment and commercialization of zero and near-zero technologies."** – As the draft Plan points out, incentive funding will be critical to the rate at which auto and truck vehicle fleets can be turned over to achieve air quality standards within the prescribed timelines. We appreciate that SCAQMD has consistently made this point with ARB and EPA, and the dialogue between the agencies has been helpful with regard to how incentives may be considered in the SIP. The point is that this region will need significant financial help

25-5

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from the state and federal levels, and any failure to receive the necessary help from state and federal agencies should not result in the imposition of control measures that carry with them local costs and economic disadvantages that would make it even more difficult to raise the capital necessary to comply. A robust economy is needed to generate the funding stream that will enable investment in these technological improvements. The San Bernardino County economy is particularly vulnerable to this possibility, given the extent of disadvantaged communities in our area and our dependence on the logistics sector for economic growth.

25-5
Con't

- For objective **“Enhance the socioeconomic analysis and pursue the most efficient and cost-effective path to achieve multi-pollutant and multi-deadline targets.”** – We appreciate the significant work that has gone into the economic analyses for the draft AQMP and the ARB Mobile Source Strategy and SIP Strategy, and we look forward to seeing the additional detail that AQMD and ARB have developed. The overall conclusion of the economic analysis for mobile sources is that *“the Mobile Source Strategy is estimated to have a negligible impact on the California economy resulting in an average slowing in the growth of the gross state product ... of 0.051 percent from 2023 to 2031”* (source: page A-2 of the *ARB Mobile Source Strategy Appendix A: Economic Impact Analysis*). While this may be true of the impact on the economy overall, based on the REMI modeling, we would urge ARB to highlight more of the potential sector-based and geographically-based impacts. For example, the forecast cost for conversion of truck fleets to cleaner vehicles is extraordinarily high, and we have to imagine that this will hit logistics-based economies like San Bernardino County most heavily. We recognize that our citizens will receive the important benefit of improved air quality, but the differential impact of the costs of implementation need to be more fully explained. It will be little consolation to individuals and families working in the logistics industry in San Bernardino County if we are put at a more competitive disadvantage because of the costs we will be required to bear. A viable incentives program can go a long way toward minimizing these impacts, and the case for incentives needs to be made proactively in Sacramento and Washington. We look forward to working with AQMD and ARB to see that this case is made.

25-6

Additional Comments

- Page ES-10 – SANBAG concurs with SCAQMD’s desire to reclassify the South Coast Air Basin as a “serious” nonattainment area for PM2.5. This will provide the time needed to reach attainment for the annual PM2.5 standard in 2023, given that demonstrating attainment is impracticable for 2021, the “moderate” PM 2.5 nonattainment area deadline.
- Page 4-9, top paragraph – SANBAG concurs with the statement “Air quality regulatory agencies have traditionally set policies and requirements that are performance-based, and thus technology- and fuel-neutral. This is a policy that the SCAQMD intends to continue. All technologies and fuels should be able to compete on an equal footing to meet environmental needs.”

25-7

Wayne Natri
August 18, 2016
Page 5 of 5

- Pages 4-61 and 4-62 – We appreciate the efforts undertaken to estimate the cost of turning over mobile source fleets at a level that will achieve air quality standards. As indicated, the magnitude of the cost is large, and the required scale of incentives is unprecedented. Yet the pathway to attainment expressed in the AQMP has become clearer as technology has progressed. SANBAG is prepared to work with SCAQMD and ARB to help secure the needed resources at the state and federal levels. At the same time, these funds should not come at the expense of the funding streams we have traditionally relied upon for operating and maintaining our transit and transportation infrastructure and systems.
- There are a number of measures that have not been quantified in the Draft AQMP and are put into a “to be determined” category. Our understanding is that these are not needed to demonstrate attainment, so we would question why they are included alongside the quantified measures. More information is needed as to how these “TBD” measures are intended to be used, and any process for later quantifying and adopting these measures should be further explained. These should receive the same level of scrutiny, analysis, and public review as the quantified measures in the AQMP.

25-7
Con't

Again, we appreciate the opportunity to work with you on the 2016 AQMP and look forward to further discussions.

Regards,



Raymond W. Wolfe
Executive Director

Responses to Comment Letter from San Bernardino Associated Governments (SANBAG)
(Comment Letter 25)

Response to Comment 25-1:

Staff appreciates comments and your participation in the 2016 AQMP public process. We are aware of the dual objectives of cleaning the air while promoting a vibrant economy.

Response to Comment 25-2:

Staff agrees that certain technologies will need time to be developed and made commercially available, thus flexibility in the control strategy is warranted. The objective in the Plan to eliminate the reliance on future new technology is intended to advance deployment of known cleaner technologies coupled with incentives to assist in making actions cost-effective for some sources where technologically feasible. This is particularly important because of the fast-approaching ozone standard deadlines. Over time, the cleaner technology will be more commercially available, achieved in practice, feasible in more applications, etc. so as to provide a less burdensome transition in future rulemaking. Staff plans to develop the incentive program in accordance to U.S. EPA requirements for SIP credit, ensure appropriate funding, and achieve the committed reductions.

Response to Comment 25-3:

Staff appreciates the comment and support for the petition to U.S. EPA on adopting ultra-low NOx engine emission standards.

Response to Comment 25-4:

In order to get emission reduction credit from the co-benefits of existing GHG programs, it is critical to conduct proper tracking and reporting. Staff plans to ensure those calculations are conducted and reporting is properly submitted to U.S. EPA for SIP credit.

The comment letter asks if GHG goals and associated costs affect the AQMP attainment strategy and total cost. Staff has discussed this issue with CARB and both agencies recognize that a very large part of the cost initially identified for the AQMP was due to the light-duty vehicle measure, which is primarily a GHG reduction measure and will be implemented anyway to attain GHG goals. Staff has therefore removed the costs of this measure from the 2016 AQMP costs and treated the measure as a GHG measure with NOx co-benefits.

Response to Comment 25-5:

Staff appreciates the comments and will be working closely with CARB to ensure that funding for deployment of zero and near-zero emission vehicles and equipment will be prioritized for the region to help meet air quality standards.

Response to Comment 25-6:

As part of the socioeconomic impact analysis for the 2016 AQMP, there will be further detailed information on potential economic impacts broken down by sector and geography. CARB has provided the assumptions for the SCAQMD to conduct the analysis of their proposed measures.

Response to Comment 25-7:

Staff agrees that there should not be a competition for the limited existing funding. As such, staff will be working with all interested stakeholders to identify new sources of funding. Please see Responses to Comments 11-1 and 12-2 for further discussion on the incentive programs, and Response to Comment 7-5 regarding TBD measures.

Comment Letter from Western States Petroleum Association (Comment Letter 26)



Western States Petroleum Association
Credible Solutions • Responsive Service • Since 1907

Sue Gornick
Manager, Southern California Region

VIA ELECTRONIC MAIL

August 18, 2016

Dr. Philip Fine
Deputy Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Re: Comments on the Draft 2016 Air Quality Management Plan (AQMP)

Dear Dr. Fine:

Western States Petroleum Association (WSPA) is a non-profit trade association representing twenty-five companies that explore for, produce, refine, transport and market petroleum, petroleum products, natural gas and other energy supplies in California, Arizona, Nevada, Oregon, and Washington. WSPA has been an active participant in air quality planning issues for over 30 years. WSPA-member companies operate petroleum refineries and other facilities in the South Coast Air Basin and thus have a major stake in the Air Quality Management Plan (AQMP) being prepared by the South Coast Air Quality Management District (SCAQMD or District), and any rule developments that might stem from the final AQMP as adopted by the District's Governing Board.

26-1

WSPA appreciates the opportunity to submit these comments on the Draft 2016 Air Quality Management Plan (AQMP) and continues to support the South Coast regional air quality planning process and the successes achieved to date. Over the last two decades, Southern California's industrial facilities (i.e., stationary sources including the region's petroleum refineries) have reduced their emissions by over 70 percent for most criteria pollutants including nitrogen oxides (NO_x) and sulfur oxides (SO_x).

Our general comments are as follows:

1. **The AQMP control strategy should exclude all measures not needed to minimally achieve the region's carrying capacity targets for attainment of the National Ambient Air Quality Standards (NAAQS).**

26-2

As presented in the Draft AQMP,¹ the Staff's proposal includes a large number of control measures which do not appear to be necessary for meeting the AQMP objectives. This situation is possible due to the significant emission reductions projected under the 2016 State Strategy. However, the Draft AQMP includes dozens of additional control measures which have not been shown to be necessary for reaching the region's so-called "carrying capacity." In fact, most of these "extra" measures have no quantified emission benefits yet would impose considerable costs on the Southern California economy.

26-2
Cont'

WSPA provides our comments on the ARB Proposed 2016 State Strategy for the State Implementation Plan in Attachment 1, attached hereto and incorporated herein by reference for your consideration.

2. The AQMP control strategy should prioritize non-regulatory, incentive based approaches to reducing emissions outside the State Strategy. Such incentive based measures should be cost effective and limited to reasonably anticipated funding levels and sources.

To the extent they are needed to demonstrating attainment, WSPA is supportive of the Draft AQMP's inclusion of control measures based on incentives and other non-regulatory approaches intended to accelerate the transition of vehicles, buildings, and industrial facilities to cleaner technologies. Southern California's industrial facilities (i.e., stationary sources including the region's petroleum refineries) have dramatically reduced their emissions by over 70 percent for most criteria pollutants over the last two decades. This includes emissions of NO_x and SO_x. These facilities may not be able to further reduce emissions in a cost effective manner absent some form of incentive.

26-3

WSPA is concerned that these Draft AQMP measures may have gone beyond what might reasonably be able to be funded. AQMD Staff are suggesting the amount of incentive funding needed for these control measures (i.e., \$14 billion over a 15 year period, present value)² that is without precedent. The AQMP needs to demonstrate how this level of funding might actually be accomplished.

3. Proposed Control Measure CMB-05 (Further NO_x Reductions from RECLAIM Assessment) is unreasonable and should be removed from the AQMP.

In December 2015, the AQMD Governing Board approved the single largest adjustment of NO_x RECLAIM since the program began in 1994. When fully implemented, those amendments will remove at least 12 tons per day (tpd) from the NO_x RECLAIM market; a 45% reduction.³ This is on top of the nearly 70% reduction in NO_x emissions achieved under RECLAIM since 1994.

26-4

The 2015 rulemaking, which implemented Control Measure CMB-01 from the 2012 AQMP, proposed market adjustments due to the advancement of NO_x Best Available Retrofit Control

¹ SCAQMD, Draft 2016 AQMP, Table ES-2 (June 2016).

² SCAQMD, Presentation to the 2016 AQMP STMPR, Socioeconomic Session, 28 July 2016.

³ See SCAQMD Rule 2002. Also Governing Board package for 4 December 2015 meeting, Agenda item #30.

(BARCT) for various equipment by establishing RECLAIM Trading Credit (RTC) reduction targets and RTC adjustment factors for year 2016 and beyond. That rulemaking also took “credit” for the fact that certain companies have left Southern California, and made some adjustments for anticipated future growth of industrial sectors covered by the RECLAIM program. The 2015 rulemaking also included an “off-ramp” for electricity generating facilities (EGF) at BACT or BARCT. That last provision, if optioned by qualifying EGFs, would result in additional RTCs being removed from the RECLAIM program above and beyond the 12 tpd market adjustment approved by the Governing Board. And in 2016, AQMD Staff are also developing additional amendments to Rule 2002 which would, if adopted by the Governing Board, remove even more RTCs from the NOx RECLAIM Program in the event of future RECLAIM facility shutdowns.

26-4
Con't

As presented in the Draft AQMP, the proposed control measure purports to address several issues that arose during recent NOx RECLAIM amendments. “These measures listed below would be designed to achieve additional actual and/or SIP creditable emission reductions from the RECLAIM Program and ensure future equivalency with command-and-control regulations.⁴ But as detailed below, all of these “issues” were already addressed in the December 2015 rulemaking or have now been made moot such that there is no factual rationale for the proposed target of 5 tpd of additional creditable emission reductions from the NOx RECLAIM program by 2031.

Specifically, the Draft AQMP suggests the following reasons for this measure:⁵

Issue as Presented: “Assess the need for and the size of the differential between RTC holdings and actual emissions. The size of this unused RTC margin is affected by the possible need for a compliance margin, uncertainties in the growth projections for existing and new businesses, facility and equipment shutdowns, and holdings by investors. A full assessment may allow for an optimization of the size of the margin that could allow for further RTC reductions.”

26-5

During the last Regulation XX rulemaking, it was noted that overall NOx RECLAIM market had, in recent years (i.e., 2011-2013), exhibited an unused RTC margin of 4-6 tpd depending on the year and prevailing economic conditions. In the context that period’s market cap of 26.5 tpd represented 15-25% of the overall NOx RTC market. By its very design, the 2015 rulemaking will have eliminated nearly all of those previously unused RTCs once fully implemented by 2023. As such, we do not believe this represents a valid basis for a future market adjustment.

Issue as Presented: “Consider options for facilities at BACT or BARCT and/or facilities with no allocations (structural buyers) to exit the program and be subject to command and control regulations. The most recent NOx amendment allowed EGFs to voluntarily opt-out of RECLAIM. Such an option could be extended to other facilities, and potentially lead to more AQMP creditable emission reductions given that future non-RECLAIM facilities emissions are projected at actual levels with growth rather than total allocations.”

26-6

⁴ SCAQMD Draft AQMP, Appendix IV, page IV-A-77.

⁵ SCAQMD Draft AQMP, Appendix IV, page IV-A-75 et seq.

The 2015 rulemaking already featured an “off-ramp” for EGFs at BACT or BARCT, and the rulemaking by design would force the remaining RECLAIM facilities to meet the Staff’s BARCT levels (found in Rule 2002) on a programmatic basis. Simply put, the “issue” identified is no longer valid after the 2015 amendments to RECLAIM.

26-6
Cont

Issue as Presented: *“Consider command-and-control regulation overlays to certain RECLAIM facilities. For some RECLAIM facilities a command-and-control overlay may be the best way to reduce NOx emissions while maintaining the required equivalency with command and control.”*

26-7

The 2015 rulemaking by design would force RECLAIM facilities to meet the Staff’s BARCT levels (found in Rule 2002) on a programmatic basis. Those BARCT levels are in many cases equal to or more stringent than current BACT.⁶ The suggested “command-and-control overlays” would fundamentally conflict with Regulation XX program design. And given the 2015 amendments, they would be unlikely to yield material additional, creditable emission reductions.

Issue as Presented: *“Assess facility and equipment shutdowns and the removal of associated RTCs from the market. Under command-and-control rules, shutdown emission credits are heavily discounted to BACT, based on the last 2 years of operation. While there is no discount of credits for a RECLAIM facility or equipment shutdown, the overall RTCs available to RECLAIM facilities have been reduced over time to reflect the advancement of BARCT (i.e., command-and-control equivalency). In some cases, these BARCT levels are equal to, or more stringent than, BACT determinations. However, these credits, if not removed from the program, could reduce the incentive to implement cost-effective controls that would otherwise be required under command-and-control.”*

26-8

As noted above, AQMD Staff are already developing a Proposed Amended Rule 2002 which would, if adopted by the Governing Board, remove additional RTCs from the NOx RECLAIM program in the event of future RECLAIM facility shutdowns. It is impossible to know how many, if any, facilities might shutdown in the future and whether such shutdowns would trigger the removal of additional credits from the RECLAIM market.

Issue as Presented: *“Assessment of whether the cost-effectiveness benefits that the RECLAIM market was intended to provide still exist given the need for all feasible NOx reductions and the potential lack of lower-cost control options.”*

26-9

While such an assessment could be informative, this is not a rationale for further reductions in the NOx RECLAIM market.

Issue as Presented: *“Perform additional or more frequent BARCT assessments and adjust allocations as control technologies improve and are implemented in practice.”*

26-10

⁶ SCAQMD 2016 AQMP, Appendix IV, page IV-A-77. “In some cases, these BARCT levels are equal to, or more stringent than, BACT determinations.”

AQMD is already obligated to perform such assessments under the California Health & Safety Code.⁷ Such assessments would trigger future rulemaking if it was concluded that BARCT was more stringent than the levels presented in Rule 2002. Given the severity of BARCT determinations in the 2015 rulemaking, some of which are already more stringent than BACT, there is no technical basis at this time to suggest that BARCT advancement will be able to yield an additional 35% of NOx emissions from RECLAIM facilities by 2031 (i.e., 5 tpd / 14.5 tpd).

26-10
Cont

Issue as Presented: *“Assess whether more SIP creditable and/or actual emission reductions could be achieved without the RECLAIM program, and if so, explore how the program could be sunset in an orderly and equitable fashion.”*

26-11

This is a policy matter which would need to be considered by the Governing Board. It is not a rationale that supports further proposed reductions in the NOx RECLAIM market.

Issue as Presented: *“Re-examination of the RECLAIM program if RTC prices hit the upper or lower threshold amounts. The current NOx RECLAIM regulation has a lower price threshold of \$200,000 per ton (infinite year block) and upper price thresholds of \$22,500 and \$35,000 per ton (discrete year; annual and 3-month average, respectively). The levels of these thresholds or additional thresholds could be modified commensurate with future BARCT assessments and attainment needs.”*

California’s Health and Safety Code requires an air district to make certain findings when adopting rules and regulations to implement a market-based incentive program, including a determination that:

26-12

- The program will result in an equivalent or greater reduction in emissions at equivalent or less cost compared with current command and control regulations and future air quality measures that would otherwise have been adopted as part of the district’s plan for attainment.
- The program will provide a level of enforcement and monitoring, to ensure compliance with emission reduction requirements, comparable with command and control air quality measures that would otherwise have been adopted by the district for inclusion in the district’s plan for attainment.
- The program will not result in a greater loss of jobs or more significant shifts from higher to lower skilled jobs, on an overall districtwide basis, than that which would exist under command and control air quality measures that would otherwise have been adopted as part of the district’s plan for attainment.
- The program will not result in disproportionate impacts, measured on an aggregate basis, on those stationary sources included in the program compared to other permitted stationary sources in the district’s plan for attainment.⁸

Any reconsideration of price triggers or cost effectiveness thresholds would need to be supported by findings that the program will not result in disproportionate impacts, measured on an

⁷ CH&SC §39616(c).

⁸ CH&SC §39616(c).

aggregate basis, on those facilities included in the RECLAIM program as compared to other permitted stationary sources in the District. We are skeptical that such a finding could be made at this time; the issue does not support further reductions in the NOx RECLAIM market.

26-12
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Issue as Presented: *“Assess the impacts of investors holding RTCs. Investors have historically played an important role in the RECLAIM program. However, their holding of RTCs have posed problems with the trading and identification of reductions because they are not RECLAIM facilities that have an initial allocation or a potential to reduce NOx emissions.”*

California Health & Safety Code specifically provides that RECLAIM “shall achieve emission reductions across a spectrum of sources by allowing for trading of emissions trading units for quantifiable reductions in emissions from a significant number of different sources.”⁹ So this topic would appear to be a policy matter which would need to be considered by the Governing Board and/or State Legislature. Regardless, it is not a rationale which supports further proposed reductions in the NOx RECLAIM market.

26-13

Given the already adopted and proposed changes to the RECLAIM program, the basis presented for proposed Control Measure CMB-05 is fundamentally flawed. It lacks any factual rationale to support the notion that 5 tpd of additional creditable emission reductions could be achieved by 2031. For these reasons, this proposed control measure should be removed from the AQMP. If the district insists on including a RECLAIM control measure in this AQMP, it should be a range since what is included in the AQMP is the minimum commitment to USEPA that must be met. We recommend a range of 0-3 tpd. And further, WSPA believes that any additional adjustment to RECLAIM Trading Credits (RTCs) under the NOx RECLAIM program should be applied equally to all NOx RECLAIM market participants as a proportion of their present RTC holdings consistent with the founding principles of the RECLAIM program.

Lastly, staff estimates that the cost to implement this measure to be 50% higher than the projection for the December 2015 amendments, but there is no basis for that estimate. This figure should be supported with an actual technical basis or completely removed from the document.

4. As a co-benefits measure, proposed Control Measure ECC-01 (Co-Benefit Emission Reductions from GHG Programs, Policies, and Incentives) should not involve any AQMD “enhancements.”

The Draft AQMP presents proposed Control Measure ECC-01 as potentially involving AQMD authority to regulate emissions from stationary sources and that “AQMD will work with other regulatory agencies for program enhancements.”¹⁰ Yet, the Draft AQMP also suggests “Because this control measure relies on other programs, no additional costs other than relatively minor administrative costs are anticipated as a direct result of this control measure.”¹¹ [emphasis added] These positions are contradictory. Since the measure is intended to rely on the

26-14

⁹ California Health & Safety Code 540440.1(a).

¹⁰ SCAQMD Draft AQMP, Appendix IV, page IV-A-25, Implementing Agencies.

¹¹ SCAQMD Draft AQMP, Appendix IV, page IV-A-25, Cost-Effectiveness.

accounting of co-benefits from GHG programs, policies, and incentives, it is not appropriate to consider other “enhancements” or AQMD authority under this measure. The Draft AQMP discussion of ECC-01 must be revised to exclude references to program enhancements or the exercise of AQMD authority.

26-14
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- 5. Proposed Control Measure FUG-01 (Improved Leak Detection and Repair) should be revised to consider the use of optical gas imaging (OGI) technology as a suitable substitute for, not an addition to, conventional LDAR component inspections. This was the intended purpose of "Smart-LDAR" and would help to resolve the inefficient and labor-intensive effort associated with conventional LDAR programs. References to unspecified “new technologies” should be removed from the measure.**

As with prior AQMPs, this Draft AQMP includes a proposed control measure which describes a wide-ranging approach to potentially further reducing VOC emissions from fugitive emission components at petroleum industry facilities and chemical plants. The control measure again focuses on the potential use of optical gas imaging technology (as it did the 2012 and 2007 AQMPs).¹² Optical gas imaging (OGI) technology was borne out of a desire to conduct fugitive emission LDAR programs in a more efficient manner (thus, the term "Smart-LDAR"). Prior AQMPs have specifically recognized the inefficient and labor-intensive effort associated with conventional LDAR programs; however, this concept is not addressed in FUG-01. The control measure should recognize the problem and do something about the inefficiency of existing LDAR programs.

26-15

The control measure lists seven existing AQMD rules for which it is suggested that the requirements could be enhanced, but the nature of the potential enhancements to the individual rules is not explained. So the overall proposed approach remains vague. Mention is made of an OGI pilot program. The control measure needs to provide more information and greater clarity, or, in the alternative, there should be a description of a potential stakeholder process through which a pilot program might be developed.

FUG-01 suggests that OGI might be used to supplement existing LDAR programs. However, clearly the highest and best potential use of the OGI is as a substitute for conventional inspections of components with an organic vapor analyzer. WSPA's overriding concern is that adding OGI to existing requirements is not cost-effective. Replacing LDAR with OGI is more attractive, and there are various possibilities that could be explored (e.g., using OGI for difficult-to-monitor components).

The control measure summary table¹³ identifies potential VOC reductions of 2 tpd by 2023 from an inventory of 7.1 tpd. WSPA believes that the emissions reduction estimate (i.e., >25%) is overly optimistic. We also note that the baseline emissions inventory is considerably different than the figures which were presented in the 2012 AQMP for Control Measure FUG-03. WSPA would like to understand the source of the 7.1 tons/day emissions inventory as well as the basis

¹² SCAQMD 2012 AQMP Control Measure FUG-03 and 2007 AQMP Control Measure FUG-01.

¹³ SCAQMD 2016 AQMP, Appendix IV, page IV-A-80.

for the estimated reductions. We note that the discussion of "Emissions Reduction" provides no basis for the estimated emission reductions.

The cost effectiveness for this measure is presented as \$11,000 per ton of emissions reduced, but there is no basis for that estimate. This figure should be supported with an actual technical basis or completely removed from the document.

Lastly, the proposed measure also suggests exploring the use of "new technologies to detect VOC fugitive emissions in order to supplement existing programs and achieve additional emission reductions." But the Draft AQMP does not explain what those technologies might be, how they would be effective, or how much they might cost and to whom. The measure goes on to discuss two phase implementation without these technologies (or so we inferred). Given the lack of an actual proposal for these new technologies, all references to unspecified "new technologies" should be removed from proposed Control Measure FUG-01.

26-15
Cont

WSPA appreciates the opportunity to submit these comments. We may submit additional comments during this process as the District releases additional 2016 AQMP documents including, but not limited to the second Draft AQMP. We understand all submissions will be given due consideration by the District staff and the Governing Board.

Please contact me with any questions at (310) 808-2146 or sgornick@wspa.org.

Sincerely,



cc: Michael Krause, SCAQMD

Attachment to Comment Letter 26:



Western States Petroleum Association
Credible Solutions • Responsive Service • Since 1907

Thomas A. Umenhofer, CCM, REPA
Vice President

July 18, 2016

Carol Sutkus
Kirsten King Cayabyab
Air Resources Board
1001 I Street
Sacramento, CA 95814

via e-mail at: carol.sutkus@arb.ca.gov
via e-mail at: kirsten.cayabyab@arb.ca.gov

Re: WSPA Comments on ARB Proposed 2016 State Strategy for the State Implementation Plan

Dear Ms. Sutkus and Ms. Cayabyab:

The Western States Petroleum Association (WSPA) is a non-profit trade association representing companies that explore for, produce, refine, transport and market petroleum, petroleum products, natural gas and other energy supplies in California and four other western states. WSPA appreciates the opportunity to provide comments on the Air Resources Board (ARB) proposed 2016 State Strategy for the State Implementation Plan (SIP Strategy) which describes proposed measures to achieve the reductions from the mobile sector and consumer products.

Specifically, WSPA would like to provide feedback to ARB regarding the updated ARB Mobile Source Strategy (MSS), dated May 16, 2016. This document is considered by ARB as a key part ARB's integrated planning effort in the development of the SIP Strategy. Section 10 (Fuels) of the MSS is of particular significance as it applies to diesel and renewable diesel fuels. In Section 10 (pages 153-154) of the MSS, ARB proposes the following:

"ARB would bring to the Board a proposed measure that would require Low-Emission Diesel to comprise a steadily increasing percent of the ARB diesel pool. Due to the magnitude of needed NOx reductions in the South Coast and the large volumes of Low-Emission Diesel needed for full statewide implementation, the proposed measure would be phased-in with a gradual implementation strategy that starts in the South Coast, and subsequently expands statewide.

This standard is flexible and enables multiple fuel types to meet this standard. The specifications of Low-Emission Diesel would require less than one percent aromatics, virtually no sulfur, and a blendstock carbon intensity maximum of 30-60 gCO₂e/MJ. This standard is anticipated to increase consumption of Low-Emission Diesel fuels, including: renewable diesel from biomass, NOx-mitigated biodiesel, renewable natural gas from biomethane, gas to liquid diesel from biomethane, renewable hydrocarbon diesel, and/or co-processed renewable hydrocarbon diesel. This proposed measure would provide NOx benefits predominately from legacy (pre-2010) on-road heavy-duty vehicles, off-road engines, stationary engines, portable engines, marine vessels and locomotives, as well as NOx and Diesel PM benefits in potentially all model year off-road engines, stationary engines, portable engines, marine vessels and locomotives. Interstate vehicles, even those registered out-of-state but operating on ARB diesel blended with Low-Emission Diesel, are also anticipated to provide emission reduction benefits.

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Ms. Sutkus
Ms. Cayabyab
July 18, 2016
Page 2

This standard would complement existing ARB programs that incentivize increased use of renewable fuels as substitutes for conventional gasoline and diesel fuels, and will focus on more completely transitioning the fuel mix away from petroleum based diesel to a cleaner, renewable mix of diesel substitute fuels. Potential diesel substitutes that may be considered include renewable diesel from biomass, NO_x mitigated biodiesel, renewable natural gas from biomethane, gas to liquid diesel from biomethane, renewable hydrocarbon diesel, and/or co-processed renewable hydrocarbon diesel. The proposed measure is anticipated to diversify the fuel pool, as it will incentivize increased production of Low-Emission Diesel fuels. This proposed measure would require incremental progress toward a goal of Low-Emission Diesel comprising 50 percent of the on and off-road diesel sold in State by 2031.”

Specifically, WSPA has several concerns regarding the above proposal that we believe need to be addressed before moving forward with the proposed Low-Emission Diesel program:

Concern 1 - Lack of Clarity in Defining Low-Emissions Diesel

WSPA has several key questions regarding Low-Emissions Diesel (LED). What is the disposition of conventional gas to liquids (GTL) fuels and other like fuels in this strategy? Why add the carbon intensity component to the LED when the LCFS standard and Cap and Trade program already does this? This fuel could provide significant NO_x and PM reductions similar to renewable diesel. This measure should focus on emissions and allow the market to determine how to get there within the confines of the regulations currently in place.

Concern 2 - Questionable Projection Methodology

Unlike the “top-down” approach used in estimating Renewable Diesel (RD) volumes through 2020 in the Low Carbon Fuel Standard (LCFS) and for Advanced Diesel Fuels (ADF), this analysis is based on “bottom-up projections.” Top-down in this context means looking at what RD plants are in operation (or may be in operation in the subject time frame) to arrive at a total renewable diesel available figure to which a “how-much-of-that-is-coming-to-CA” factor is applied. The MSS estimates appear to go all the way to starting with available feedstock that could be converted to RD globally. If this is a correct interpretation of how estimates are calculated, then the estimate could potentially yield an increase in RD into California that is 3 times (or more) higher than the 2020 estimates in ARB’s illustrative scenario case (which may be an overestimate to begin with). WSPA requests that ARB explain the assumptions used to determine the available feedstock.

Concern 3 - Lack of Demonstration of Measurable Benefit

By ARB’s own figures, later model year trucks equipped with NO_x traps and PM filters will constitute more than 90% of the fleet by 2023. In addition, there is another measure in the MSS that drives the engine manufacturers to ever lower exhaust emission targets. With those two key elements in mind, it is not clear what the benefits of the resultant potentially highly-expensive fuel would be. WSPA would like ARB provide a forecast of market share for legacy on-road diesel vehicles in 2025 as well as the projected off-road fleet. How did ARB separate the impact of vehicle technology from the impact of the LED fuel? What is the incremental benefit of the LED fuel over the new technology vehicles?

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Ms. Sutkus
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July 18, 2016
Page 3

Concern 4 - Uncertainty in Demand for Diesel

The ARB proposal suggests that for LED which would create a set of circumstances that do not exist today. To fully analyze this issue, WSPA believes that ARB would need to answer several sets of critical questions:

- a. For example, what are the incremental criteria and GHG emissions resulting from the potentially displaced volume of diesel being exported from California? Does ARB assume that the displaced diesel will be exported or that refinery capacity will be reduced proportionally?
- b. Where does ARB anticipate the additional renewable diesel will come from? Is it produced in-state? What are emissions from this production?
- c. If it is imported into California, where does it come from and how does it get here? What are the emissions from the transportation of the renewable diesel?
- d. What would be the AB 32 Cap & Trade Program implications of the increase in renewable diesel imports? Would this cause emissions leakage and/or require border carbon adjustments?

These are important questions that must be addressed before proceeding with the MSS as it is currently written.

WSPA requests that ARB take an additional look at each of these concerns and provide a response that not only addresses the concerns but provides viable options to eliminate or minimize these concerns. Further, WSPA believes that a better approach needs provided (through consultation with the industry sector) than the broad state-wide measure currently put forward. Obviously, the need for emission reductions is regional (i.e., not state-wide) while the availability of LED will be extremely limited and the costs prohibitively high. The logic of not directing that limited volume only to the areas where the needs are greatest should be examined closely by ARB. This effort could include analysis of the implication of "leakage" into the area of non-LED fuel and out of the area of LED fuel, of potentially bifurcating on-road and off-road diesel supply, and other potential distribution optimization opportunities.

WSPA appreciates ARB's consideration of our comments, and we look forward to your responses. If you have any questions, please contact me at (805) 701-9142 or email tom@wspa.org.

Sincerely,



cc: Richard Corey - ARB
Eddie Chang - ARB
Cathy Reheis-Boyd - WSPA

1415 L Street, Suite 600, Sacramento, California 95814
(805) 701-9142 - Fax: (916) 444-5745
tom@wspa.org - www.wspa.org

Responses to Comment Letter from Western States Petroleum Association (WSPA)
(Comment Letter 26)

Response to Comment 26-1:

Staff appreciates your comments and continuing support for the regional air quality planning process and successes.

Response to Comment 26-2:

See Response to Comment 7-5 regarding unquantified measures.

Response to Comment 26-3:

Staff appreciates the support for the incentive programs and understands the concern with the amount of needed funding. A Financial Incentive Funding Action Plan has been prepared as a companion document to the 2016 AQMP. The plan will provide an analysis of potential funding opportunities and proposed actions to be taken to secure the funding identified in the AQMP. The Financial Incentive Funding Action Plan will also include activities to pursue funding, the schedule, and reporting commitments. Pursuing the funding will require an analysis of authority, formation of a stakeholder working group, and in the case of federal funds, creation of a national collaborative comprised of National Association of Clean Air Agencies (NACAA) for state/local air agencies, private sector members (engine manufacturers, Manufacturers of Emission Controls Association (MECA), trade associations, labor unions, etc.) and non-government organizations (local, state, national). Collaboration within the state will include California Air Pollution Control Officers Association (CAPCOA), CARB, NGOs, private sector supporters, and state/local partnerships.

Response to Comment 26-4:

The RECLAIM control measure ensures compliance with state law that mandates that periodic BARCT assessments be performed for the program. This re-assessment would occur out into the future and well beyond the December 2015 amendments to the program. Potential technologies that were identified in the December 2015 amendments would have further matured and newer technologies can be identified that can result in additional reductions for RECLAIM sources. The AQMP proposes additional serious consideration for an orderly sunset of the RECLAIM program in order to create more regulatory certainty, reduce compliance burdens for facilities, and achieve SIP-creditable emission reductions. Approximately every 10 years, NO_x RECLAIM has reduced RTCs by 8 to 12 tons per day. Given the historical evidence of past NO_x emission reductions coinciding with control technology maturation, it is quite reasonable to assume that an additional 5 ton per day reduction is achievable in the eight years between 2023 and 2031.

Response to Comment 26-5:

The December 2015 amendments to the NO_x RECLAIM program did not eliminate the margin between NO_x emissions and RTC holdings. That is, if BARCT equivalency is implemented as adopted, there would still be a margin. As BARCT advances in the future, there is a need to address the size of the margin again. The size of the margin is not the sole driver for the creation of this control measure. The purpose of the control measure is to seek further reductions from the NO_x RECLAIM program based on a future BARCT

assessments, as required by the California Health and Safety Code, or through an orderly sunset of the program.

Response to Comment 26-6:

The December 2015 amendments allowed EGFs to voluntarily opt out of the RECLAIM program because virtually all of these facilities are already at BARCT or BACT. The same opportunity for other NO_x RECLAIM facilities that are also at BARCT or that are structural buyers will be considered. Facilities that are not at BARCT and rely on the market to purchase RTCs would still be able to function in this type of structure until an orderly transition into command and control regulations can be accomplished, if this avenue is pursued.

Response to Comment 26-7:

NO_x RECLAIM facilities have the option of installing BARCT on all pieces of equipment and/or purchasing RTCs in the open market to offset NO_x emissions. A command and control overlay, could achieve emission reductions for all pieces of equipment that are not at BARCT, which is the case for many facilities in RECLAIM, and could provide additional, creditable emission reductions. Staff agrees that this would modify the current RECLAIM program, but believes it may provide greater certainty to the needed reductions, and would achieve additional reductions beyond the 2015 amendments as BARCT advances in the future.

Response to Comment 26-8:

Amendments to Rule 2002 were adopted in October 2016, which would prevent large sell-offs of RTCs from shutdowns that other facilities could use to prevent the installation of BARCT. This would apply only to complete facility shutdowns for the largest NO_x RTC holders in the RECLAIM program that were issued an initial allocation. Facilities that are subject to the shutdown requirements would be required to surrender only those credits that were issued to them at the beginning of the program. Any credits held above that level would be able to be sold into the market. Staff will continue to consider any appropriate amendments to RECLAIM shutdown provision.

Response to Comment 26-9:

The assessment of the benefits that the RECLAIM program provides given the need for all feasible NO_x reductions and the potential lack of lower-cost control options is necessary because many of these lower-cost control options have been either already implemented or are in the process of being implemented. Further programmatic reductions may result in the convergence of the two approaches (market-based versus command and control) to achieve the same emission reduction goals. This assessment is complementary to the assessment of potential future reductions if RECLAIM remains otherwise unchanged.

Response to Comment 26-10:

The SCAQMD is required by the California Health and Safety Code to perform periodic BARCT assessments. As technologies progress and mature, further reductions may be technically feasible and cost effective for not only already-affected source categories, but for other source categories that were not previously analyzed in the 2015 RECLAIM amendments. Please also see the response to comment 26-4 for the basis for proposing additional BARCT reductions.

Response to Comment 26-11:

The 2015 amendments to the NOx RECLAIM program that were adopted by the Governing Board already provide the opportunity for EGFs to opt-out of the program. Further rulemaking would be required to provide the same opportunity for other RECLAIM facilities that are already at BARCT. Through this control measure, further emission reductions would either be achieved by another programmatic allocation shave, or by a transition into a command and control regulatory structure that can achieve SIP-creditable emission reductions. Either approach would require both a public process and Governing Board approval.

Response to Comment 26-12:

The purpose of the RTC cost thresholds is to alert the Governing Board when the credit price is too low, which signifies an excess of RTCs in the market, or when it is too high, which can signify when there are insufficient RTCs in the market. These market condition thresholds are safeguards that would assure that the market is functioning properly. If any adjustments to these cost thresholds are required, the findings that are referenced in the comment could be made at the time of the rulemaking, if required.

Response to Comment 26-13:

As described in the control measure, quantifiable SIP-creditable emission reductions may be achieved from sources in a command and control regulatory structure, whereas in RECLAIM some of these potential reductions exist in the form of RTCs that are held by investors. SIP-creditable emission reductions are quantifiable with the installation of BARCT on categories of source-specific equipment. The basis for the control measure is in meeting the requirements of state law. Please see the response to comment 26-4. The method and application of the emission reductions (across the board or sector-specific) would be determined at the time of rulemaking. As described in the response to comment 26-4, a transition of the program into a command and control regulatory structure would also effect the SIP-creditable emission reductions. The basis for the cost estimate of this control measure is the costs that were determined for the December 2015 amendments to the NOx RECLAIM program. For the purposes of this control measure, it is assumed that further reductions would be achieved from already controlled equipment and it is reasonable to expect that the cost effectiveness would be higher for a smaller amount of emission reductions. Based on past rulemaking experience, a 50 percent higher cost is reasonable. Despite this, further refinement (increase or decrease of costs) would occur at the time of rulemaking. The technical basis for a final cost effectiveness determination would occur as a result of a subsequent BARCT assessment. Additionally, based on previous BARCT assessments, a 5 ton per day NOx reduction of the current market-based program is a reasonable target.

Response to Comment 26-14:

The word “enhancements” has been removed from ECC-01 (appears once in “Implementing Agency” section) in the Revised Draft Plan.

Response to Comment 26-15:

Optical Gas Imaging tools such as the FLIR Camera have proven to be useful instruments in screening component leaks but still lack the ability to determine mass emission rates from component leaks. The current control measure (FUG-01), looks to utilize remote sensing and other instrumentation to detect and quantify fugitive emission leaks both at the source and at the fence-line. Similar to U.S. EPA's Alternative Work Practice To Detect Leaks From Equipment , staff may consider alternative protocols that

outline equipment specifications, calibration techniques, required performance criteria, procedures for conducting surveys and training requirements for optical gas imaging instrument operators without an accompanying requirement to conduct annual monitoring using EPA Method 21 provided that it can be demonstrated to identify and quantify leaks at an equivalent or better level. The emission reduction estimates are based on early results from a comprehensive measurement campaign aimed to fully characterize technologies that quantify fugitive and stack emissions from large refineries and other important VOC sources in the Basin such as oil and gas production sites.

Cost-effectiveness calculations are based on the use of solar occultation flux technology at a unit capital cost of approximately \$300,000 at 33 sites. The cost estimates include full-time operator, maintenance and electrical costs which have been included in the revised measure.

Comment Letter from U.S. EPA (Comment Letter 27)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

**75 Hawthorne Street
San Francisco, CA 94105-3901**

AUG 19 2016

Dr. Philip Fine
Deputy Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765

Dear Dr. Fine:

We appreciate the opportunity to comment on your draft 2016 Air Quality Management Plan (Draft AQMP), released June 30, 2016. This letter provides general comments on the descriptions of incentive measures in the Draft AQMP. We may provide additional comments on other elements of the Draft AQMP at a later date.

We have preliminarily reviewed the descriptions of 19 voluntary incentive measures in Appendix IV-A of the Draft AQMP (FLX-02, MOB-01 to MOB-14, ECC-02, ECC-03, CMB-01, CMB-02), several on which the Draft AQMP appears to rely for emission reductions. These generalized descriptions do not provide sufficient information for EPA to evaluate the potential for these measures to qualify for state implementation plan (SIP) emission reduction credit. For example, the Draft AQMP does not identify relevant portions of the program guidelines that the District will use to ensure that emission reductions achieved through implementation of the identified programs are quantifiable, surplus, enforceable, and permanent. Additionally, the Draft AQMP does not contain any draft commitments that the State/District will adopt and submit to satisfy Clean Air Act enforceability requirements.

27-1

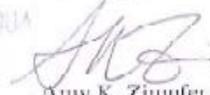
Under longstanding EPA policy, SIP credit may be allowed for a voluntary incentive program only where a state submits enforceable commitments to ensure that the emission reductions necessary to meet Clean Air Act requirements are achieved. Such commitments must be specific enough to be legally and practically enforceable – e.g., by specifying the applicable program implementation criteria (by title, date, chapter and section number), how the state will monitor and report on emission reductions achieved, and how the state will remedy emission reduction shortfalls in a timely manner. Alternatively, states may under certain circumstances submit enforceable commitments to achieve specified amounts of emission reductions from unidentified control measures, as limited components of a comprehensive SIP control strategy.¹

27-2

¹ The EPA has historically accepted enforceable tonnage commitments addressing up to approximately 10 percent of the emission reductions needed for attainment of the national ambient air quality standards. See, e.g., 76 FR 69896 (November 9, 2011).

We look forward to working with you as you further develop the Draft AQMP. If you have questions about these matters, please contact me (415-947-4146) or Idalia Perez (415-972-3248).

Sincerely,



Amy K. Zimpfer, P.E.
Associate Director, Air Division

cc: Sylvia Vanderspek, California Air Resources Board

Responses to Comment Letter from U.S. EPA
(Comment Letter 27)

Response to Comment 27-1:

SCAQMD staff plans to organize working groups to assist in the development of guidelines and ensure the integrity elements of quantifiable, surplus, enforceable and permanent are satisfied. Appendix IV-A provides information regarding the intent for staff to seek approval of a Board Resolution that will demonstrate a federally enforceable commitment being requested by the U.S. EPA. In addition, staff plans to provide technical analysis, funding, resources, outreach, and legal authority to establish the incentive-based measures for SIP approvability.

Response to Comment 27-2:

Staff appreciates the guidance provide by U.S. EPA in the comment including the details necessary to make the incentive measures creditable such as how the program will monitored, how reductions achieved are reported, and how emission reduction shortfalls will be remedied in a timely manner.

Comment Letter from County of Los Angeles Board of Supervisors (Comment Letter 28)



LORI GLASGOW
EXECUTIVE OFFICER

**COUNTY OF LOS ANGELES
BOARD OF SUPERVISORS**

KENNETH HAHN HALL OF ADMINISTRATION
500 WEST TEMPLE STREET, ROOM 383
LOS ANGELES, CALIFORNIA 90012
(213) 974-1411 • FAX (213) 620-6636

August 19, 2016

MEMBERS OF THE BOARD

HILDA L. SOLIS

MARK RIDLEY-THOMAS

SHEILA KUEHL

DON KNABE

MICHAEL D. ANTONOVICH

Mr. Wayne Nastri, Acting Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

From: Office of the Executive Officer	Date: 8/23/2016
To: Phil Fine	
Cy:	
For your action by:	For your info. <input checked="" type="checkbox"/> handling <input checked="" type="checkbox"/>
Default response for:	signature, cc:

Dear Mr. Nastri:

The Los Angeles County Board of Supervisors, in collaboration with the Department of Public Health, strongly urges you to work with the necessary State and Federal agencies to adopt an Air Quality Management Plan (AQMP) that will improve air quality and public health using regulatory control measures based on available resources instead of adopting the current proposal for clean vehicle incentives that predominantly relies on securing billions of dollars in funding that currently does not exist.

28-1

In order to pay for these incentives, the AQMP predicts that the South Coast Air Quality Management District (SCAQMD) will need to secure approximately \$11,000,000,000 to \$14,000,000,000 in funding over a seven to fifteen year period. None of this funding has yet been secured, and securing the approximately \$1,000,000,000 a year needed from the Federal and State governments to provide these financial incentives is by no means a sure bet. The AQMP proposes developing an action plan "as part of the AQMP public adoption process to identify the necessary actions by the District, the region, the State, the Federal government, and other partnerships to ensure the requisite levels of funding are secured as early as possible and sustained through 2031" (AQMP, ES-8).

28-2

In short, the AQMP proposes providing significant financial incentives to polluters to clean up their fleets, from funding that does not yet exist. Should the funding fail to materialize, the AQMP offers no meaningful back up plan, instead focusing on provisions in the Federal Clean Air Act that would allow for falling short of air pollution reduction goals (see AQMP, 4-44 to 4-45). In the meantime, the Basin's residents would remain captive to the region's poor air quality, and the associated negative health impacts. Taking this gamble poses an unacceptable level of risk to Los Angeles County residents, particularly those who are in our most vulnerable communities.

28-3

Mr. Wayne Natri
August 19, 2016
Page 2

The implementation of this plan to improve air quality is critical to improving public health in the County. In principle, the Department of Public Health agrees with the overall goals. One aspect that is lacking is adequate attention to abatement of stationary source odorous emissions that impact health of nearby residents but often do not exceed applicable standards. Such emissions have become a critical issue with regard to recent significant community public health interventions, such as the Allenco Oil field site, the Sunshine Canyon Landfill community, and the Aliso Canyon gas leak disaster. The Health Effects section of the AQMP does not address or acknowledge odor issues, and related health effects from odors or other low-level exposures that emanate from facilities that are closely situated to communities. This is a significant gap in the AQMP. Given the County's recent responses to air emissions causing odor-related health effects, the AQMP should delineate improvements in the way that local, state, and federal agencies can prevent, survey, mitigate, and respond to odors. This issue should also be discussed in Chapter 8, "Beyond Requirements."

28-4

We strongly urge the SCAQMD to work with the necessary State and Federal agencies to adopt an AQMP that will meaningfully improve air quality and public health.

Sincerely,



HILDA L. SOLIS
Chair of the Board
Supervisor, First District



MARK RIDLEY-THOMAS
Supervisor, Second District



SHEILA KUEHL
Supervisor, Third District

Responses to Comment Letter from Los Angeles County Board of Supervisors
(Comment Letter 28)

Response to Comment 28-1:

The 2016 AQMP does propose a number of stringent regulatory measures aimed at reducing NOx and VOC emissions from a variety of stationary and mobile sources. These regulatory measures were established after a thorough analysis of all ozone-emitting sources and available methods and technologies to further reduce emissions. SCAQMD staff is not aware of any additional feasible regulatory measures. Incentive-based approaches are focused on accelerating high-emitting sources to transition to cleaner technologies sooner than would take place under regulations which generally focus on new mobile sources. Also, some sources are beyond the authority of the SCAQMD, thus the incentives are a way to gain emission reductions sooner than natural turnover of vehicles and equipment. Accelerating the deployment of cleaner technologies before future rulemaking is established allows the new technology to be commercially available, achieved in practice, feasible in more applications, cost effective, as well as a publicly acceptable. It should be noted that the Revised Draft 2016 AQMP has modified two incentive-only measures to include a future rulemaking commitments.

The specific sources of funding have yet to be finalized but staff is developing the Financial Incentive Funding Action Plan that maps out the potential opportunities to secure funding. Such funding would be sought on a federal, state and local level.

Response to Comment 28-2:

As noted in Response to Comment 26-3, the Financial Incentive Funding Action Plan will identify proposed actions to secure additional funding.

Response to Comment 28-3:

As part of the revised draft, staff is proposing that a one year period be given to identify actions to achieve additional emission reductions and initiate actions proposed in the Financial Incentive Funding Action Plan to secure funding. Staff will be reporting to the Governing Board on the progress on these activities. If steps are not taken to implement the identified actions or funding incentives are not secured in a timely manner, staff will recommend to the Governing Board to consider rule development within its legal authority or develop other enforceable mechanisms to achieve additional emission reductions.

Response to Comment 28-4:

While odor reduction is not the purpose of the AQMP that demonstrates attainment of the federal air quality standards for criteria pollutants, the SCAQMD takes nuisance concerns seriously. The SCAQMD has a nuisance rule, Rule 402 that *“a person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.”* SCAQMD vigorously enforce this rule through Hearing Board actions, and if necessary, in court. In recent years, staff worked to alleviate odor issues from waste treatment facilities, trash and recycling facilities, and rendering plants through both enforcement actions and rulemaking. Further, Appendix I (*Health Effects*) of the AQMP has been updated to include a discussion of odors.

Comment Letter from Air-Conditioning, Heating, and Refrigeration Institute (Comment Letter 29)



2111 Wilson Boulevard Suite 500 Arlington VA 22201-3001 USA
Phone 703 524 8800 | Fax 703 562 1942
www.ahrinet.org

August 19, 2016

Michael Krause
Planning and Rules Manager
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765-4178

Re: Draft 2016 Air Quality Management Plan

Dear Mr. Krause:

These comments are submitted by the Air-Conditioning, Heating, and Refrigeration Institute (AHRI) in response to the South Coast Air Quality Management District's (AQMD) issuance of the draft 2016 Air Quality Management Plan (AQMP). AHRI is the trade association representing manufacturers of heating, cooling, water heating, and commercial refrigeration equipment. More than 315 members strong, AHRI is an internationally recognized advocate for the industry, and develops standards for and certifies the performance of many of the products manufactured by our members. In North America, the annual output of the HVACR industry is worth more than \$20 billion. In the United States alone, our members employ approximately 130,000 people, and support some 800,000 dealers, contractors and technicians.

We ask that staff consider the following comments regarding CMB-02, Emission Reductions From Commercial And Multiunit Residential Space And Water Heating, as proposed in the draft 2016 AQMP. This control measure mentions several components for achieving additional NOx emission reductions.

The proposal to specify the NOx emission limit for residential water heaters only in terms of ppm appears reasonable, in theory. However, as noted, all manufacturers currently comply with Rule 1121 based on the ng/J of output requirement. Contrary to the explanation in the description of this measure, this was not so much by choice, but rather because in the development of the rule this was presented as the requirement. The equivalent ppm NOx emission limit was provided in the rule only for relative comparison purposes. The premise that higher efficiency models of residential gas water heaters are emitting NOx at higher ppm rate than less efficient models complying with Rule 1121 needs to be evaluated with actual test data to establish whether it is sufficiently valid. A change to a ppm NOx limit may require manufacturers to retest their products. Such a testing burden should not be imposed on manufacturers without a clear determination that NOx emission reductions actually will be achieved. Also, there is an inherent benefit associated with higher efficiency water heaters; they use less energy. This proposal could have an unintended consequence of disincentivizing consumers to purchase higher efficiency water heaters. The statement that "replacement of standards efficiency water heaters with higher efficiency units does not currently result in lower NOx emission" is not substantiated by an actual field data. As much as it is a theoretical supposition, not a statement of fact.

29-1

SCAQMD 2016 AQMP
August 19, 2016
Page 2

The proposal to establish a NOx emission rule for commercial space heating equipment has been under discussion for some time. We are involved with the SCAQMD staff in the development of Rule 1111.1. However, the suggestion that the technology to reduce emissions in residential gas furnaces is transferable to commercial space heating equipment is an oversimplification that no longer should be included in this description. Recent correspondence from AHRI has alerted the SCAQMD to the problems in trying to develop models complying with Rule 1111. As we have noted, notwithstanding significant efforts on all involved parties, there are no residential gas furnaces complying with Rule 1111 available in the district today. There is no reason to believe that whatever solution is developed to resolve the current Rule 1111 situation will be transferable to commercial space heating equipment. The experience of both Rule 1111 and Rule 1121 is that implementing technology-forcing reductions in NOx emissions of gas-fired equipment is a difficult and complex undertaking. Rule 1111.1 should be developed solely on the consideration of the design and operating characteristics of the products covered by the rule. The rule development should not automatically assume that technologies used on products outside the scope of the rule can be applied to commercial space heating equipment.

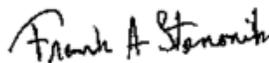
29-2

The measure also proposes to develop a program to incentivize the replacement of older boilers, water heaters and space heaters with new, more efficient, low NOx boilers, water heaters and space heaters or zero-emitting alternative technology. We support the general concept of this incentive program. However, it is critically important that such programs provide the widest range of options to residential and commercial consumers so that they can chose the new, more efficient, lower NOx emitting equipment that best fits their needs. Those needs will be defined by various aspects such as first cost, installation costs, operating costs, the load of the particular installation, equivalency of function (e.g. the recovery rate of gas water heaters is faster than that of electric water heaters), and limitations of any particular option. An incentive program to meet the need of the SCAQMD to reduce NOx emissions will only be successful if it provides options that meet the consumers' needs. Additionally, the actual benefit of NOx emission reductions must be assessed within the context of other SCAQMD and California Energy Commission activities to promote less energy use in residences and commercial buildings. This may be particularly significant when considering the cost/benefit of future NOx emission reduction measures.

29-3

AHRI appreciates the opportunity to provide these comments. If you have any questions regarding these comments, please do not hesitate to contact me.

Respectfully submitted,



Frank A. Stanonik
Chief Technical Advisor

Responses to Comment Letter from Air-Conditioning, Heating, & Refrigeration Institute (AHRI)
(Comment Letter 29)

Response to Comment 29-1:

The emission limits for water heaters and forced air furnaces are in the form of mass emissions per unit of heat provided to heat water or a building (useful heat). It is not in the form of mass per unit of heat produced from the fuel or per unit of heat available in the fuel. This heat output based emission limit allows higher efficiency units to emit NO_x at a higher concentration (ppm) in the exhaust while emitting the same mass (gram or pound) of NO_x per unit of heat absorbed by the water or provided to building space. An earlier examination of test results for units meeting the 40 ng/J limit did not indicate a pattern of high efficiency units emitting less NO_x. Most unit's test results indicate they have emissions close to the rule limit. If the commenter can provide data on products from multiple manufacturers and multiple product lines indicating that NO_x emissions from standard and high efficiency units of the same product line are significantly different, SCAQMD will revise this statement.

Response to Comment 29-2:

Some commercial furnaces use the same technology as residential units. They have a row of tubes or clamshell heat exchangers with individual burners. The commercial units simply have more rows of tubes or clamshells. Other types of commercial units use other types of burners and heat exchangers. Some manufacturers of these other types of units currently advertise NO_x emissions less than 30 ppm. Based on these facts, staff believes reductions are possible from commercial furnaces, but these issues will be thoroughly addressed during the rulemaking process.

Response to Comment 29-3:

Staff appreciates support for incentive programs and does recognize that customer needs and public acceptance play a role in transitioning to new cleaner technologies, and thus in developing incentive program.

Comment Letter from Airlines for America (Comment Letter 30)



Airlines for America[®]

We Connect the World

August 19, 2016

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765-4182
submitted electronically at: <https://onbase-pub.aqmd.gov/sAppNet/UnityForm.aspx?key=UFSessionIDKey>
and emailed to: aqmp@aqmd.gov

Re: Comments on Draft 2016 Air Quality Management Plan

To Whom It May Concern:

On behalf of our members, Airlines for America[®] ("A4A")¹ thanks the South Coast Air Quality Management District ("SCAQMD" or "District") for providing this opportunity to comment on its Draft 2016 Air Quality Management Plan ("Draft 2016 AQMP"). We note from the outset that the Draft 2016 AQMP shares many elements and overlaps considerably with the State's Draft Sustainable Freight Action Plan ("Draft Action Plan") and – in particular – Proposed 2016 State Strategy for the State Implementation Plan ("State SIP Strategy"). As such we incorporate our comments on those documents by reference.²

As noted in both of those sets of comments, A4A and its member airlines have a very strong record of continually improving environmental performance while increasing our considerable contributions to the national and California economies. This record includes a long history of working with regulatory authorities at the international, national, state and local level to pursue policies and actions that protect public health and the environment while maintaining economic vitality and growth. We welcomed the approach adopted in both the Draft Action Plan and the State SIP Strategy, which envisioned improving and protecting public health and preserving and enhancing the California and local economies as co-equal imperatives. Similarly, we fully support the District's effort to develop its 2016 AQMP to attain compliance with National Ambient Air Quality Standards ("NAAQS") and its overall objective "[t]o ensure air quality goals will be met while maximizing benefits and minimizing adverse impacts to the regional economy."³ However, just as we identified a number of significant concerns with the Draft Action Plan and State SIP Strategy, we have a number of concerns about the Draft 2016 AQMP.

30-1

¹ A4A is the principal trade and service organization of the U.S. airline industry. A4A's members are: Alaska Airlines, Inc.; American Airlines Group; Atlas Air, Inc.; Federal Express Corporation; Hawaiian Airlines; JetBlue Airways Corp.; Southwest Airlines Co.; United Continental Holdings, Inc.; and United Parcel Service Co.; Air Canada, Inc. is an associate member.

² Comments of Airlines for America on the Draft Action Plan, submitted July 6, 2016, electronically at www.casustainableflight.org; Comments of Airlines for America on the Proposed SIP Strategy submitted July 18, 2016, electronically at www.arb.ca.gov/lispub/comm/bdist.php.

³ Draft 2016 AQMP at ES-4.

Airlines for America Comments
 Draft 2016 AQMP
 August 19, 2016 - 2

Introduction

We are proud of our industry's exemplary record of simultaneous environmental and economic achievement, which is perhaps best reflected in U.S. Bureau of Transportation Statistics data confirming that system-wide (including domestic and international operations) U.S. airlines burned 6 percent less jet fuel in 2015 than in 2000, even though they carried 24 percent more passengers and cargo on a revenue-ton-mile basis. The most recent data available from the U.S. Environmental Protection Agency shows that less than two percent of domestic greenhouse gas ("GHG") emissions is attributable to commercial aviation and the sector exhibits much lower growth from 1990 levels (5%) – and from a much smaller base – compared to the transportation sector (17%) and on-road sources in particular (24%).⁴ At the same time, aviation drives about 5% of gross domestic product both nationally and in California, with commercial aviation accounting for the vast majority of this activity in the State, providing 856,000 jobs and over \$112 billion in economic activity.⁵

U.S. airlines have achieved this level of simultaneous economic and environmental performance because we have relentlessly pursued and implemented technology, operational and infrastructure measures to minimize our environmental impacts. For example, A4A and our members have committed the time and resources needed to support the development of economically reasonable, technologically feasible international standards for aircraft engines and aircraft governing noise, NOx, PM, and CO2, through the International Civil Aviation Organization / Committee on Aviation Environmental Protection ("ICAO/CAEP"). The District has recognized that, as a result of the successive, increasingly stringent NOx standards developed by ICAO/CAEP, aircraft engines produced today must be about 50% cleaner than under the initial standard adopted in 1997.⁶ A4A also has been instrumental in a global aviation coalition that has established specific, ambitious goals for reducing CO2 emissions from international aviation, including achieving carbon-neutral growth from 2020 onward. As a founding member of the Commercial Aviation Alternative Fuels Initiative[®] ("CAAFI"), we have provided key support for the development of low-carbon, low-PM⁷ sustainable alternative jet fuel, which already is being produced in California and fueling flights from Los Angeles International Airport ("LAX").⁸ With respect to airport ground support equipment ("GSE"), even despite our view that the State lacks the authority to regulate in this area we nonetheless cooperated with the State as it developed a suite of emissions regulations applicable to GSE (as well as other engine types), including its In-Use Off-Road Diesel ("ORD") regulation, the Airborne Toxic Control Measure for Diesel Particulate Matter from Portable Engines ("PE-ATCM") and related Statewide Portable Equipment Registration Program ("PERP") rule, and Off-Road Large-Spark Ignition ("LSI") regulation.

30-2

⁴ See Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014 (April 2016), Table A-115.

⁵ *The Economic Impact of Civil Aviation on the U.S. Economy – Economic Impact of Civil Aviation by State* (January 2015) at 23.

⁶ *Preliminary Draft of the 2016 AQMP SCAQMD Mobile Source Measures* (April 14, 2016).

⁷ Alternative jet fuel has a greater than 50% reduction in PM emissions compared to conventional jet fuel. See <http://www.virent.com/news/virent-bio-jet-provides-more-than-50-reduction-in-particulate-matter-emissions/>

⁸ United Airlines has begun using renewable jet fuel at LAX and has an agreement with AltAir Fuels for the purchase of up to 15 million gallons over a three-year period. In addition, FedEx and Southwest Airlines have also each signed agreements with Red Rock Biofuels to purchase 3 million gallons per year of renewable jet fuel for use in California beginning in 2017.

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More details about our economic and environmental record and various efforts and activities that have enabled our achievements are presented in our Draft Action Plan and State SIP Strategy comments. Here we reemphasize that we are committed to building on our strong environmental record and recognize that continued progress from all sectors is needed to meet the concurrent imperatives to reduce emissions while preserving economic growth and vitality. It is in this spirit that we present these comments and respectfully request the District to consider them as it refines the Draft 2016 AQMP.

30-2
Con't

Prefatory Note on Scope and Purpose of These Comments

Before presenting our comments, we note that they do not (and are not intended to) address each and every proposed action or program identified in the Draft 2016 AQMP that may affect aircraft, GSE or other sources of interest to airlines. While these comments may repeat or emphasize points already made in our Draft Action Plan and State SIP Strategy, we intend to direct comments here to issues raised for the first time and/or brought into further focus by the Draft 2016 AQMP. Accordingly, we underscore that we have incorporated our Draft Action Plan and State SIP Strategy comments by reference and ask the District to consider the information and suggestions presented there as they relate to the Draft 2106 AQMP.

In addition, we also emphasize that these comments (inclusive of those incorporated by reference) are intended to assist the District as it works to refine the document and are not intended to constitute a comprehensive or final response to any specific policy, project, action or measure identified in the Draft 2016 AQMP. In particular, any actions that will need to be adopted and implemented by State or Federal agencies will be subject to full notice and comment requirements under applicable law. Similarly, measures to be defined, proposed or adopted in the future by the District also will be subject to such requirements. Under proposed measure "MOB-04: Emissions Reductions at Commercial Airports," for example, the District would "convene a working group" of stakeholders to assist the District in developing as yet undefined "mechanisms to implement this measure," which could include as yet undefined "regulation." Clearly, before any such "mechanism" could be approved or implemented the District would need to formally propose the mechanism and provide full opportunity for stakeholders to comment. Accordingly, A4A and our members expressly reserve any and all rights to comment on any regulatory measure, policy or other "mechanism" identified in the document.

30-3

Comments

Emissions Inventories

An accurate and transparent emissions inventory is perhaps most fundamental to deriving a viable strategy for reducing emissions. In our State SIP Strategy comments we expressed concern regarding the lack of clarity on the basis for the estimates (both historical and future) in the inventory of emissions that may be attributed to the aviation sector. Part of our concern was that the emissions reductions the State expected to be derived from "further deployment of cleaner technologies" with respect to "aircraft" were "based on current growth forecasts, which are undergoing review"⁹ to which we do not yet have access. More detail, including underlying growth factors used to project future expected emissions is provided in the Draft 2016 AQMP

30-4

⁹ State SIP Strategy at 25, note to Table 4.

Airlines for America Comments
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and we appreciate the efforts of SCAQMD to informally discuss the methodology and data used to derive the Draft 2016 AQMP inventories.

Still, we do not have clarity regarding the data and methodologies used to develop future inventories (e.g., the assumptions used regarding fleet turnover and penetration of cleaner technologies into the fleet) and how they relate to those used to estimate possible future emissions reductions. Most glaringly, while the State SIP Strategy indicates that measures implemented by the California Air Resources Board ("CARB") could reduce NOx emissions from aircraft in the District by 17 tons-per-day ("tpd") in 2023,¹⁰ this value is more than the total of 15.52 tpd NOx emissions the District projects will be emitted by aircraft in 2023.¹¹ It is obviously impossible to reduce emissions from any source by more than 100%. This underscores the need for both the State and the District to provide more robust information regarding the derivation of the emission inventories and expected results from various potential actions identified in both the State SIP Strategy and the Draft 2016 AQMP. Without this information it is very difficult, if not impossible, to understand the viability of the inventories and comment meaningfully on the control strategy outlined in the Draft 2016. Certainly, before any action or initiative targeting sources of interest to our industry goes forward, the District will need to provide a more transparent, detailed explanation of its conclusions regarding existing and projected emissions levels and the emissions reductions any particular action or initiative is expected to achieve.

30-4
 Cont'

"Fair-Share" Approach

The District has identified a "fair-share" strategy as one of the primary objectives of the Draft 2016 AQMP. As we understand this strategy, it effectively assigns a proportional amount of emissions reductions to particular sources equivalent to that needed Districtwide to achieve the NAAQS. In short, the District projects that NOx emissions must be reduced 43% below the projected 265 tpd (to 150 tpd) in 2023 and 55% below the projected 224 tpd (to 100 tpd) in 2031 – as result, the "fair-share" reductions targeted under the Draft 2016 AQMP for particular sources are 43% and 55% below the projected level of emissions in 2023 and 2031 respectively.

30-5

While we understand the appeal of this approach as a kind of targeting or benchmarking exercise, it is in our view an inappropriate means of formulating specific policies, actions or other measures that should be pursued to achieve emissions reductions needed to achieve the NAAQS. Most importantly, the approach arbitrarily assigns emissions reductions to be expected from a particular source or class of sources without regard to the state of technology development and deployment or cost-effectiveness of measures relative to other sources. Such considerations are critical to development of any credible set of emission reduction policies and/or measures.¹² Again, before any action or initiative targeting sources of interest to our industry goes forward, the District will need to provide a more transparent, detailed explanation of the basis for concluding that technologically feasible, cost-effective measures exist.

¹⁰ State SIP Strategy, Table 4.

¹¹ Draft 2016 AQMP, Appendix III, 2023 Summer Planning Emissions by Source Category in South Coast Air Basin (Tons/Day).

¹² There also is some concern that there is some incentive to conclude emissions from sources that are not subject to District jurisdiction are large and thereby unjustifiably reduce the burden for reducing emissions borne by such sources.

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Need to Recognize Limits on State and Local Authority to Regulate in the Aviation Sector

In our comments on the Draft Action Plan and the State SIP Strategy, we emphasized that it is absolutely essential that the State and its political subdivisions respect under that federal law they lack authority to regulate aircraft, aircraft engines and aviation fuels and face strict limitations on their authority to regulate the aviation sector generally. We will not repeat the more extensive legal discussion presented in our Draft Action Plan and State SIP Strategy comments here. It is important to understand, however, that the U.S. Congress has enacted federal aviation laws establishing these limits in recognition that commercial aviation safety and the efficiency of the National Airspace System depends on the application of a consistent set of regulatory requirements by a primary federal agency – the Federal Aviation Administration – with the necessary expertise and capability to develop and administer those requirements. This has made the development of an extremely safe aviation system that contributes enormously to local, regional and national economic prosperity possible. As such, providing "authority to the state or SCAQMD" to supplant the "jurisdiction of the federal government" over aircraft is a counterproductive idea that we oppose.¹³ We also note that in previous comments we have questioned in the strongest possible terms the viability of "[p]artnering with airports to incentivize cleaner aircraft to come to California airports," a proposal that also is referenced in the Draft 2016 AQMP.¹⁴ While phrased in terms of "incentives," the proposal actually appears to contemplate disincentives. In this context, we highlight the reference to "mitigation fees" that appears in the description of Control Measure MOB-04 in District's *Initial Study for the Draft Program Environmental Impact Report for: 2016 [AQMP]* ("Initial Study").¹⁵ This is the type of "incentive" that EPA itself has determined is "not reasonably available" to States¹⁶ and airports have no authority to impose. Similarly, while it is true that "[a]irlines are constantly evaluating ways to improve passenger transportation and overall system efficiencies" and that "[s]uch strategies have the potential to further reduce criteria pollutants,"¹⁷ we are very concerned by the implication that such strategies could be transformed into regulatory mandates or otherwise implemented by the State, District or other political subdivision of the State, including airport authorities. As we indicated to the State, we would oppose these types of initiatives and we also urge the District to focus instead on affirmative partnerships and positive incentives that would support the development of cleaner, more efficient aircraft and aircraft engines and their deployment into the fleet.

30-6

We do understand that the Control Measure MOB-04 is intentionally amorphous and the District will depend on input from a "working group" comprised of stakeholders to develop viable "mechanisms to implement this measure." We will gladly devote the resources necessary to participate in that working group.

Positive Incentives

We applaud the District for recognizing that significant funding will be needed to achieve a level of penetration of new, cleaner technologies into mobile sources if it is to achieve the level of emissions reductions it anticipates will be necessary to meet the NAAQS. We support positive "incentive programs" as a tool to achieve needed reductions as long as they are structured to ensure that they do not circumvent the strict limits on the authority of the State and its political

30-7

¹³ Draft 2016 AQMP at ES-5.

¹⁴ Draft 2016 AQMP at 4-33.

¹⁵ Initial Study at A-7.

¹⁶ See, 66 Fed. Reg. 57160, 57189 (Nov. 11, 2001).

¹⁷ Draft 2016 AQMP at UV-A-128.

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subdivisions. We will look forward to working with the District to identify viable funding mechanisms that could have a positive impact on emissions from sources of interest to our industry.

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CONCLUSION

We appreciate the opportunity to comment on this Draft 2016 AQMP. We continue to strive to improve our environmental performance and contribute to the prosperity of California and its residents and, in that spirit, look forward to conferring with the District as it refines and finalizes the Draft 2016 AQMP.

Sincerely yours,



Timothy A. Pohle
Senior Managing Director, Environmental Affairs

Responses to Comment Letter from Airlines for America
(Comment Letter 30)

Response to Comment 30-1:

Staff appreciates the support for the development of the Plan and participating in the public process.

Response to Comment 30-2:

Information regarding the U.S. airline industry is duly noted.

Response to Comment 30-3:

The measures and strategy provided in the Plan are broad in nature and some of them warrant further work to determine technical feasibility or achievable emission reductions. Staff recognizes that future decisions would be vetted through working groups and workshops providing the stakeholders and interested parties with opportunities to participate, review and comment. Staff would not limit comments on these concepts in the Plan to just this period of time.

Response to Comment 30-4:

The emissions inventory is updated as the AQMP is developed and new information is provided. For example, after the release of the Draft 2016 AQMP in June, we revised aircraft emissions, as we received newer data reflecting SCAG's newest growth forecast. Staff is open to work to improve the emissions inventory so the most accurate data is included in the Final AQMP and submitted to U.S. EPA as part of the Plan in compliance with the Clean Air Act requirements.

There was a typo on the CARB 2016 SIP strategy document. The 2023 emission reductions associated with aircraft category is 11 TPD, not 17 TPD. This is reflected in the draft final version of the AQMP.

Response to Comment 30-5:

The SCAQMD, CARB and U.S. EPA recognize the need for emission reductions from local, state and federal sources. As such, a "fair share" of reductions needs to take place. The percent NOx emission reductions needed to meet the 8-hour ozone standards by 2023 and 2031 at 45 and 55 percent, respectively, would be a guide although not a definitive endpoint. As rightfully noted by the commenter, other factors such as technology development or cost-effectiveness, needs to be considered. Staff did take the effort to study the proposals in the control strategy to be sure the measures could be feasibly implemented and within an acceptable cost effectiveness range. As a result, it is not expected that each and every source category can reduce emission by the exact same percentage. In some cases, more technical evaluation will need to take place, and thus reductions are deemed "to be determined" and are not committed to in the SIP. Incentives could assist those measures whereby it is not yet cost effective to transition to cleaner technologies, but financial support will help ensure it is cost-effective for the user to operate cleaner equipment.

Response to Comment 30-6:

Staff appreciates the comments regarding authority. Staff believes that working with A4A and airport authorities, we can identify and quantify additional emission reductions from existing actions and future

actions that are being implemented to improve operational efficiencies in aircraft operations (being taken by individual airlines) and by airport authorities. Staff does not have any preconceived concepts for incentives and such concepts will be identified and developed through a public process. We welcome A4A's participation in the process.

Response to Comment 30-7:

Staff appreciates support for incentive programs and is developing the Financial Incentive Funding Action Plan that maps out the potential opportunities to ensure the proposals secure funding. Such funding will be sought on a federal, state and local level.

Comment Letter from Association of American Railroads (Comment Letter 31)



ASSOCIATION OF AMERICAN RAILROADS
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August 19, 2016

Michael Krause
SCAQMD Headquarters
21865 Copley Drive
Diamond Bar, CA 91765

SUBMITTED VIA EMAIL

RE: Railroad Comments on SCAQMD Draft AQMP – Measure MOB-02 [Emission Reductions at Rail Yards and Intermodal Facilities]

The Association of American Railroads (“AAR”) and its members appreciate the opportunity to provide initial comments on draft Measure MOB-02 [Emission Reductions at Rail Yards and Intermodal Facilities] of the South Coast Air Quality Management District’s (“District”) Draft Air Quality Management Plan (“Draft AQMP”). AAR has several members that operate in California; however, all AAR members have an interest in discussions that involve locomotive idling measures.¹

AAR and its members have worked with state and federal regulators to reach meaningful and carefully considered resolutions to environmental concerns in California and the nation. Over the last two decades, AAR and its members made significant equipment investments in California and voluntarily agreed to enforceable measures that were effective in significantly reducing diesel particulate matter and NOx emissions from locomotives and other rail operations in the state and particularly in the District. With that context in mind, AAR provides the input below on draft Measure MOB-02.

31-1

¹ The Association of American Railroads (“AAR”) is a national, non-profit trade association that represents the Nation’s major freight railroads. AAR’s membership includes freight railroads that operate 83 percent of the line-haul mileage, employ 95 percent of the workers, and account for 97 percent of the freight revenues of all railroads in the United States. AAR’s membership also includes passenger railroads that operate intercity passenger trains and provide commuter rail service. AAR is the Nation’s leading railroad policy, research, standard setting, and technology organization. AAR and its members are committed to operating the safest, most efficient, cost-effective, and environmentally sound rail transportation system in the world.

AAR Comments on Measure MOB-02

August 19, 2016

Page 2 of 3

At its core, draft Measure MOB-02 impermissibly seeks to implement the District's 2006 anti-idling rules encompassed in Rules 3501 and 3502 (collectively, "3500 Rules"). Yet, on April 30, 2007, the United States District Court for the Central District of California ruled that the 3500 Rules were preempted by the Interstate Commerce Commission Termination Act ("ICCTA") and that the District even lacked authority under state law to promulgate the 3500 Rules.² As a result, on May 17, 2007, the U.S. District Court permanently enjoined the District from implementing or enforcing the 3500 Rules:

[T]he District, its Governing Board, and their board members, officers, agents, employees, attorneys and all others acting in concert or participation with them, are hereby *permanently enjoined from implementing or enforcing any provision of Rules 3501, 3502 or 3503.*³

31-2

A true and correct copy of the permanent injunction is attached hereto as Exhibit A for your record.

On September 15, 2010, the Ninth Circuit Court of Appeals upheld the permanent injunction, affirming the District Court's ruling on the basis of ICCTA preemption.⁴ Presently, the permanent injunction remains in effect. The Draft AQMP acknowledges this fact, noting that a "federal District Court decision prevents these rules from being implemented." The District should therefore remove Measure MOB-02 from the Draft AQMP.

Furthermore, the 3500 Rules remain preempted by ICCTA even though the District submitted Rules 3501 and 3502 (but not 3503) to the California Air Resources Board ("ARB") for approval and forwarding to EPA as a potential State Implementation Plan ("SIP") revision. On December 29, 2014, the United States Surface Transportation Board ("STB") opined that even if incorporated into the SIP, the 3500 Rules would be preempted by ICCTA. STB explained that:

"[A]ctions taken and regulations enacted under federal environmental statutes or other federal statutes may directly conflict with the purposes and regulatory scheme under the Interstate Commerce Act. When such a conflict occurs, the [STB] or a court must determine whether the two federal statutes and their applicable regulatory regimes can be harmonized. [Citations omitted.] ... [I]f EPA were to approve the Rules as part of California's SIP, it appears, based on the current record, that the Rules *likely would be preempted* by [ICCTA] § 10501(B) *even under the harmonization standard* (emphasis added)."⁵

31-3

² *Ass'n of Am. R.R. v. S. Coast Air Quality Mgmt. Dist.*, 2007 U.S. Dist. LEXIS 65685 at *26 (C.D. Cal. 2007).

³ *Ass'n of Am. R.R. v. S. Coast Air Quality Mgmt. Dist.*, No. CV06-1416, Document 193 (C.D. Cal. May 17, 2007) (judgment granting permanent injunction).

⁴ *Ass'n of Am. R.R. v. S. Coast Air Quality Mgmt. Dist.*, 622 F.3d 1094, 1098 (9th Cir. 2010).

⁵ *Id.* At p. 8 (emphasis added)

AAR Comments on Measure MOB-02
August 19, 2016
Page 3 of 3

A true and correct copy of STB's 2014 Decision is attached hereto as Exhibit B. Thus, even if EPA approves the SIP revision at some point in the future, the approval will not automatically eliminate ICCTA preemption. Of course, the possible inclusion of the 3500 Rules in an approved SIP would not affect the status of the permanent injunction, which will remain in effect unless and until it is lifted by the U.S. District Court.

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For the foregoing reasons, Measure MOB-02 has no legal basis and should not be included in the Draft AQMP. AAR therefore requests that the District remove Measure MOB-02 from the Draft AQMP. AAR and its members reserve the right to provide further legal, technical, and policy comments on the next draft of the AQMP and CEQA documents.

Sincerely,



Evelyn R. Nackman

Attachments:

- 1) Exhibit A - Permanent Injunction
- 2) Exhibit B - 2014 STB Decision



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August 19, 2016

Michael Krause
SCAQMD Headquarters
21865 Copley Drive
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SUBMITTED VIA EMAIL

RE: AAR Comments on Facility Targets in MOB-02

The Association of American Railroads (AAR) and its member companies appreciate the opportunity to comment on the South Coast Air Quality Management District's ("District") Draft 2016 Air Quality Management Plan ("Draft AQMP").

Measure MOB-02 in the Draft AQMP calls for the District to establish "emission reduction targets" for rail yards. The District lacks authority to establish emission reduction targets for rail yards. Moreover, the Draft AQMP has failed to demonstrate that facility caps will not have a chilling effect on job growth and lead to increased vehicle miles traveled (VMT) and emissions, as well as increase the cost of rail transportation. Consequently, all references to facility targets should be removed from the next draft of the AQMP. The AAR also endorses the comments submitted by BizFed and CCEEB.

31-4

We appreciated the opportunity to engage with District staff through the AQMP Advisory Group and we look forward to our continued partnership.

Sincerely,

Evelyn R. Nackman

Responses to Comment Letter from Association of America Railroads
(Comment Letter 31)

Response to Comment 31-1:

Staff appreciates the support for the development of the Plan and participating in the public process.

Response to Comment 31-2:

Staff is revising the write-up on MOB-02 to limit the discussion of Rules 3501 and 3502 to the background and regulatory history sections. Please see Draft Final 2016 AQMP Appendix IV-A at pages IV-A-133–IV-A-137. The proposed implementation approach for MOB-02 is a collaborative approach to identify actions, which may be voluntary or regulatory in nature that could potentially result in additional emission reductions. The actions can be at the local, state, or federal level.

MOB-02 does not seek to impermissibly implement the District’s 2006 anti-idling rules encompassed in Rules 3501 and 3502, as the commenter suggests. Rather, MOB-02 seeks to assess and identify potential actions to further reduce emissions associated with mobile sources operating in and out of rail and intermodal facilities. The identified actions can be voluntary or regulatory or other enforceable mechanisms adopted by local, state, or federal governmental agencies. The description of the draft measure notes that “[i]f emission reductions are to be included in the SIP, enforceable commitments to ensure that the emissions are permanent will need to be made and may be in the form of a regulation adopted by the SCAQMD within its legal authority or by other enforceable mechanisms.” AQMP 4-28. The District acknowledges that a federal District Court decision prevents Rules 3501, 3502, and 3503 from being implemented until they become federally enforceable through inclusion in the SIP and the district court lifts the injunction. However, the District disagrees that the injunction prevents the District from including MOB-02 – which seeks to assist in implementing the State SIP Strategy “Further Deployment of Clean Technologies” measures related to on-road heavy-duty vehicles, off-road equipment, and federal sources that operate in and out of railyards and intermodal yards – in the AQMP.

Response to Comment 31-3:

As the commenter notes, the District has submitted Rule 3501 and 3502 to CARB for approval and forwarding to U.S. EPA as a potential SIP revision. Shortly after the rules were adopted, the railroads challenged the District’s adoption of the rules and on appeal, the Ninth Circuit upheld the lower court’s injunction and declined to harmonize ICCTA and the CAA. However, the court reasoned that because the 3500 rules had not yet been approved by U.S. EPA for inclusion into the SIP and did not have the force and effect of federal law that would require harmonization, “to the extent that state and local agencies promulgate U.S. EPA-approved statewide plans under federal environmental laws (such as statewide implementation plans under the Clean Air Act), ICCTA generally does not preempt those regulations because it is possible to harmonize ICCTA with those federally recognized regulations...” *Ass’n of American Railroads v. SCAQMD*, 622 F.3d 1094, 1098 (9th Cir. 2010). Heeding the court’s advice, the District submitted the rules to CARB. The railroads sought an order holding the District in contempt for allegedly violating the injunction but the court rejected the motion, citing the railroads’ own arguments before the Ninth Circuit that the proper course of action was for the District to submit the rules for inclusion in the SIP, where they and the Clean Air Act could be harmonized with ICCTA.

While the Surface Transportation Board later denied U.S. EPA’s request to issue a declaratory order regarding whether the 3500 Rules, if included in the SIP, would be preempted by ICCTA, it provided an

opinion, as “guidance”, for further proceedings. As the commenter noted, the guidance concluded that it was “likely” that the rules would be considered preempted once included in the SIP. Unfortunately, STB issued this “non-decision” in a manner which prevented the District from challenging it in court, because STB took no judicially-reviewable final action. Yet at the same time, its words are being used against the District as though an actual decision had been reached. The District believes the STB’s “guidance” is legally erroneous and has continued to request that U.S. EPA approve Rules 3501 and 3502 into the SIP. The District does not dispute the commenter’s statement that even if U.S. EPA approves the 3500 rules into the SIP in the future, it will not “automatically eliminate ICCTA preemption”, as ICCTA and the Clean Air Act will have to be harmonized and upheld to the extent possible. The District also does not dispute that the permanent injunction will remain in effect until it is lifted by the U.S. District Court.

However, for the reasons noted in the response above, the District does not believe that MOB-02 has no legal basis. For that reason, the District is not excluding it from the AQMP.

Response to Comment 31-4:

Staff is revising the write-up on MOB-02 to clarify its intent to help implement the State Mobile Source Strategy "Further Deployment of Cleaner Technologies" measures. Staff will consider the economic impacts of any proposed regulations through the working group process and the socioeconomic impact assessment. Staff will also consider other enforceable mechanisms such as agreements with affected stakeholders.

Comment Letter from Building Industry of Southern California, Inc. (Comment Letter 32)



Building Industry Association of Southern California, Inc.

August 19, 2016

Dr. Philip Fine
Deputy Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 92765

RE: Draft 2016 Air Quality Management Plan Comments

Dear Dr. Fine:

The Building Industry of Southern California, Inc. (BIASC) is pleased to provide the following comments to the Draft 2016 AQMP in continuing collaboration with the SCAQMD to produce a final plan which will both serve the goals of the District in a productive and cost effective approach, and serve the constituency and stakeholders of the SCAQMD region, through improved air quality, health benefits and economic opportunity.

The Building Industry Association of Southern California, Inc. (BIASC) is a regional trade association that represents more than 1,100 member companies within a six county region and is comprised of Chapters in Orange, Los Angeles/Ventura, Riverside/Imperial and San Bernardino counties. Together, BIASC's members build most of the new home communities throughout the same six-county region.

This AQMP will certainly be pivotal in reaching the federal attainment goals for both PM 2.5 and moving the ball forward towards ultimate Attainment status for the south coast basin. The current Draft AQMP has a number of measures which have been included into the District's attainment strategy and calculations and as such, are intended to be accountable in the State Implementation Plan (SIP). Additionally, the Draft AQMP contains a number of measures not yet determined to be viable and potential emission reductions from the measures have not be quantified and are not included in the attainment strategy. These "To Be Determined" (TBD) measures are numerous and represent a significant unknown element to the 2016 Draft AQMP. It is our hope that these TBD measures will be treated as items for further study rather than "placeholders" for intended future rulemakings.

32-1

32-2

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An Affiliate of the National Association of Home Builders and the California Building Industry Association

Baldy View
LA/Ventura
Orange County
Riverside

EGM-01: Emission Reduction from New Development and Redevelopment Projects:

BIASC along with several coalition partners provided earlier comments to the EGM-1 control measure description which AQMD staff largely incorporated into this current Draft, for which we are appreciative. We look forward to continuing collaboration on the final Plan as well as in the implementation of the AQMP beginning in 2017.

While this measure is currently not included in the attainment strategy and emission reduction calculations, we remain aware of the intention to continue to explore potential application of an indirect source rule (ISR), with the SJVAPCD rule 9510 as a primary comparative value.

Affordability is a major contributor to the increasing critical housing shortage in southern California. Regulatory efforts ranging from the Federal, State and Regional levels are often disjointed, redundant and counter-productive, leading to inordinate cost impacts to new home construction. BIASC notes that several layers of regulatory structures exists that addresses AQ concerns including the recently adopted Southern California Association of Governments (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) which provides a primary template for integrating land use and transportation planning region wide, while reducing Green-House-Gas (GHG) emissions though intended reduction in vehicle trips. The California Environmental Quality Act (CEQA) also provides a comprehensive environmental analysis for AQ, including GHG analysis. BIASC opposes redundant and overlapping regulatory efforts as major contributors to increasing the cost of housing.

32-3

BIASC opposed the earlier AQMD measure PR-2301 on both jurisdictional grounds as well as infringement to local land use control authority. While we remain opposed to similar rule development on the same grounds, we are committed to close collaboration with SCAQMD to explore all options including technologies, BMP's and other innovations to move the ball forward towards eventual attainment status for the SCAQMD region.

Additionally, we strongly oppose the implementation of fee based mitigation as an ineffective approach to meeting air quality improvement goals, and encourage incentive based approaches targeted at reducing both construction costs and encouraging environmentally friendly consumer behavior.

BIASC plans to be an active participant in the EGM-1 Working Group and encourages the District to reform that group early in the process following adoption of the 2016 AQMP by the Governing Board.

BCM-03: Further Emission Reduction from Paved Road Dust Sources:

BIASC suggests removal of language in this measure that references a review of National Pollution Discharge Elimination System (NPDES) measures in what we see as an infringement of the Regional Water Quality Control Board jurisdictional authority, or at a minimum a needless complication of intensions.

32-4

BIASC looks forward to continuing to work with the SCAQMD to finalize the 2016 AQMP and offers these comments in the spirit of cooperation and good public policy outcomes.

Respectfully,



Steven S. Schuyler
Executive Vice-President, Government Affairs
Building Industry Association of Southern California

Responses to Comment Letter from Building Industry Association of Southern California, Inc. (BIA)
(Comment Letter 32)

Response to Comment 32-1:

Staff appreciates the collaboration during the development of the Plan and participating in the public process.

Response to Comment 32-2:

The intent of the measure is to help implement the State Mobile Source Strategy "Further Deployment of Cleaner Technologies" measure. Emission reductions are not identified at this time in part because they may overlap with reductions from the State strategy. Additional emission reductions identified through a public process will be credited in the SIP as part of future Rate-of-Progress reporting and future AQMP revisions. Please see Response to Comment 7-5 for discussion on the TBD measures.

Response to Comment 32-3:

As the commenter is aware, there is a requirement to implement "All Feasible Measures," particularly in areas of extreme nonattainment such as the South Coast Air Basin. Staff wants to re-convene the working group to consider the concerns raised in the comments including the imposition of a fee in lieu of taking physical action during the development process. Staff also recognizes the comments regarding redundancy in regulatory efforts and will take all issues under consideration as part of the public process. Any mitigation fee would be proposed as an optional alternative to direct emission reduction. Staff looks forward in working with the industry on this measure.

Response to Comment 32-4:

Please see Response to Comment 6-2 with regard to the National Pollution Discharge Elimination System (NPDES) permit review in BCM-03. In short, the measure does not seek to "review" NPDES permit requirements or any attempt to change such requirements but rather to consider them in developing the control measure.

Comment Letter from BYD Heavy Industries (Comment Letter 33)



BYD Heavy Industries
1800 S Figueroa St.
Los Angeles, CA 90015

August 19, 2016

South Coast Air Quality Management District
21865 Copley Dr.
Diamond Bar, CA 91765

Re: Comments on Draft 2016 South Coast Air Quality Management Plan

Dear South Coast Air Quality Management District:

BYD Heavy Industries ("BYD") appreciates the opportunity to comment on the draft Air Quality Management Plan ("AQMP").

I. Introduction

BYD is a global manufacturer of zero-emission light-duty and heavy-duty battery electric vehicles. With its North American offices headquartered in Los Angeles, CA and multiple manufacturing facilities in Lancaster, CA, BYD seeks to support policy agendas that squarely address climate change and its associated dangers.

BYD applauds the ambitious goals set out in the AQMP and, as a member of the Los Angeles community, stands ready to do its part in making those goals a reality. Given the reality of finite resources available to address the region's air quality challenges, *it is critical that funding decisions be made with the mindset of achieving maximum emissions reductions per dollar spent.* With that in mind, BYD offers the following comments on the draft 2016 AQMP.

33-1

II. Mobile Source Control Strategies

Prioritize Commercially Available Zero-Emission Options

Incentive-based programs form an important component of the AQMP's control strategies, especially for NOx control. These urgent mitigation needs are compounded by the realities of limited funding resources, highlighting the importance of directing what funding is available toward the most effective solutions. *Therefore, in cases where a zero emission solution is available, no funding should be directed toward any technology type that results in emissions.*

33-2

Battery electric drayage trucks, transit buses, forklifts, and medium freight and delivery trucks are already commercially available and ready to meet the needs of their respective industries. Providing funding for diesel, near zero, hybrid and alternative-fuel solutions

that will continue to emit more greenhouse gases and criteria air pollutants makes no sense when completely zero-emission solutions are commercially available. The opportunity to deploy as many of these completely zero-emission heavy-duty vehicles as possible should be aggressively seized.

33-2
Con't

Positive Feedback Loops

Indeed, front-loaded investments directed toward funding the price difference between zero-emission heavy-duty vehicles and their conventional counterparts will cause that gap to narrow quickly. BYD estimates that once a program like this funds 1,000 vehicles, per vehicle pricing will drop by 30% due to efficiencies achieved by economies of scale. This price drop could be achieved in one year if the AQMP directed \$200,000,000 toward a specific vehicle type, such as drayage trucks. This type of early investment strategy will allow advanced technologies to scale quickly, thereby reducing, or even eliminating, the need for incentive funding in the mid- to long-term.

33-3

Additionally, year over year decreases in battery pricing due to improved density will make these vehicles even more affordable. It should also be noted that the reduced number of mechanical parts found in electric vehicles allows for significant operational and maintenance savings. As a result of these factors, battery electric heavy-duty vehicles will become cheaper to own and operate than internal combustion alternatives.

Getting Money Out the Door

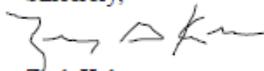
Time is of the essence with respect to mitigating the emissions currently choking the region. As such, BYD recommends that funding be disbursed utilizing voucher systems, akin to the California Air Resources Board's Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP).

33-4

III. Conclusion

The goals outlined in the AQMP are thoughtful and ambitious. They will be all the more effective by directing funds toward technologies that achieve the greatest emission reductions, rather than intermediary technologies. BYD thanks the South Coast Air Quality Management District for the opportunity to provide comments.

Sincerely,



Zach Kahn
Director of Government Relations
BYD Heavy Industries
zach.kahn@byd.com

Responses to Comment Letter from BYD Heavy Industries
(Comment Letter 33)

Response to Comment 33-1:

Staff appreciates your participation in the AQMP development process and comments on the Draft Plan. Staff agrees that the most cost effective approaches are preferred in achieving maximum emission reductions for less money spent.

Response to Comment 33-2:

The Revised Draft Plan highlights the priority to maximize emission reductions utilizing zero-emitting technologies when cost-effective and feasible, and near-zero emission technologies in all other applications. Staff supports multiple pathways to reduce emissions but recognizes the more stringent ozone standards will be very challenging to meet without zero-emitting technologies, where feasible. In some applications, near-zero technologies may be needed to “bridge the gap” to zero emission technologies and to attain the needed reductions by the attainment deadlines for the 1-hr and 80 ppb 8-hr ozone standards.

Response to Comment 33-3:

Staff agrees that over time, zero-emitting technologies will become more commercially available, feasible in more applications, and cost-effective.

Response to Comment 33-4:

Staff agrees that prompt funding is important, and will consider all options in the dispensing of incentive funding and will consider the voucher program option as noted in the comment. These ideas will be discussed and considered during the working group meetings when the structure of the program is developed. Staff encourages all interested parties to participate at that time.

Comment Letter from California Construction & Industrial Materials Association (Comment Letter 34)



August 19, 2016

Michael Krause
Program Supervisor
South Coast Air Quality Management District
21865 East Copley Drive
Diamond Bar, CA 91765

Re: Comments on DRAFT 2016 Air Quality Management Plan

Dear Mr. Krause,

California Construction & Industrial Materials Association (CalcIMA) appreciates the opportunity to comment on the South Coast Air Quality Management District's (District) draft 2016 Air Quality Management Plan (AQMP). Moving the District's air basin into attainment is a step toward improved air quality and improved economic growth by increasing the ability of businesses to operate in this region.

CalcIMA is a statewide trade association representing construction and industrial material producers in California. Our members supply the materials that build our state's infrastructure, including public roads, rail, and water projects; help build our homes, schools and hospitals; assist in growing crops and feeding livestock; and play a key role in manufacturing wallboard, roofing shingles, paint, low-energy light bulbs, and battery technology for electric cars and windmills.

CalcIMA is in support of an AQMP that provides an outline of methods to clean our air that still facilitates a reasonable business environment through regulations, workforce quality, and living environment. Accordingly, CalcIMA is highly encouraged that the District is proposing implementation of incentive programs to assist with funding the accelerated deployment of cleaner equipment that improve our basin's air quality. As an industry that has invested hundreds of millions of dollars to comply with the federal Clean Air, we find it commendable that the District recognizes the value of this past investment by committing to the development and administration of future incentive funding. Over the years, the districts' industries and agencies have been targeted to replace an extensive amount of existing equipment in order for our region to attempt to attain federal Clean Air Act objectives. It should be noted that our industry understands it is very likely that we will be targeted again to replace this equipment if incentive funding does not encourage voluntary actions to comply with the federal Clean Air Act caps on emissions that are realized through the adoption of District control measures.

34-1

Additionally, we commend the District for addressing federal sources of emissions whereas the California business owners of trucks and operations are not the only entities principally required to make emissions reductions to comply with the federal Clean Air Act. Federal government should do its' fair share to reduce emissions which can be achieved by incentivizing and regulating sources they

34-2

Page 1 of 9

CalcIMA
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are accountable for under federal law. The robust and vibrant economy of California and the District endure unique impacts due to the requirements of the Clean Air Act’s continually decreasing emissions targets. Accordingly, CalcIMA appreciates the District requesting that the federal government do its’ fair share in this AQMP.

CalcIMA also recognizes the partnership between the District, the region, the state, the federal government, and other stakeholders to ensure that requisite levels of funding are appropriately secured. In respect to this partnership, CalcIMA supports the District’s proposal of the following actions:

- At the National Level:
 - Creation of a National Clean Air Investment and Cleanup Fund; and
 - Development of new partnerships with states and regions currently in nonattainment of existing federal air quality standards or may be in nonattainment of future air quality standards.
- At the State Level:
 - Prioritize existing funding programs to maximize the co-benefits of criteria pollutant and greenhouse gas emission reductions; and
 - Initiating new funding programs.
- At the Regional / Local Level:
 - Local ballot measures;
 - Identification of potential new sources of funding opportunities at all levels of government; and
 - Reinvigorating the District’s Strategic Alliance Initiative.

34-2
Con't

Pursuant to Appendix IV-A – SCAQMD’s Stationary and Mobile Sources Control Measures, posted below are CalcIMA’s comments for the District’s review and consideration.

CMB-01	Transition to Zero and Near-Zero Emission Technologies for Stationary Sources
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Description: This proposed control measure would seek emissions reductions of NOx and VOCs from traditional combustion sources by replacement of existing equipment with zero and near-zero emission technologies via facility modernization efforts inclusive of increasing renewable fuels for power and transportation sources. Modernization can include lower emission, less toxic alternative technologies, processes, and materials along with increasing energy efficiency. Equipment that would be addressed includes non-power plant combustion sources such as engines, turbines, and boilers that generate power for electricity for distributed generation, facility power, process heating, and/or steam production, and other sources that include industrial and commercial facilities operating natural gas, diesel and liquid petroleum gas (LPG) stationary and emergency engines, as well as NOx point sources from the service/commercial and manufacturing/industrial sectors.

34-3

Comment: As the District notes, cleaner emissions technology options may not have affordable upfront costs. Whereas, the installation and use of these cleaner and more efficient choices may need



California Construction and Industrial Materials Association

to be incentivized, and when possible, combined with existing credit based programs to provide additional sources of revenue. CalcIMA is in accordance with the District’s proposal to incentivize the impacted industry with the methods outlined below:

- Loans and grants;
- Permitting and fee incentives pursuant to expansion of the existing equipment certification program and pre-approved permit program to include additional equipment categories;
- Reduced permitting fee programs for other advanced technologies;
- The mechanism of credit offsets and New Source Review incentives including expansion of the number of exemptions under Rule 1304 – Exemptions and expanding the use of the priority reserve under Rule 1309.1 – Priority Reserve, in addition this mechanism includes the adoption of a Clean Air Investment Fund and potential short-term leasing of offset credits;
- CEQA incentives such as expedited District review;
- Branding incentives that recognize businesses or equipment that reach a superior level of air quality excellence; and
- Recordkeeping and reporting incentives can reduce the recordkeeping and reporting requirements for specific zero and near-zero emission technologies.

34-3
Con't

MCS-01	Improved Breakdown Procedures and Process Re-Design
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Description: This proposed control measure relates to District Rule 430 ‘Breakdown Provisions’ and applies to breakdowns that result in a violation of any rule or permit conditions, and encompasses reporting requirements pursuant to malfunctions of continuous emissions monitoring systems (CEMS), continuous fuel gas monitoring system (CFGMS), or other equivalent monitoring systems. The rule provides relief from violations from breakdowns that are not caused by operator error, neglect, improper operation, or maintenance procedures. The period covered under this relief is limited to a maximum of 24 hours from the time the owner or operator knew or reasonably should have known of the breakdown, or to the end of the operating cycle. The operator is required to submit a written follow-up report, and District staff promptly investigates the site to determine whether the occurrence meets all District criteria to qualify as a breakdown.

34-4

Currently, Rule 430 is not approved for inclusion in the State Implementation Plan (SIP) because it does not meet U.S. EPA’s policy for startups, shutdowns, and malfunctions (SSM). U.S. EPA’s May 2015 final action on SSM stipulates that exemptions from excess emissions during periods of breakdown are not allowed. A piece of equipment may experience a breakdown repeatedly and still comply under Rule 430, but each breakdown event may have associated excess emissions, which have no cap or incidence limit under the current rule. U.S. EPA is currently addressing rule-specific breakdown provisions on a rule-by-rule basis when they are considered for SIP approval. The District states this control measure would introduce improved breakdown procedures and/or process re-designs that would apply to breakdowns from all emission sources, providing pollutant concentration and/or incidence limits to comply with U.S. EPA’s SSM policy.



Comment: U.S. EPA standards already address excess emissions outside of normal operation which may be the determining reason there are no SIP-creditable reductions from this control measure. Accordingly, CalcCIMA is recommending the District retain Rule 430 in its' current design to reflect U.S. EPA standards. Breakdowns do not occur intentionally, and equipment is already required to be maintained in accordance with manufacturer guidelines as detailed in correlating District permits. Additional rulemaking related to Rule 430 may only result in the additional cost of resources in lieu of emissions reductions. However, if the District still plans to modify Rule 430 to further develop breakdown procedures and/or process re-designs within the AQMP, CalcCIMA would like to receive a better understanding of specifically what the language would state in relation to pollutant concentration limits that will be introduced that signify when a breakdown condition occurs. And, the combustion equipment this will apply to that may be required to be readily tested with a portable analyzer that may apply to combustion equipment such as boilers, engines, and some ovens and furnaces, along with associated control equipment such as Selective Catalytic Reduction (SCR). Additionally, if Rule 430 language is further developed by the District, it is suggested that sources / facilities that have maintained compliance for a specified amount of months be exempt from breakdown emission limits in order to encourage compliance by eliminating penalties for truly accidental upset conditions.

34-4
Con't

FLX-02	Stationary Source VOC Incentives
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Description: This control measure is designed to incentivize lower polluting and less toxic alternative processes and materials for existing residential, commercial, and industrial modernization.

Comment: CalcCIMA is in accordance with the District that using an incentives-based approach will encourage businesses to make choices that will reduce emissions while minimizing cost impacts. An incentive-based approach is also consistent with business retention efforts, particularly in regards to replacing older higher-emitting equipment or material with new lower-emitting equipment or material.

34-5

EGM-01	Emission Reductions from New Development and Redevelopment Projects
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Description: This control measure aims to mitigate and, where appropriate, reduce emissions from new development and redevelopment projects and is designed to reduce emissions related to new residential, commercial, industrial and institutional development, including redevelopment. These types of projects are considered indirect sources. An indirect source is defined as any facility, building, structure, or installation, or combination thereof, which generates or attracts mobile source activity that results in emissions of any pollutant (or precursor) for which there is a State Ambient Air Quality Standard.

34-6

California Health and Safety Code (H&SC) Section 40716 states that "a District may adopt and implement regulations to reduce or mitigate emissions from indirect and areawide sources of air pollution." As an example, a 1993 California Attorney General opinion states that "a District's regulations may require the developer of an indirect source to submit the plans to the District for



California Construction and Industrial Materials Association

review and comment prior to the issuance of a permit for construction by a city or county. A District may also require the owner of an indirect source to adopt reasonable post-construction measures to mitigate particular indirect effects of the facility’s operation [as a stationary source]. Such regulations could be enforced through and action for civil penalties...” (Cal. Attorney General Opinion 92-519.) While other types of indirect source measures could be developed, the same attorney general’s opinion concluded that the District may not impose a permitting system upon indirect sources per se, given the primacy of local land use control. H&SC Section 40716 also states that “nothing in the section constitutes an infringement on the existing authority of counties and cities to plan or control land use, and nothing in the section provides or transfers new authority over such land use to a district” when an air district adopts and implements regulations to reduce or mitigate emissions from indirect and areawide sources of air pollution or encourage or require the use of measures that reduce the number or length of vehicle trips. The District will consider whether a rule similar to SJVAPCD Rule 9510 or other mechanisms that will result in mitigating or help to mitigate and potentially further reduce emissions associated with new development or redevelopment projects should be implemented.

34-6
Con't

Comment: CalcIMA would like to be included in the work group that was established as part of the 2007 AQMP that will reconvene pursuant to this control measure to explore potential actions and innovative approaches to mitigate and potentially reduce emissions from new or redevelopment projects.

MOB-07	Accelerated Penetration of Partial Zero-Emission and Zero-Emission Light-Heavy and Medium-Heavy-Duty Vehicles
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Description: This proposed control measure intends to seek greater emission reduction benefits through the early deployment of near-zero, partial zero-emission, and zero-emission light-heavy- and medium-heavy-duty vehicles with gross vehicle weight ratings (GVWR) from 8,501 lbs to 33,000 lbs through implementation of electric hybrid vehicles via the continuation of the State hybrid truck and bus voucher incentive project (HVIP).

34-7
Con't

Comment: CalcIMA is encouraged to support the District’s proposal to continue implementation of this incentive programs to assist with funding the accelerated deployment of cleaner equipment that improve our basin’s air quality.

MOB-08	Accelerated Retirement of Older On-Road Heavy-Duty Vehicles
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Description: This proposed control measure seeks additional emission reductions from existing heavy heavy-duty vehicles with gross vehicle weight ratings (GVWR) greater than 33,000 lbs. Specifically while the California Air Resources Board’s Truck and Bus regulation will ultimately require a majority of the heavy-duty trucks to meet 2010 heavy-duty exhaust emission standards by 2023, there is a need to deploy on-road heavy-duty trucks that have engines that are considered “near-zero” or have “zero-emission mile” capability. For the purposes of this control measure, “near-zero” is defined

34-8



California Construction and Industrial Materials Association

as 0.02 g/bhp-hr NOx emissions. Both voluntary incentive funding and non-monetary incentive programs would be implemented.

Comment: CalcIMA is encouraged to support the District’s proposal to continue implementation of this incentive programs to assist with funding the accelerated deployment of cleaner equipment that improve our basin’s air quality.

34-8
Con't

MOB-09 On-Road Mobile Source Emission Reduction Credit Generation Program

Description: This control measure would develop a mechanism to incentivize the early deployment of zero and near-zero emission trucks through the generation of mobile source emission reduction credits that can be used by other entities for compliance with other District rules. The mobile source emission reduction credits will be discounted to provide additional emission reductions to help meet air quality standards.

34-9

Comment: CalcIMA supports this program to create an on-road, mobile source emission reduction credit generation program that would encourage early deployment of zero and near-zero emission trucks.

MOB-10 Extension of the SOON Provision for Construction / Industrial Equipment

Description: This control measure aims to promote faster turnover of older in-use construction and industrial diesel engines by extending the current Surplus Off-Road Opt-In for NOx (SOON) Program beyond 2023 to 2031 with a minimum allocation of \$10 million.

34-10

Comment: CalcIMA is encouraged to support the District’s proposal to continue implementation of this incentive programs to assist with funding the accelerated deployment of cleaner equipment that improve our basin’s air quality.

MOB-13 Off-Road Mobile Source Emission Reduction Credit Generation Program

Description: This control measure aims to develop mechanisms to incentivize the early deployment of zero- and near-zero emission off-road mobile equipment where applicable or the early deployment of Tier 4 or cleaner combustion equipment where applicable through the generation of mobile source emission reduction credits that can be used by other entities for compliance with District rules where such crediting is allowed. The mobile source emission reduction credits will be discounted to provide additional emission reductions to help meet air quality standards. This measure would amend Rule 1620 to provide greater flexibility for entities to initiate projects to accelerate the deployment of zero- and near-zero emission off-road mobile equipment. For the purposes of this measure, a near-zero emission engine is one that is certified to be at least 90 percent cleaner than the current Tier 4 off-road emission standard for the horsepower specification of the off-road engine or meets the lowest optional NOx emission standard for on-road heavy-duty engines if the on-road engine is used in an off-road application.

34-11



California Construction and Industrial Materials Association

Comment: CalcIMA is encouraged to support the District’s proposal to continue implementation of this incentive programs to assist with funding the accelerated deployment of cleaner equipment that improve our basin’s air quality. However, to better understand the emissions standards pursuant to near zero engines, we are requesting clarification of the precise standards that would result from engines being certified to be 90 percent cleaner than current Tier 4 off-road emission standards. We would also recommend an incentive program be designed to support manufacturers with the research, development, and certification of zero and near-zero emission equipment.

34-11
Con't

MOB-14	Emission Reductions from Incentive Programs
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Description: This control measure aims to implement a rule similar to SJVAPCD’s Rule 9610 ‘State Implementation Plan Credit for Emission Reductions Generated through Incentive Programs’ in order to have emissions reductions generated through incentive programs credited in State Implementation Plan (SIP) emission inventories.

34-12

Comment: CalcIMA is encouraged to support the District’s proposal to continue implementation of this incentive programs to assist with funding the accelerated deployment of cleaner equipment that improve our basin’s air quality.

BCM-03	Further Emissions Reductions from Paved Road Dust Sources
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Description: The District states that particulate emissions occur whenever vehicles travel over a paved surface such as a road or parking lot through the re-suspension of loose material. Paved road dust emissions have been found to vary with what is termed the “silt loading” present on the road surface. Silt loading is more specifically defined as the mass of silt-sized material (> 75 micrometers in diameter) per unit area of the travel surface. Sources affecting silt loading generally include: 1) pavement wear and decomposition; 2) vehicle-related deposition; 3) dust fall; 4) litter; 5) mud and soil carryout from unpaved areas; 6) erosion from adjacent areas; 7) spills; 8) biological debris; 9) ice control compounds; 10) recent precipitation history; and 11) recent road sweeping/cleaning history. Because of the importance of silt loadings to emissions, paved road dust control techniques attempt to either prevent material from being deposited on the surface (preventative controls) or remove material deposited on travel lanes (mitigative controls). Examples of preventative control include covering of haul trucks or paving of access areas to construction sites. Street sweeping is an example of a mitigative control. In general, preventative controls are usually more cost-effective than mitigative controls to reduce paved road dust PM emissions.

34-13

The District’s existing Rule 1157 ‘PM10 Emission Reductions from Aggregate and Related Operations’ requires access improvements which are intended to reduce the amount of material tracked out from a facility onto surrounding paved public roads. The District’s existing Rule 403 ‘Fugitive Dust’ requires access improvements for sites greater than five acres and all material tracked out from applicable sources must be removed at the conclusion of the work day or at any time it extends more than 25 feet out from a site.



California Construction and Industrial Materials Association

This proposed control method would impact Rules 1157 and 403 requirements to reduce track out from stationary sources (e.g. aggregate facilities, construction sites, etc.) by specifying the most effective track out prevention measures, such as use of a wheel washing system, for sites with high vehicular activity exiting the site, or those with repeated track-out violations. The District states that the design of a wheel washing system will vary greatly depending on site-specific characteristics and anticipated traffic levels. Basic wheel washer system costs for a site with 100 trucks exiting a day have been estimated to range from \$55,000 to \$63,000 (approximately \$12,500 for installation) and operational costs will vary with local utility rates. Wheel washing systems can also be leased for approximately \$3,000 per month with one time installation/removal, including transportation, costs estimated at approximately \$14,000. Operational and maintenance costs will depend on site-specific conditions. Street sweeping costs vary greatly based on number of miles and frequencies and whether the work is conducted with in-house or contracted resources. One local jurisdiction estimated twice monthly contract sweeping costs at \$25 per curb mile.

34-13
Con't

Comment: CalcIMA will postpone providing expansive comments on this proposed control measure until the District releases the associated cost-effectiveness numbers pursuant to compliance. In relation to cost-effectiveness, we suggest that treatment of the water implemented in equipment be included in related calculations. Additionally, it should be noted that if the quantity of wheel washing facilities significantly increases in the District it may have an impact of water usage in correlation with the drought which does not have a foreseeable end at this point in time. This is to say that conservation of water should be at the forefront of any policy constructed in order to achieve a balanced environmental approach.

BCM-06	Emissions Reductions from Abrasive Blasting Operations
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Description: This control measure addresses abrasive blasting as it relates to cleaning, preparing, or texturizing of the surface of a material such as metal or masonry by forcibly propelling a stream of abrasive material against the surface. The District states that sand is the most widely used blasting abrasive material and other abrasive materials can include slag, steel or iron shot/grit, garnet or walnut shells, and that abrasive blasting operations are done in both confined and unconfined conditions. The District's current permit conditions for abrasive blasting in confined (cabinet/machine/room) conditions require venting to a PM air pollution control (APC) equipment when in full use. Baghouses or dry filters are the most frequently used APC equipment. For open and portable blasting operations, venting to APC equipment is not required unless abrasives contain a carcinogenic toxic material. This control measure proposes voluntary applications of the following methods of control by providing incentives, primarily focusing on dry abrasive blasting operations conducted in open areas using portable blasting equipment with or without a permit. Blasting enclosures and dust collection methods include:

34-14

- A portable blasting enclosure/booth can be installed at the outdoor job site with a dust collection system. The portable enclosure for outdoor blasting can be used to further reduce emissions even when abrasives used do not contain any known carcinogenic toxic material.



California Construction and Industrial Materials Association

The blasting emissions can then be vented to PM APC equipment with a combination of filters installed. If abrasives contain a known carcinogenic material, a manufacturer-certified HEPA filter can be used in the APC equipment for additional control;

- The outdoor workspace may be walled off with permanent or temporary construction barriers while maintaining a negative pressure environment; and
- Pressure conditions can be monitored to ensure proper pressure is maintained so that blasting dust would not escape out of the enclosed workspace. Portable or fixed differential pressure monitors may be considered to continuously monitor and assist in the maintenance of pressure condition.

34-14
Con't

Comment: CalcIMA is encouraged to support the District's proposal to continue implementation of this incentive programs to assist with funding the accelerated deployment of cleaner equipment that improve our basin's air quality.

BCM-07	Emissions from Stone Grinding, Cutting, and Polishing Operations
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Description: This control measure addresses PM emissions from stone fabrication such as grinding, cutting, drilling, scarifying, polishing, carving, and etching generates significant amounts of dust emissions containing PM10, some PM2.5, and silica particles which are known to cause lung diseases or silicosis. The control method proposes financial incentives be made available to exchange existing dry/wet equipment with new equipment that includes integrated add-on controls.

34-15

Comment: CalcIMA is encouraged to support the District's proposal to continue implementation of this incentive programs to assist with funding the accelerated deployment of cleaner equipment that improve our basin's air quality.

CalcIMA respectfully asks the District to consider our comments. Please contact me with any questions or concerns at (951) 941-7981 or at sseivright@calcima.org.

Sincerely,

Suzanne Seivright
Director of Local Governmental Affairs

**Responses to Comment Letter from California Construction and Industrial Materials Association
(CalCIMA) (Comment Letter 34)**

Response to Comment 34-1:

Staff appreciates your participation in the AQMP development process and support for the incentive programs.

Response to Comment 34-2:

Staff appreciates the support for the partnership for emission reductions from the federal, state and local level. In addition, staff agrees that funding would also need to be provided from a federal, state and local level.

Response to Comment 34-3:

The incentive methods provided by the commenter are supported by staff which agrees that value could be gleaned from non-financial incentives such as expedited permit review or flexibility in recordkeeping requirements.

Response to Comment 34-4:

The commenter recognizes the current challenges with the U.S. EPA policy compared to the existing Rule 430, but if and when amendments are considered for SCAQMD Rule 430, a full public process will take place. The stakeholders and interested parties can participate in the rule amendment process, including discussions of possible exemptions.

Response to Comment 34-5:

Staff appreciates the commenter's support for stationary source VOC incentives.

Response to Comment 34-6:

Staff encourages stakeholders and interested parties, including the commenter, to participate in the working group meetings during the development of the facility-based measures that affect indirect sources of emissions.

Response to Comment 34-7:

Incentive measures can be very effective in accelerating the deployment of cleaner vehicles and equipment and staff appreciates the commenter's support for the incentive programs.

Response to Comment 34-8:

Please see Response to Comment 34-7 regarding the continued implementation of incentive programs for MOB-08.

Response to Comment 34-9:

Credit generation programs can also be very effective in incentivizing the transition to cleaner technologies and staff appreciates the commenter's support for the credit generation programs.

Response to Comment 34-10:

Please see Response to Comment 34-7 regarding the continued implementation of incentive programs for MOB-10.

Response to Comment 34-11:

Staff appreciates the commenter's support for the incentive and credit generation programs, and the clarification regarding affected equipment will be further vetted as these programs are developed. Staff encourages participation from the commenter during the development of these programs.

Response to Comment 34-12:

Staff appreciates the support for incentive programs to implement MOB-14.

Response to Comment 34-13:

Cost-effectiveness estimates and water demand impacts will be provided if rule development is proposed for this source category. SCAQMD staff agrees on the importance of water conservation in all potential control programs.

Response to Comment 34-14:

Staff appreciates the support for incentive programs for BCM-06.

Response to Comment 34-15:

Staff appreciates the support for incentive programs for BCM-07.

Comment Letter from California Council for Environmental and Economic Balance
(Comment Letter 35)



California Council for Environmental and Economic Balance

101 Mission Street, Suite 1440, San Francisco, California 94105
415-512-7890 phone, 415-512-7897 fax, www.cceeb.org

August 19, 2016

Michael Krause
Planning and Rules Manager
SCAQMD Headquarters
21865 Copley Drive
Diamond Bar, CA 91765

RE: Draft 2016 Air Quality Management Plan

Dear Mr. Krause:

We are pleased to submit the following comments on behalf of the California Council for Environmental and Economic Balance (“CCEEB”). CCEEB is a non-profit, non-partisan association of business, labor, and public leaders, which advances balanced policies for a strong economy and a healthy environment. CCEEB represents major mobile and stationary sources across California and is an active stakeholder at the South Coast Air Quality Management District (“SCAQMD”).

CCEEB supports the general approach to the Draft Air Quality Management Plan (“AQMP”), which relies on a comprehensive mix of regulations and incentives to achieve numerous federal ozone and PM2.5 standard beginning as early as 2019 and up to 2031. The preponderance of these reductions will be achieved through direct regulations of sources, totaling 68 percent of NOx reductions by 2023, and 80 percent of NOx reductions by 2031 (from 2012 base year). However, because mobile sources account for 88 percent of all NOx emissions in the South Coast—and given the stringency of existing on-road and off-road tailpipe and engine standards, as well as stationary source regulations—aggressive incentive programs are needed to accelerate fleet and equipment turnover. To fully achieve the needed deployment of clean technologies for mobile sources in the South Coast, the SCAQMD and ARB staffs estimate that it will require about \$1 billion per year of incentive funding for the next 14 years. The total cost to deploy these clean technologies is almost \$40 billion through 2031.

35-1

As a general principle, CCEEB believes that staff should only submit to ARB those measures for which there are quantifiable emission reductions. This would not preclude the District from pursuing other measures within its authority; however, such measures should not become federally enforceable under the SIP.

35-2

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Need Strong Partnerships to Develop Funding Plan and SIP-creditable Incentives

CCEEB places the highest priority on incentive programs that satisfy federal Clean Air Act (“CAA”) emission reduction requirements and, as such, are SIP creditable. We appreciate discussion of CAA requirements in the proposed AQMP, as well as the agency’s commitment to developing a viable and comprehensive funding plan. CCEEB believes that the SCAQMD should build strong partnerships with public stakeholders, the California Air Resources Board (“ARB”) and U.S. EPA in this endeavor, both as a means to solicit creative and effective ideas, as well as a way to build broad-based political support and consensus. For example, CCEEB recommends that the District work with ARB to secure a portion of the money from the VW settlement to help fund the incentive measures proposed in the AQMP. It’s important to consider, too, that not all incentives involve direct funding; and public partners may be best in tune with what will drive effective and innovative penetration of clean technologies.

35-3

California and the SCAQMD Must Maximize Emission Reductions Across All Incentive Programs

CCEEB acknowledges that the AQMP is ambitious. Achieving the aggressive technological transformation outlined in the plan, and in the short timeframe needed to meet federal air quality standards, will take a tremendous amount of political will, capital investment, and cross-sector support. To be credible, the District, along with ARB, must demonstrate its commitment to maximizing funding support for emission reductions across all investment programs, including the Greenhouse Gas Reduction Fund. This could involve sustained advocacy at the Legislature and the Governor’s Office to ensure that spending priorities are aligned with NOx and PM2.5 control measures contained in the AQMP. While public investments can and should provide multiple benefits, the health benefits stemming from attainment of air quality standards must take priority. Public funds and the private capital they are meant to leverage are inherently limited; the District must show that it can prudently administer its fiscal resources and prioritize scarce public funds in order to demonstrate that the incentive-based regulatory strategy laid out in the proposed AQMP is both feasible and worthy of support. The District must work with the State that must be willing to lead with its own dollars to act as a catalyst for private investment.

35-4

Below, please find our comments to specific control measures.

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CMB-01 Transition to Zero and Near-Zero Emission Technologies for Stationary Sources

This proposed control measure would seek emission reductions of NOx and VOCs from traditional combustion sources by replacement with zero and near-zero emission technologies.

While CCEEB understands the overall intent of this measure, we have numerous questions about many of the details it contains. For example, we believe clarity is needed to distinguish between the Zero and Near-Zero Technologies Implementation Schedule and the Facility Modernization methods of control.

We also have questions about some of the inventories used in the measure. For example, we note that Table 1 on page IV-A-50 shows NOx emissions for stationary ICEs at 22.5 tpd, yet the total fuel combustion in the 2012 Summer Planning Emissions inventory listed in Appendix 3 is 29.18 tons per day of NOx, and this includes emissions from RECLAIM sources. Clearly, there is a need to work through these numbers and ensure inventory accuracy.

Page IV-A-51 states, "Based on this analysis, staff assumes that approximately 6,300 diesel ICEs can be replaced with Tier IV engines and 110 non-diesel ICEs can be replaced by powering with electrical energy, fuel cells, or backup battery storage units. The diesel replacements are considered a short term reduction (2023) while the majority of the non-diesel ICEs are considered a long term reduction target (2031) as it is anticipated the cost will decrease and market acceptance will increase for fuel cells and/or backup battery storage units."

CCEEB is currently working with the ARB on this issue. While great progress is being made, we do not believe that there will be a sufficient supply of Tier IV engines to meet the 2023 demand. Further, we have significant concerns that non-diesel ICEs will be available in sufficient quantities to meet the 2031 demand. We believe that any target dates/years identified in the AQMP for ICEs should be aligned with the phase-out dates that CARB is identifying in the proposed rulemaking revisions to the PERP and ATCM regulations, slated to be finalized and adopted in 2017.

35-5

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CMB-02 Emission Reductions from Commercial and Residential Space and Water Heating
CMB-04 Emission Reductions from Restaurant Burners and Residential Cooking
ECC-03 Additional Enhancements in Reducing Existing Residential Building Energy Use

These three measures will regulate many sources that have not previously been subject to District rules or part of an emissions reduction strategy. Moreover, these businesses, many of them small and medium-sized enterprises, will account for 75 percent of estimated compliance costs for all Stationary Source Measures, with each of the three measures costing approximately \$100 million per year.

35-6

CCEEB supports staff's efforts to look at these source categories. In doing so, we ask that the District work closely with affected businesses and their representatives. For example, under CMB-04 that targets restaurant equipment, the District should work closely with the North American Association of Food Equipment Manufacturers (NAFEM) and the commercial food service industry.

CMB-03 Emission Reductions from Non-Refinery Flares

The purpose of this control measure would be to seek reductions of NOx and VOC from gas handling at non-refinery sources. CCEEB supports encouraging facilities to look for ways to reduce flaring, but due to the nature of flares and operational constraints, particularly from wastewater treatment plants and landfills, it is essential that this measure remain as an incentive. Furthermore, CCEEB encourages the District to find and encourage beneficial uses of waste gas, including pipeline injection.

35-7

CMB-05 Further NOx Reductions from RECLAIM Assessment

In this control measure, staff identifies a series of approaches that can be explored to make the program more effective in ensuring equivalency with command and control regulations implementing BARCT, and to potentially generate further NOx emission reductions at RECLAIM facilities.

CCEEB has significant concerns with inclusion of a control strategy with an assigned reduction for the RECLAIM program. We believe that there are too many unknowns at this time to assign a reduction. The program went through a significant shave just last December. That action is now under review by the Air Resources Board. We do not know the outcome of that review, but it could change the dynamics for any future reductions from the program. The December amendments also provided an opt-out for power generators. While CCEEB supported this part of the proposal, we do not know

35-8

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how many facilities will chose to use it and we do not know what effect that will have on the market or the universe of RECLAIM credits. There are other provisions that also add uncertainty to the program. Staff is currently developing a provision to address credits from facilities that have shut down. Again, we do not know the impact that this will have on the market. Finally, the December amendments included a floor price for credits. This too brings with it some level of market uncertainty. Given these uncertainties, we do not believe it is appropriate for this control measure to have an assigned reduction to the plan. Rather, the AQMP should list the emission reductions from this measure as "TBD".

35-8
Con't

CTS-01 Further Emission Reductions from Coatings, Solvents, Adhesives, and Sealants

This proposed control measure seeks VOC emission reductions by focusing on select coating, adhesive, solvent, and sealant categories by further limiting the allowable VOC content in formulations or incentivizing the use of super-compliant technologies.

A portion of the proposed method of control is stated to be an additional tightening of regulatory exemptions that may be used as "loopholes" to avoid the required use of compliant products. CCEEB agrees that "loopholes" are not appropriate and should be addressed. However, we are also aware of situations that require a regulatory exemption. Many of the rules in Regulation 11 contain exemptions for valid reasons. Prior to proposing the elimination of an exemption, CCEEB strongly encourages staff to work with all stakeholders to ensure that an appropriate substitute product is readily available.

35-9

MCS-01 Improved Breakdown Procedures and Process Re-Design

The purpose of this control measure is to revise the current breakdown procedures in Rule 430 resulting in a process re-design that would apply to breakdowns from all emission sources. In that there are no SIP-creditable emission reductions associated with this control measure, CCEEB does not believe it is appropriate to include MCS-01 in the AQMP. As CCEEB has previously stated in testimony to the Board, we would support an amendment to Rule 430 outside the AQMP process that adds language to say, "Nothing in this action precludes citizen suits or EPA enforcement." CCEEB also believes that there are other alternatives that could also address EPA's policy for Shutdown, Start-Up and Malfunctions (SSM). As MCS-01 proposes only one option, the inclusion of breakdown associated emission limits into existing source specific rules for resolution of the SSM issue, CCEEB is further concerned that inclusion of MCS-01 in the AQMP would limit consideration of these other possible strategies.

35-10

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**MOB-01 Emission Reductions at Commercial Marine Ports;
MOB-02 Emission Reductions at Rail Yards and Intermodal Facilities;
MOB-03 Emission Reductions at Warehouse Distribution Centers; and
MOB-04 Emission Reductions at Commercial Airports**

The AQMP proposes four “Facility-Based” Mobile Source Measures that reference facility based targets. CCEEB requests that all references to facility-based targets be removed. Both the District and CARB have acknowledged that the growth management and indirect source control measures are not necessary to meet the requirements of the Clean Air Act. There is no emission reduction target for these control measures in the draft AQMP. These control measures seek to reduce emissions from on- and off-road sources. These emission sources are within the exclusive purview of CARB and EPA, which already have rules and regulations to significantly reduce NOx emissions. According to the draft 2016 AQMP, the effect of the rules and regulations are significant, showing reductions of over 67 percent in NOx emissions and close to 60 percent in VOC emissions between 2012 and 2023, even with increases in fleet population. Additional mobile source emission reductions will come from new measures that achieve turnover of older vehicles with replacement by the cleanest vehicles and equipment currently available and increased penetration of commercially available near-zero and zero-emission technologies through incentives programs.

35-11

Additionally, such rules would likely have a chilling effect on business development as they could lead to increased VMT, costs, and emissions should facilities choose to site outside of the area because of these measures.

**MOB-07 Accelerated Penetration of Partial Zero-Emission and Zero-Emission Light-Heavy- and Medium-Duty Vehicles and
MOB-08 Accelerated Retirement of Older On-Road Heavy-Duty Vehicles**

MOB-07 seeks additional emissions reductions through the continuation of the State Hybrid Truck and Bus Voucher Incentive Program (HVIP).

MOB-08 seeks additional emission reductions from on-road heavy-duty vehicles beyond the emissions reductions targeted in ARB’s Truck and Bus Regulation.

35-12

CCEEB recognizes that these sources are a very significant component necessary to achieve the needed emission reductions to meet the basin’s clean air requirements. We generally support the approach used in these measures, as both cost effective and able to show early benefits. However, we would like to see language added to ensure that these measures take a fuel neutral approach to transportation pathways. MOB-07

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places priority on the early introduction of electric hybrid vehicles and zero-emission medium-heavy duty vehicles. CCEEB urges consideration of near-zero vehicle options.

35-12
Con't

We would be pleased to meet with you and your colleagues to discuss our comments in more detail.

Thank you.

Sincerely,



William J. Quinn
Chief Operating Officer

cc: Mr. Wayne Natri, SCAQMD Acting Executive Officer
Dr. Philip Fine, SCAQMD Deputy Executive Officer
Mr. Gerald Secundy, CCEEB President
Ms. Janet Whittick, CCEEB Policy and Communications Director
Mr. Jackson Gualco, CCEEB Consultant
Ms. Kendra Daijogo, CCEEB Consultant
Members, CCEEB's South Coast Air Project

Responses to Comment Letter from California Council for Environmental and Economic Balance (CCEEB) (Comment Letter 35)

Response to Comment 35-1:

Staff appreciates your participation in the AQMP development process and support for the general approach outlined in the Draft Plan.

Response to Comment 35-2:

Please see Response to Comment 7-5 regarding TBD measures that do not have quantifiable emission reductions yet.

Response to Comment 35-3:

Staff appreciates the comment. The VW settlement is identified as one of the potential funding opportunities in the proposed Financial Incentive Funding Action Plan. A draft Financial Incentive Funding Action Plan will be released for public comments and will serve as a companion document to the AQMP.

Response to Comment 35-4:

This will be included in the development of the Financial Incentive Funding Action Plan. Also, please see Response to Comment 35-3 regarding maximizing funding support. Staff agrees on the need to support measures to reduce NOx and PM2.5.

Response to Comment 35-5:

Staff has determined potential source categories for emission reduction for the incentive programs. Upon implementation and formation of a working group, new zero and near-zero emitting technologies could be identified as well as other sources for potential NOx reductions. Staff anticipates many facilities and stakeholders will come forth and participate in the incentive program development. Once a working group is established, staff will determine the most effective means for distribution of funds to achieve emission reductions. The priority will be towards zero emitting technologies wherever possible and near-zero emitting technologies, if there are no other alternatives. The timeline for reductions will largely depend on an analysis of where the most effective reductions can be achieved. Incentives are expected to help facilities and equipment owners change out equipment earlier towards zero and near-zero technology.

Using the total fuel combustion from the 2012 Summer Planning emissions inventory, staff feels that 6 tons per day (tpd) NOx emission reductions can be achieved through regulation and if facilities are incentivized towards zero and near-zero technologies.

Many options, other than Tier 4 ICEs, are available for diesel ICE replacements such as fuel cells, battery storage, or diesel ICE bi-fuel modifications. Diesel ICEs will have to at least meet Tier 4 standards to qualify as a replacement option; however, staff will prioritize ICEs that strive for zero and near-zero emissions. Staff will also consider regulatory requirements for facilities applying for new permits for backup diesel generators such that the facility will have to demonstrate why zero or near-zero emitting alternatives are not feasible prior to approving a new permit. Incentives can be applied to encourage the replacement of existing diesel backup generators to battery storage, in applications where longer-term back-up power is

not required, or may be used for new equipment at facilities that go above and beyond regulatory requirements to use zero and near-zero technologies that may not be cost-effective.

In regards to aligning the targeted reductions with the phase-out dates for CARB's Portable Equipment Registration Program (PERP) and Airborne Toxic Control Measure (ATCM) regulations, CMB-01 includes incentive measures designed to encourage early adoption of zero and near-zero technologies, before regulatory requirements are enforced. If staff waits to implement the measure until regulatory requirements are in place, emission reductions would not be additional and therefore do not qualify for an incentive. Engine operators will be encouraged to participate in incentive programs for zero and near-zero technology and become early adopters of these technologies before regulatory compliance deadlines.

Response to Comment 35-6:

SCAQMD does plan to work with affected businesses. Please note ECC-03 is for existing residential buildings and incentives based on the equipment purchase decision.

Response to Comment 35-7:

The District agrees with the commenter with regards to encouraging the beneficial use of waste gas from landfills and wastewater treatment plants, including pipeline injection. For these types of projects that employ zero or near-zero technology, including pipeline injection, incentive opportunities can be made available under CMB-01. Incentives for infrastructure and biogas cleanup would help these sources find beneficial uses with co-benefits for these waste streams. CMB-03, however, is a regulatory measure and would require emission reductions from non-refinery flares.

Response to Comment 35-8:

Reductions in the RECLAIM program are a result of periodic BARCT assessments that evaluate any new technology that can be applied cost effectively to existing sources. Potential technologies that were identified in the December 2015 amendments would have further matured and based on past amendments, the control measure's emission reduction target is not unreasonable. One approach under serious consideration is an orderly sunseting of the RECLAIM program which would involve a long-term transition to a command-and-control regulatory structure. The basis for staff's estimate of a potential NOx reduction of 5 tons per day is previous rulemakings, the long time period proposed to implement the reductions, and the margin between RTC's in the market and BARCT level emissions.

Response to Comment 35-9:

Staff acknowledges that there were valid reasons for the inclusion of exemptions in Regulation XI at the time of adoption. With changes and improvements in technologies, staff must re-evaluate the existing exemptions, especially when those exemptions are used as loopholes to circumvent rule requirements. Staff will work closely with stakeholders to determine if rule exemptions can be limited or removed.

Response to Comment 35-10:

Staff appreciates the commenter's concern with the inclusion of MCS-01 in the Plan, however, as the commenter is aware, U.S. EPA has expressed concerns with Rule 430, has not provided much guidance explaining a possible new policy, and there is litigation challenging the current policy. Thus, it is critical

that staff discloses the need to potentially amend existing Rule 430 pursuant to future direction from U.S. EPA. If and when amendments are considered for SCAQMD, Rule 430 a full public process will take place at which time the stakeholders and interested parties can participate in the rule amendment process, including other possible strategies or options to comply.

Response to Comment 35-11:

Please see Response to Comment 23-4 with regard to the facility-based measures to be implemented by the SCAQMD.

Response to Comment 35-12:

Additional language has been added to encourage the deployment of zero-emission technologies wherever feasible and near-zero emission technologies everywhere else.

Comment Letter from California Hydrogen Business Council (Comment Letter 36)



**CALIFORNIA HYDROGEN
BUSINESS COUNCIL**

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August 19, 2016

**Comments by California Hydrogen Business Council
on SCAQMD's draft 2016 Air Quality Management Plan**

Executive Director Jeff Serfass appreciated the opportunity to provide in-person comments on SCAQMD's Air Quality Management Plan (AQMP) at its Diamond Bar workshop on July 14th. The comments below expand on his verbal comments.

In the Plan's attention to distributed generation resources, it should be recognized that hydrogen and fuel cells used for stationary power and in microgrids can eliminate the need for some combustion energy facilities. Generation of fuel cell electric energy close to commercial and industrial loads, and even residential facilities, can provide the advantages of distributed resources without production of NO_xs and other products of combustion turbines and engines.

36-1

The Plan places appropriate emphasis on the role of solar and wind resources. Hydrogen produced from intermittent, sometimes excess renewable energy can be a management tool that enhances a solar and wind strategy. Hydrogen produced from solar and wind, that is then used in power to gas strategies and directly as a transportation fuel, will help match the combination of loads and the renewable resources. We ask that SCAQMD work with the California ISO and others to plan to maximize the use of solar and wind resources with hydrogen as a keystone to the strategy.

36-2

Mobile source control strategies promoted by the California Air Resources Board don't explicitly mention hydrogen and fuel cell technologies which are well suited for now and in the future. For example, hydrogen can be employed in ports to create a full hydrogen economy there, serving the entire goods movement chain with an integrated systems approach.¹ Very importantly, this allows for the synergism of co-benefits that can also be applied to light duty vehicles throughout the basin with fuel infrastructure benefits.

36-3

The Plan states that renewable energy technologies must still be supplemented by fossil fuel generation due to the intermittency of renewable energy. This is simply not true. Energy storage, and in particular, bulk energy storage supplied by hydrogen strategies, can make a 100% renewable energy electric system possible.

36-4

In the Plan, energy storage is considered as an electron to electron system and fails to understand the role of power to gas and the opportunities for larger scale energy storage systems that can't easily be met by battery or other limited storage options. It is easy to conclude that hydrogen energy storage in an "electrons

36-5

¹ See "The Port of the Future: The Potential of Fuel Cells to Green Our Nation's Ports" at <http://hfcarchive.org/wp-content/uploads/2012/02/Port-of-the-Future.pdf>

to storage to electrons” strategy does not meet efficiency or cost objectives, but hydrogen energy storage strategies through power to gas and supply of hydrogen as a vehicle fuel can meet efficiency and cost goals, offering larger-scale, longer duration storage systems. At the Workshop, interest in power to gas information and data was expressed so attached to these comments is the CHBC White Paper on Hydrogen and Energy Storage and Power to Gas.

36-5
Con't

The Plan could benefit from asserting what the end game is, to provide certainty about where we really need to get to.

The AQMP should assert its role in ensuring that the hydrogen infrastructure is built faster, for support of a faster turnover from combustion engines to non-combustion fuel cell electric vehicles. The AQMP needs to work with industry to accelerate fleet turnover. The current regional and state plans do not necessarily reduce emissions as “expeditiously as practical” and needs to recognize the urgency for quicker action.

36-6

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About the California Hydrogen Business Council

The California Hydrogen Business Council is comprised of organizations and individuals involved in the business of hydrogen. Its mission is to advance the commercialization of hydrogen in transportation and stationary sources to reduce emissions and dependence on foreign oil. More information at www.californiahydrogen.org



INTRODUCTION

California is faced with an increasingly urgent need to deploy utility-scale energy storage solutions to support the integration of a rapidly expanding supply of intermittent renewable power generation resources. One promising approach to address this need is the use of hydrogen as an energy storage medium in an approach referred to as Power-to-Gas (or P2G). In this approach, hydrogen produced from electrical energy via electrolysis is used as an energy storage medium either directly or after further conversion to methane as the carrier. Electrolysis is a mature technology which converts electricity into hydrogen (and oxygen) by splitting water. Beyond the storage function of converting electricity to gaseous fuel for later use, these systems can cycle up and down rapidly providing additional grid support functions including voltage and frequency regulation and rapid ramping up or down as needed. This technology is currently being deployed in Europe and Canada but is only at the early demonstration phase in California and is not as widely known as other energy storage approaches such as batteries, pumped hydro and compressed air. This White Paper is intended to provide policy makers and other interested parties with an overview of the concept and its potential a cost-effective resource for fuel production and grid services.

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**BACKGROUND**

Countries around the world are investing heavily in renewable generation with wind and solar as the dominant technologies. Without large-scale storage of electrical energy, power grids cannot accommodate high levels of intermittent renewable resources because of mismatches in supply and demand which can result in periods of significant excess generation creating the need for bulk storage. Short-term, rapid fluctuation in power production from wind and solar also challenge the ability of the grid to respond creating the need for rapidly responding grid resources. This situation is predicted to become acute in California over the coming five years as solar production peaks near mid-day and declines rapidly just as demand peaks in the late afternoon and early evening creating a the need for rapid ramp up of replacement power. This need will become even more dramatic as California progresses toward its goal of 50% renewable power by 2030. A similar situation can exist with wind resources which can show high production in pre-dawn hours when demand is low. In periods when supply exceeds demand, excess wind power must be curtailed, which wastes a renewable resource. In such periods of excess, which can span minutes, hours or even days, large amounts of renewable electricity can be lost simply because the grid cannot accept the power.

Power-to-Gas (P2G) represents one potential tool for managing renewable power intermittency and over-generation. Simply described, P2G is the process of using electrolysis to split water into hydrogen and oxygen. Through this process, electrical energy is converted to chemical energy in the form of hydrogen. The hydrogen can then be transported through the natural gas grid via blending or further conversion to methane, transported by other means such as trucks, or used directly at the point of production. The stored chemical energy can be used to generate electricity via a fuel cell or other generation device, as a transportation fuel, or for any other purpose for which hydrogen or methane is used. The water consumption of the P2G process is small, with about 50 gallons of water required to convert 1 MWh of power into 20 kg of hydrogen. Put another way, all of the energy required to run a household could be stored by converting less than 1% of the indoor water it consumes.

The Power-to-Gas concept is illustrated in Figure 1 and Figure 2 shows the potential for rapid-response capability of P2G systems. An important distinction between P2G and other forms of energy storage is that P2G allows conversion of energy amongst a variety of sectors and end-uses (e.g., electric grid, gas grid, transportation fuel) and takes advantage of the natural gas grid as an existing and inexpensive storage resource to augment, and in some instances replace, dedicated hydrogen storage infrastructure. Defining grid electricity storage to include conversion and later use in non-electrical forms of energy is critical to achieving emissions and climate goals in a least-cost, best-fit manner. Constraining storage solutions to “electricity-in, electricity-out” only will increase the cost of intermittency.

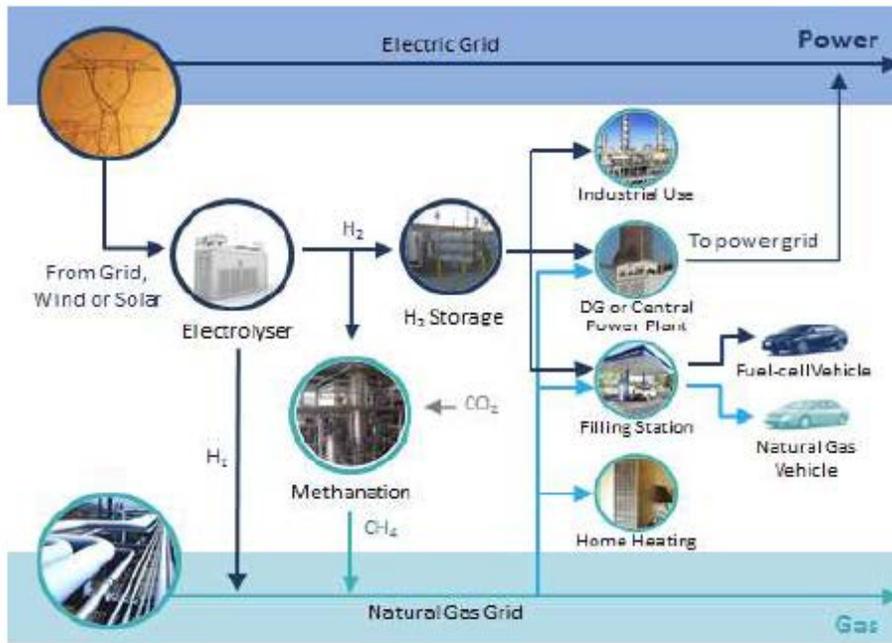


Figure 1 – Power-to-Gas Concept

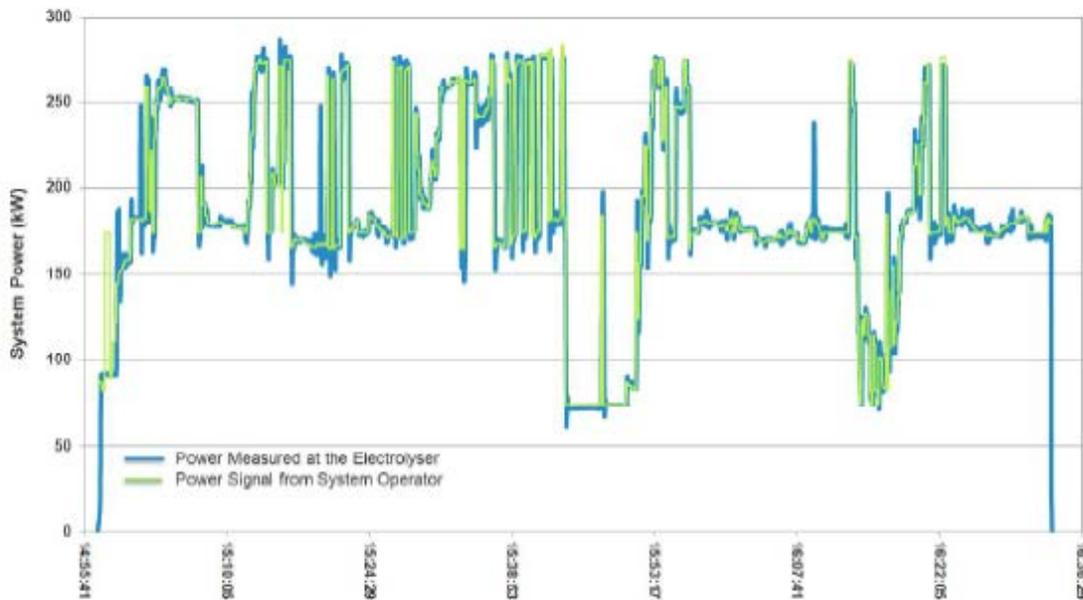


Figure 2 – Electrolyzer Sub-second Load Following Capability



THE NEED FOR GRID-SCALE ENERGY STORAGE

The need for grid-scale energy storage to manage renewable energy intermittency and over-generation is evident in Europe, where large deployments of renewable power resources often produce excess power that out-strips demand. For example, between 2011 and 2012, ‘constraint payments’ to wind farms by National Grid were over ten percent of the total amount paid to all generators, which totalled around \$55 million.¹ The value of the balancing services market in the UK for 2014/15 rose to more than \$1.7billion. In some areas of Germany, 30% of the wind production is curtailed.²

Closer to home, Texas and Washington have faced their own renewable energy challenges. In Texas, renewable power over-generation and transmission capacity constraints resulted in negative energy prices in 2011–2013.³ In Washington, Bonneville Power Administration paid wind farmers nearly \$3 million over several months in 2012 to curtail their power deliveries.⁴

The California Independent System Operator (CAISO) forecasts similar challenges for the California grid. Shown in Figure 3, the now famous “Duck Curve⁵” (this refers to the shape of the CAISO net load (grid supplied power) plotted against time of day)

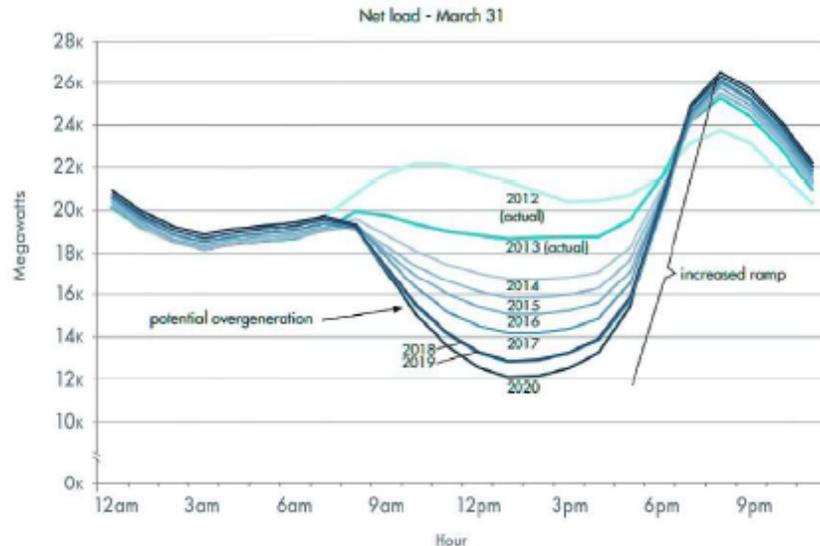


Figure 3 – “The Duck Curve” -- Net Load Curve
 Source: DEMAND RESPONSE AND ENERGY EFFICIENCY ROADMAP, CAISO, 2013

¹ http://instituteeforenergyresearch.org/analysis/uk-pays-millions-to-wind-farms-not-to-generate-electricity-while-scotland-fells-trees-to-build-more-wind-farms/#_edn3

² Presentation by Dr. Alexander Vogel, Gas to Power Conference, Cologne, Germany, November 2012

³ <http://www.eia.gov/todayinenergy/detail.cfm?id=16831>

⁴ <http://washingtonstatewire.com/blog/too-much-windpower-rivers-surged-this-summer-and-oversupply-cost-2-7-million/>

⁵ This curve is the net load served by the California Independent System Operator and it reflects the reduced load in the middle part of the day created by increasing amounts of self-generated solar energy. Surplus results when the system supply exceeds demand, at which point “must run” resource must be curtailed to protect the system.

could lead to annual surplus renewable energy of up to 12,000 GWh (nearly 10% of renewable production) under a 50% renewables scenario.⁶ In addition, the rapid decline of solar production in the later afternoon and evening will also lead to the need for rapid ramping of replacement resources, which will add cost to the grid and also pose technical challenges for both the electric and natural gas grids. Storage will be a technical necessity if California is to reach its goals for renewable electricity.

The Duck Curve clearly shows the need for load shifting over periods of four to twelve hours. In addition, at high penetration levels of solar and wind resources, not only daily, but also seasonal variations in resource level will require storage resources over longer time periods. Power-to-Gas is uniquely suited to these long-duration storage needs.

While battery costs go up in proportion to the quantity of energy stored (duration), P2G cost is nearly independent of the quantity of energy stored when the existing gas grid is used as the storage medium as illustrated in Figure 4. Although future costs are subject to uncertainty, the cases assessed here reflect a cross-over in efficiency-adjusted capital cost with lithium-ion battery costs at a storage duration of between 12 hours and 35 hours of storage capacity. The case labelled “Dedicated Fuel Cell” assumes that a fuel cell is part of the system cost to reconvert storage energy to electricity. The “Existing Generation” case assumes that the gaseous fuel produced by the P2G system is transported over the natural gas system and used in an existing generation resource.

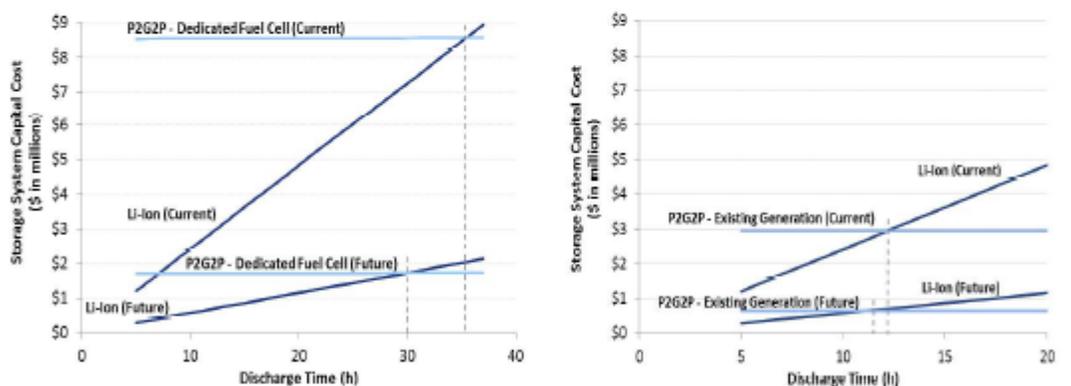


Figure 4 – Capital Cost versus Storage Duration for 1 MW (output) Battery and P2G2P Systems

⁶ https://www.ethree.com/documents/California_Utility_Brief_E3_Study_Final.pdf

THE POWER-TO-GAS GRID-SCALE ENERGY STORAGE SOLUTION

Power-to-Gas represents a viable and potentially low-cost approach to large-scale energy storage, and electrolyzers can also serve other grid functions such as rapid demand or supply response, spinning reserve, and frequency and voltage regulation. As shown in Figure 5 below, P2G is a technology that can be similar in scale to pumped hydro and compressed air but is much more modular and flexible in siting and can utilize the vast storage capacity of the existing natural gas grid. As an example, over 130 billion cubic feet of natural gas storage capacity exists in Southern California. To put this in perspective, this is enough to supply all of the gas-fired generation in the region for more than two months.

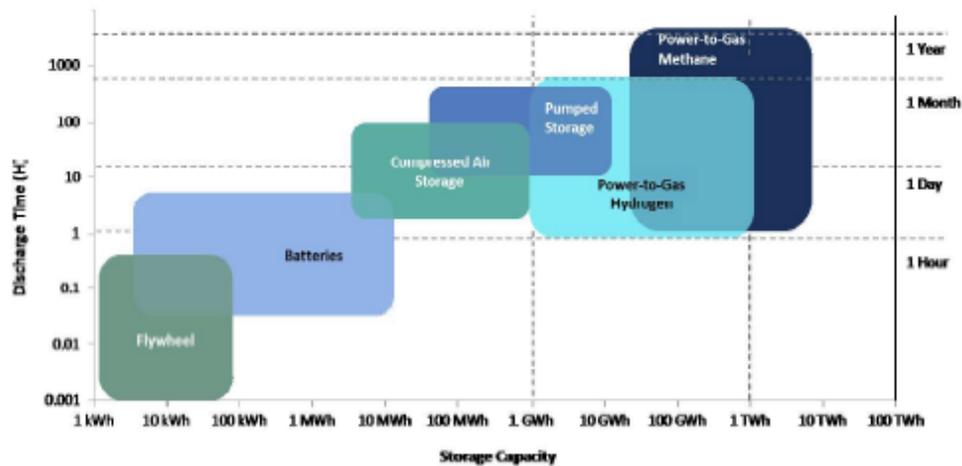


Figure 5 – Storage Technologies and Power / Energy Characteristics (After Fraunhofer ISE, 2015)

As discussed, P2G has the unique feature of converting electrical energy into chemical energy in the form of hydrogen or methane. This expands the range of storage use cases to include use as a vehicle fuel for fuel cell or natural gas vehicles. Today, vehicle fuel carries a substantially higher value than electricity on an energy-equivalent basis. Like other energy storage technologies that are especially amenable to bulk energy storage (e.g., pumped hydro, compressed air), the incremental cost of increasing storage capacity is low. This feature enables lower cost bulk energy storage of the type and duration (e.g., daily, seasonal) that will be required for mitigating renewable power curtailment.⁷

Other key attributes of P2G energy storage include its modularity to support sub-megawatt to multi-megawatt deployment, siting flexibility (due to footprint, zero or near-zero emissions and

⁷ Maton, Zhao and Brouwer, *International Journal of Hydrogen Energy*, Volume 38, pp. 7867-7880, 2013



low noise), sub-second response times, minimal adverse environmental impacts, the use of the existing massive gas pipeline infrastructure and technical maturity. Because of these features, P2G is being actively pursued as a storage solution around the globe. This includes megawatt-scale installations in Europe⁸ and Canada⁹.

Various government agencies have also begun to recognize the merits of P2G:

- An industry panel advising the European Union’s hydrogen research program said in 2011, “hydrogen has the potential of storing virtually unlimited amounts of renewable energy to be converted back into the grid by stationary fuel cells with high efficiency and quick response times, enabling incorporation of large amounts of intermittent solar and wind power into the grid as base load.”¹⁰
- The UK’s Department of Energy and Climate Change (DECC) “2050 Pathways Analysis” indicates that energy storage using hydrogen is a critical area.¹¹ Sandia National Laboratories concluded in 2011 that “Hydrogen energy storage is an ideal match for renewables of all scales, especially large-scale wind.”¹²
- The National Renewable Energy Laboratory has examined the potential of storing large amounts of hydrogen in the natural gas pipeline system, and developed a lifecycle cost analysis of hydrogen versus other technologies for electrical energy storage demonstrating positive benefit to cost ratios under a variety of scenarios.¹³
- A recent report on energy storage funded by the European Commission Fuel Cell and Hydrogen Joint Undertaking identifies a major role for hydrogen energy storage if Europe is to meet its 2050 carbon goals. The report identifies the potential need in Europe for several hundred GW of electrolyzer capacity to serve energy storage needs, with up to 170 GW in Germany alone. It states that the use of electrolytic hydrogen in the gas grid, transportation or industrial sectors can productively utilize nearly all excess renewable energy.¹⁴

⁸ <http://www.iea.org/media/workshops/2014/hydrogenroadmap/13hydrogenicsrobertharvey.pdf>

⁹ <http://www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/ontario-picks-contenders-for-wind-solar-energy-storage/article19901932/>

¹⁰ https://www.sintef.no/upload/Materialer_kjemi/kurs_konferanser/symposium-Water-electrolysis-and-hydrogen-as-a-part-of-the-future-renewable-energy-system.pdf

¹¹ <https://www.gov.uk/2050-pathways-analysis>

¹² <http://prod.sandia.gov/techlib/access-control.cgi/2011/114845.pdf>

¹³ <http://www.nrel.gov/hydrogen/pdfs/48360.pdf>

¹⁴ <http://www.fch-ju.eu/sites/default/files/4-FCH%20JU%20-%20NL%20Panel%205%20%20Energy%20Storage%20study%20%28ID%201356957%29%20%28ID%201375431%29%20%28ID%201375739%29.pdf>



Power-to-Gas: The Case for Hydrogen White Paper

UTILIZING NATURAL GAS PIPELINE SYSTEMS

HYDROGEN INJECTION AND BLENDING

The existing natural gas pipeline system provides an existing and ubiquitous network that could potentially be used for delivering hydrogen in the form of a hydrogen-natural-gas blend. The hydrogen/natural gas mixture can then be delivered to end use systems for use with or without separation. Natural gas pipelines are widespread and highly interconnected throughout North America, while being well monitored, maintained, and regulated.

Because the physical and chemical properties of hydrogen are different from natural gas, the permissible hydrogen fraction is limited. Research studies have suggested that volume fractions of up to 20% could be tolerated, although the highest current limit in Europe is 12% (Holland) with most standards below 5%.¹⁵ The gas grid in Hawaii currently delivers gas containing 10% hydrogen.¹⁶ Research and analysis is in progress by various entities in the U.S. to determine appropriate blending limits. A test and evaluation project on this topic is currently in progress at the University of California, Irvine.

METHANATION

Another method of utilizing the natural gas pipeline system is to methanize the hydrogen prior to injecting it by combining the hydrogen with carbon dioxide, from waste sources for example, to create methane. The resultant renewable methane (assuming 100% renewable electricity as the energy source) is interchangeable with conventional natural gas and can be stored and transported over the natural gas system and used without restriction. Very large amounts of over-generation from renewables could be accommodated via methanation, which opens the possibility of synergistically de-carbonizing both the electricity and natural gas grids.

POWER-TO-GAS ECONOMIC ANALYSIS

The economics of Power-to-Gas depend upon the ultimate use of the hydrogen and the type and amount of grid services provided and, like other technologies in early deployment, upon further reduction in system costs as designs evolve, performance improves and manufacturing volumes increase. A variety of storage and related functions can be performed by electrolyzers depending upon the system configuration and the value of the various functions performed.

¹⁵ <http://www.nrel.gov/docs/fy13osti/51995.pdf>

¹⁶ Hydrogen Delivery Technical Team Roadmap, U.S. DRIVE Partnership, 2013.



Relative to storage functionality, there are two broad categories of systems: those that return power to the grid (Power-to-Gas-to-Power) and those that store and use electrical energy in the form of gaseous fuel (Power-to-Gas). Several grid services can be provided by electrolyzer systems. These include:

- Energy time shifting (arbitrage)
- Voltage and frequency regulation
- Ramping
- System Capacity
- Rapid Demand and Supply Response
- T&D investment deferral

Analysis of system cost effectiveness requires assessment of the value of various functions that can be performed by various system configurations and then optimization of the system dispatch over the time period being analyzed to achieve optimal economic dispatch. Such analyses are dependent upon the local power system and regional economics, so that these analyses must be done on a localized basis. Full-up modeling of the western U.S electricity grid under alternative deployment scenarios utilizing differing mixes for battery and P2G resources is being conducted by the National Renewable Energy Laboratory and the University of California, Irvine and initial results will be published later this year. Initial results from these analyses of energy conversion using electrolysis illustrate the potentially compelling business case for Power-to-Gas.

Figure 6 shows the cost of producing hydrogen and methane respectively under various prices for input electrical energy. Currently applicable time-of-use rates in Southern California are in the \$0.07/kWh to \$0.09/kWh range. However, new rate and market structures being developed by the California Independent System Operator (CAISO) and the electric utilities will make the effective cost of electricity significantly lower by providing rate offsets or revenue streams for a variety of grid functions. Depending upon location, additional revenue (or rate discounts) could be available for voltage and frequency support, as well as various types of investment deferral that will likely include alternative forms of energy storage. For the current discussion, these effects are captured through the range of input electricity prices of zero (free curtailed electricity) to \$0.06/kWh (potential future off-peak rate).

The results of this analysis show that, based upon expected progress on technology cost, hydrogen and methane can be produced at costs comparable to conventional vehicle fuel. This is without consideration of any renewable fuel premium, which could be in the range of \$2 per gasoline gallon equivalent in the 2030 time frame.¹⁷ Alternatively, intermittent

¹⁷ ICF International. <http://www.caetc.com/wp-content/uploads/2014/04/ICF-Report-Final-2.pdf>



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renewable electricity could be converted to fuel, transported on the gas grid, and redelivered as fully dispatchable renewable electricity (via existing combined cycle or natural-gas-capable fuel cell generators) at less than \$0.07/kWh. This is net of conversion losses (55% fuel-to-electricity efficiency and no charge for surplus electricity).

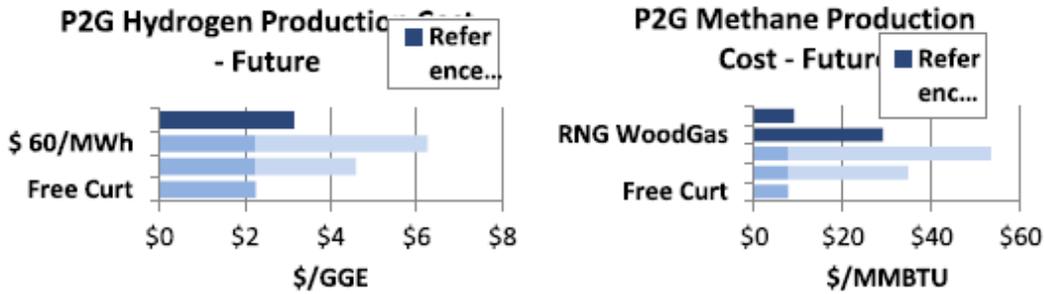


Figure 6 – Production Cost of Fuel via Power-to-Gas

As noted below, grid services provide potential additional revenue streams that can further enhance the value proposition for Power-to-Gas systems. Figure 7 illustrates the value of shifting electricity consumption to the least expensive time (arbitrage) and also from providing ancillary services to the grid operator. The analysis employs the assumptions used in the current DOE H2A model

“Future Central Hydrogen Production from PEM electrolysis v3.0” which features a base feedstock cost of \$0.066/kWh).¹⁸ The potential ancillary services provided include regulation, spinning reserve and non-spinning reserve. Electrolyzer behavior was calculated using an operations optimization model that maximizes revenues and minimizes operating expenses. The value of grid services can generally be expected to



Figure 7 – Potential Incremental Value of Electrolyzer Providing Grid Services

¹⁸ http://www.hydrogen.energy.gov/h2a_production.html



increase at higher levels of renewables penetration.

POLICY AND REGULATORY ISSUES

There are a number of features of Power-to-Gas that differ from other storage technologies such as batteries, compressed air and pumped hydro. Most notably, the value of P2G is maximized when the use of stored energy can be either in the form of electricity or fuel. It will be important for market structures and tariffs to recognize this attribute. Although not the dominant scenario, there are other examples of mixed pathways that have been accepted by the California Public Utilities Commission (CPUC), such as use of electricity to make ice used for space cooling without reconversion. Compressed air could also be used for direct mechanical drive for example. Because innovation can be expected to produce more mixed-energy-mode storage scenarios, it is important to anticipate them in development of policy and regulation. Other rules and standards may need to be adapted as well, for example, modifying spinning reserve standards to accommodate rapid-response systems that do not employ rotating equipment.

In addition, like other developmental technologies, Power-to-Gas will require research, development and demonstration. Support from state and federal agencies will be critical to reducing cost and ensuring that the potential of P2G is reached. Currently, RD&D funding for battery technology is orders of magnitude greater than that for P2G. A robust P2G RD&D program should be a priority for the state of California.

SUMMARY

The case for using hydrogen and/or methane to store renewable energy is compelling for a number of important use cases. Power-to-Gas energy storage leverages an already existing storage infrastructure that has a vast amount of capacity, the natural gas grid, making P2G an excellent candidate for long-duration storage applications. It is unique because it is a multi-functional technology that serves use cases that support the electricity, transportation and heating sectors.

- Electrolysis is the only viable and commercially proven method of producing hydrogen from highly variable renewable electricity generation. Electrolyzers can provide a dynamic response to supply and load fluctuations – a critical factor in grid stabilization.
- Once produced, hydrogen can be used for high-value applications such as for clean transport fuel therefore turning electricity into a high value road fuel capable of extended range and rapid fueling characteristics.



Power-to-Gas: The Case for Hydrogen White Paper

- Hydrogen, or methane generated from hydrogen, can also be injected into the natural gas pipeline system providing a flexible method of storing renewable energy for all the traditional uses of natural gas.
- The use of widespread electrolysis in California will not adversely affect the drought situation as the water converted by the electrolyzers is modest in amount, can be reclaimed water, and can be recovered in some cycles such as when used in a fuel cell.
- The need (and opportunity) for bulk energy storage in California is potentially in the TWh range, given the developing “duck curve”, the mandate for energy storage procurement and the state’s goals to transition to non-petroleum vehicle fuels.
- The cost of fuel produced via Power-to-Gas is competitive with other pathways to produce renewable fuel and the cost competitiveness will increase as the need for (and value of) grid services increases.
- P2G can be cost effective for electricity storage if the cost of input electricity is low such as at times of surplus supply.
- The value proposition for P2G as grid storage is being developed along with other forms of energy storage, but important market-structure, regulatory and policy issues must be addressed in the near term to capture this value starting with increased awareness of the multiple facets and successful international deployment of P2G.


APPENDIX
SUMMARY OF ANALYSIS ASSUMPTIONS

Primary Assumptions – P2G		
Electrolyzer Cost - Future	314.15 \$/kW	DOE H2A Future Central Electrolysis Model v3.0 - Escalated to Year 2015 Dollars
Electrolyzer Cost - Current	478.3 \$/kW	DOE H2A Current Central Electrolysis Model v3.0 - Escalated to Year 2015 Dollars
Fixed O&M Cost	25 \$/kW-yr	Average of Source A from Alex - "A: Behnam Zakerin, Sanna Syri "Electrical energy storage systems: A comparative life cycle cost analysis", Renewable and Sustainable Energy Reviews, 2014/15.
Cost of Money	10%	
Regulation Service	38.5 \$/MWh	"Ancillary Services: Technical and Commercial Insights" by Brendan Kirby, July 2007
Regulation Fraction	2% of Capacity	"Ancillary Services: Technical and Commercial Insights" by Brendan Kirby, July 2007
Spinning Reserve Service	8.4 \$/MWh	"Ancillary Services: Technical and Commercial Insights" by Brendan Kirby, July 2007
Spinning Reserve Fraction	100% of Capacity	
Economic Life	15 years	
Dispensing and Delivery Capital Cost	1.4744 \$/kg H2	DOE HDSAM for LA Area
Electrolyzer Efficiency	44.7 kWh/kg H2	DOE 2015 target

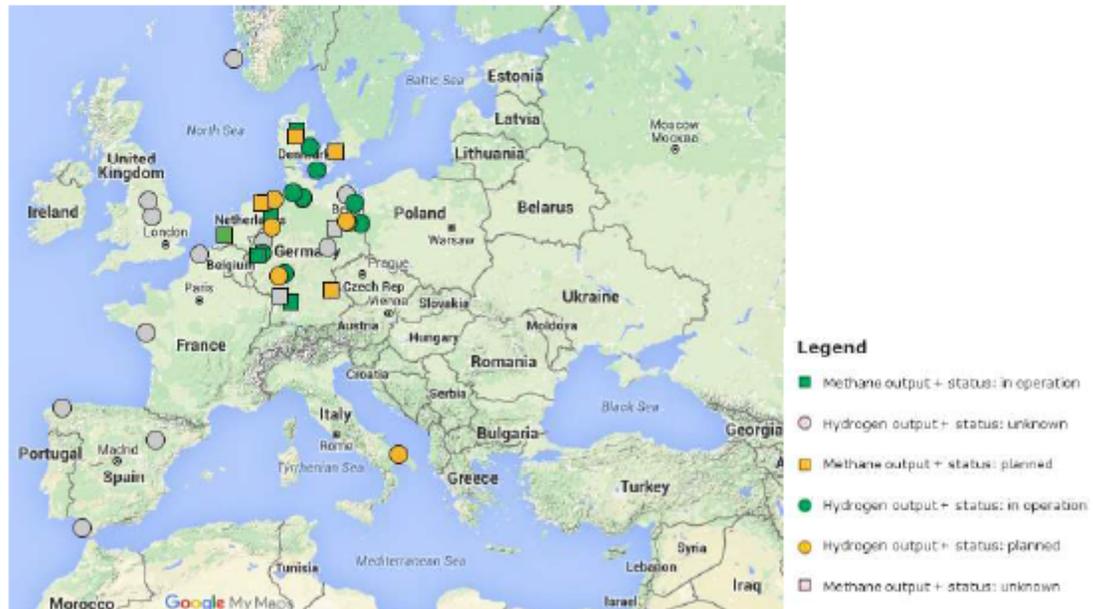


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REPRESENTATIVE HYDROGEN ENERGY STORAGE USE CASES

Case	Description	Hours of storage	Power to electrolyzer	Power out	Benefits
1	Addressing the duck curve	8	0.5 to 1 MW	1 MW	Renewable firming, ramping, capacity, regulation, energy, reserves
2	Utilizing surplus renewables for fuel	(8)	1 MW	0	Regulation-up, curtailment charges, FCEV fuel sales
3	Integrated power and fueling	TBD	TBD	TBD	DG benefits, deferral, plus EV power and FCEV fuel
4	Investment deferral / peak shaving (substation)	4	1 MW	1 MW	T&D upgrade deferral, energy time shift, regulation, reserves
5	DG and Voltage / VAR support	8	1 MW	1 MVAR	VAR support, voltage support, peak shaving, reserves

POWER-TO-GAS PROJECTS IN EUROPE





Further information can be found at: <http://www.europeanpowertogas.com/demonstrations>

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White Paper published on October 8, 2015

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Responses to Comment Letter from California Hydrogen Business Council
(Comment Letter 36)

Response to Comment 36-1:

Staff recognizes the value of fuel cells as a possible option to reduce emissions in a variety of applications. The Draft Plan discusses fuel cell technology in a number of control measures found in Appendix IV-A of the Plan.

Response to Comment 36-2:

Chapter 10 has been updated to expand on both power to gas strategies and hydrogen as a transportation fuel.

Response to Comment 36-3:

For the revised draft, fuel cell technologies will be explicitly mentioned as a potential zero-emission technology.

Response to Comment 36-4:

Chapter 10 has been updated to expand the discussion on the need to supplement renewable energy. Please refer to the “Challenges and Opportunities in Moving Towards 100 Percent Renewable Power” section.

Response to Comment 36-5:

Chapter 10 has been updated to expand on both power to gas strategies and hydrogen as a transportation fuel.

Response to Comment 36-6:

Chapter 10 has been updated to expand on hydrogen infrastructure discussion. Staff acknowledges the receipt of the “Power-to-Gas: The Case for Hydrogen White Paper” document.

Comment Letter from California Trucking Association (Comment Letter 37)

August 19, 2016

South Coast Air Quality Management District
21865 Copley Dr
Diamond Bar, CA 91765



Submitted Electronically

Thank you for the opportunity to comment on the Initial Draft of the 2016 Air Quality Management Plan (AQMP). The California Trucking Association (CTA) is the nation's largest statewide trade association representing the trucking industry.

Trucking Will Meet and Exceed “Fair Share” Emission Reductions without “Further Deployment”

California's trucking industry is already subject to the most stringent emission regulations in the nation. In the past ten years, the California Air Resources Board (CARB) adopted a comprehensive suite of air quality rules which regulate nearly every facet of the in-use emissions from heavy-duty trucks. The industry spends approximately \$1 billion annually in compliance costs for these rules, which include:

- Statewide Truck and Bus Rule
- Statewide Drayage Truck Regulation
- Transport Refrigeration Unit Air Toxic Control Measure
- Heavy Duty Tractor-Trailer Greenhouse Gas Reduction Measure
- Commercial Vehicle Idle Reduction Program
- Heavy Duty Vehicle Inspection Program
- Periodic Smoke Inspection Program

Increased California-only costs from State strategies to reduce the carbon intensity and price the carbon content of fuel such as the Low Carbon Fuel Standard (LCFS) and Cap and Trade will also cost the trucking industry somewhere between \$500 million and \$1 billion annually through 2020¹.

These existing regulations are estimated to by the Air Resources Board (ARB) achieve a 71% reduction in NOx from current levels.

¹ Assumes 3 billion gallons of diesel consumed annually 2016-2020. Conservatively estimate CO2 allowance price to remain at auction floor. Low costs in 2016 of \$0.13/gallon increased cost from Cap and Trade and a \$100/MTCO2 LCFS credit price. High Costs in 2020 of a \$0.17/gallon increased cost from Cap and Trade and a \$200/MTCO2 LCFS credit price.

37-1

Estimated Emissions from Medium/Heavy-Duty Trucks		
	Remaining NOx (tpd)	Reduction from Current Levels
Current Regulations	43	71%
Current and Proposed CARB Mobile Source Strategy	28	81%
Current, Proposed and CARB Further Deployment On-Road Heavy Duty	17	89%
Current, Proposed, and AQMP Incentives (Table 4-15)	8	95%

*Based on 2012 - 2031 Summer Planning Inventory for Class 26 - 8 Diesel Trucks.

Proposed, quantified measures in CARB's Mobile Source Strategy increase the reductions to **81%** without the anticipation of further deployment or development of cleaner technologies. As discussed throughout the AQMP Advisory Group process, each sector was anticipated to help achieve a "fair share" reduction goal of 80% from current levels. Trucking is forecasted to exceed this goal without further action beyond current regulations and proposed, quantified measures in the CARB Mobile Source Strategy.

Current and proposed on-road heavy duty measures account for the lion's share of reductions under CARB's Mobile Source Strategy.

37-1
Con't

South Coast NOx Reductions in CARB Mobile Source Draft Strategy (tpd)				
Measure Concepts by Source Category	70% Reduction 80ppb Standard (2023)	Percent of Total	80% Reduction 75ppb Standard (2031)	Percent of Total
On Road Light Duty				
Current Programs	47	87%	59	91%
Proposed Programs	0	0%	1	2%
Further Deployment	7	13%	5	8%
Total Category Reductions	54	100%	65	100%
Trucks and Buses (ORHD)				
Current Programs	97	72%	115	77%
Proposed Programs	3	2%	23	15%
Further Deployment	34	25%	11	7%
Total Category Reductions	134	100%	149	100%
Off-Road Federal and Int'l				
Current Programs	9	16%	15	23%
Proposed Programs	1	2%	12	18%
Further Deployment	48	83%	38	58%
Total Category Reductions	58	100%	65	100%
Other Off-Road				
Current Programs	23	61%	32	68%
Proposed Programs	1	3%	5	11%
Further Deployment	14	37%	10	21%
Total Category Reductions	38	100%	47	100%
Total Expected NOx Reductions	284		326	

CARB's Mobile Source Strategy also incorporated several measures for which they have not yet quantified (NYQ) emission reductions or cost, but plan to in the coming years. These NYQ measures include programs to lower in-use emissions and incorporating criteria pollutant benefits from the recently released Final Rule for the Second Phase of the Environmental Protection Agency (EPA) and National Highway Transportation Safety Administration's (NHTSA) Heavy-Duty Vehicles and Engines Greenhouse Gas and Fuel Efficiency Standards (Phase 2).

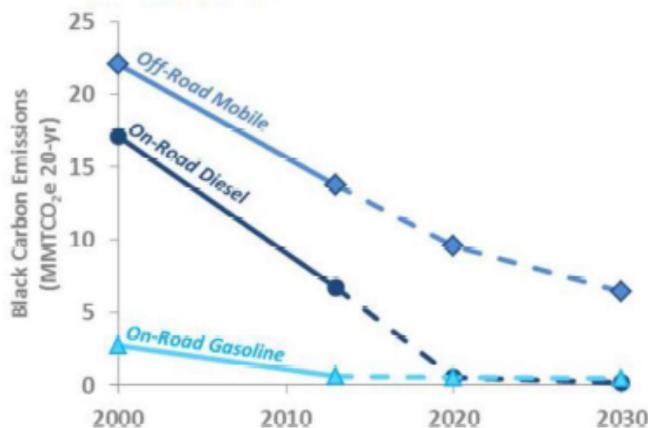
37-2

EPA/NHTSA anticipates that their Phase 2 rules will result in as much as a 10.2% reduction in downstream NOx by 2040². Cost-effective programs to lower in-use emissions also hold great promise as emission control deterioration accounts for a large part of the total T6-T7 EMFAC vehicle category emissions.

In addition to progress on regional air quality, localized health risk from diesel PM has also been drastically cut. As of 2023, with very few exceptions, all heavy-duty trucks in the South Coast Air Basin will be equipped with particulate matter (PM) filters. CARB's own May 2015 evaluation of PM filters³ found that "PM filters virtually eliminate PM from truck exhaust".

This is reflected in CARB's recent emissions inventory for black carbon⁴, for which diesel PM is a close surrogate.

Figure 2. Black Carbon Emissions from On-Road and Off-Road Mobile Sources with Existing Measures.



37-3

² Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles - Phase 2 Regulatory Impact Analysis, Table 5-42

³ <http://www.arb.ca.gov/msprog/onrdiesel/documents/DPFEval.pdf>

⁴ <http://www.arb.ca.gov/cc/shortlived/meetings/04112016/appendixa.pdf>

This is further reflected in a comparison between today's assumed PM emissions and those used to characterize health risk from diesel PM just 16 years ago⁵⁶.

	PM2.5 Emission Factor (g/mile)	% Reduction
Diesel Risk Reduction Plan (Appendix VII)	0.670	
EMFAC2011 (2010+ zero-mile)	0.035	-94.8%
EMFAC2014 (2010+ zero-mile)	0.004	-99.4%

37-3
Cont

Serious Concerns with MOB 01-04 and MOB-08

We have serious concerns about the proposed control measures MOB-01 through 04 ("Facility Measures") and portions of MOB-8 ("Fleet Rules").

CTA is strongly opposed to the regulation of mobile sources such as trucks and transport refrigeration units via freight facility emission caps and performance targets. The proposed Facility Measures may leave the door open for the adoption of such regulations. These concepts would represent an unprecedented, and legally questionable, expansion of the SCAQMD's regulatory authority of the freight industry. Given the remarkable progress demonstrated to date, we do not believe such a draconian regulatory expansion is either appropriate or warranted at this time.

We are also concerned about any expansion of the AQMD's Fleet Rules to private trucking fleets. The extensive legal history on the Fleet Rules should make it clear that any such expansion would be a pointless and wasteful exercise which would tie up valuable resources that could otherwise go towards achieving real air quality progress.

Because of the limited authority the district has to regulate mobile sources, we would urge the AQMD to continue to work collaboratively with CARB, the EPA and the industry to further the progress towards zero and near-zero emission technologies.

There is ample history and evidence to show that this collaborative approach has and will continue to achieve significant air quality progress while continuing to balance economic concerns.

37-4

⁵ <http://www.arb.ca.gov/diesel/documents/rrpapp7.PDF>
⁶ http://www.arb.ca.gov/msei/msab_oct_workshop_10_07_2013_final.pdf

CTA Supports Targeted, Cost-Effective Incentives

The CTA will continue its work with State, Federal and Local stakeholders to bring about additional incentives to the South Coast Air Basin to further air quality progress. The CTA has strongly supported recent, successful bipartisan legislative efforts at the State level to reauthorize the Carl Moyer Program and set aside a portion of the Greenhouse Gas Reduction Fund for deployment of near-zero emission technologies.

The Initial Draft AQMP anticipates the potential of a \$5.1 billion incentive program for Medium and Heavy Duty Trucks which would achieve another 20 tons per day by 2031 by replacing nearly 130,000 trucks to help implement the State's "Further Deployment" commitment. Because of the assumed grant amount of \$35,000 - \$50,000 per unit, the likely private sector investment necessary to realize such a program would likely increase the overall costs to somewhere closer to \$10-15 billion. It is of note that such a program would actually far exceed CARB's committed tons under "Further Deployment" for the entire On-Road Heavy-Duty Sector.

37-5

A basic flaw in the way the analysis is framed in the Draft AQMP is using an assumption that 130,000 truck projects will in fact meet cost-effectiveness guidelines as set in the Carl Moyer Program. Because of the low NOx and PM emissions from 2010 and newer diesel engines, even assuming a replacement project vehicle achieves a 90% reduction at a new 0.02g/bhp-hr low NOx standard would make it difficult to reach traditional cost-effectiveness thresholds with a typical 3-5 year project life.

Future stakeholder discussions will need to explore issues of continued cost-effectiveness in a world of diminishing returns as emissions levels get further towards zero. SB513 (Beall-2015) allows adjustments to, specifically, Moyer cost-effectiveness thresholds through a public process. Such a discussion may be productive to further the case for additional public dollars to assure the public and policymakers that our emission control programs continue to be targeted at achieving the most cost-effective use of public and private investment.

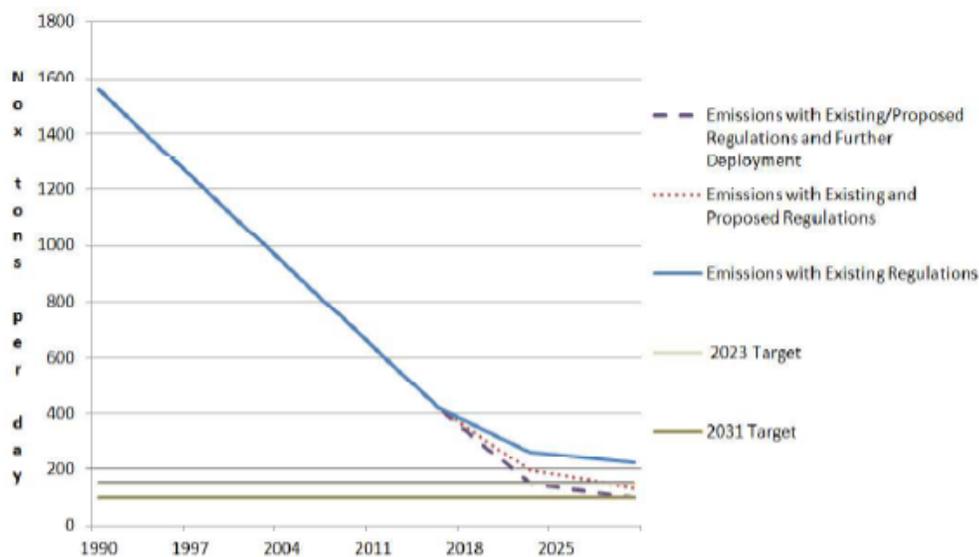
AQMP Should Provide Additional Historical Context

While the current draft AQMP does provide useful historical context for policymakers regarding our remarkable air quality progress, it could better highlight certain historical data on NOx reductions to more simply frame the choices which are outlined in the draft plan.

37-6

For instance, while pages 1-6 through 1-10 of the draft plan demonstrate the progress made on ozone since 1990, because this is primarily a NOx focused plan we believe

reductions in NOx achieved by existing and proposed regulations and incentives since that same timeframe should be highlighted.⁷



37-6
Con't

For instance, implementing the estimated 33 ton per day improvement from the “further deployment” of technologies in 2031 would reduce an additional 2.1% of NOx beyond what will be achieved by regulations and incentives already adopted and quantified using the same 1990 baseline as Figure 1-4. This is roughly equivalent to the average annual emission reduction achieved in a single year between 1990 and 2031.

⁷ Historical NOx (1990 levels) from California Almanac of Emissions and Air Quality – 2009 Edition
http://www.arb.ca.gov/aqd/almanac/almanac09/textfiles/table4_12.txt

Conclusion

Thank you for the opportunity to comment on the draft plan. If you have any questions, please feel free to contact Chris Shimoda at cshimoda@caltrux.org

Thank You,



Eric Sauer, Vice President of Policy and Government Relations
(916)373-3562

Responses to Comment Letter from California Trucking Association (CTA)
(Comment Letter 37)

Response to Comment 37-1:

The State Mobile Source Strategy includes a measure titled "Further Deployment of Cleaner Technologies" for on-road heavy-duty vehicles. The SCAQMD along with U.S. EPA are identified as implementing agencies under this measure. As such, the draft 2016 AQMP includes two measures MOB-07 and MOB-08 to seek additional emission reductions to help implement the "Further Deployment" measure. Staff recognizes that heavy-duty trucks have already achieved significant NOx reductions but believes additional reductions are needed wherever feasible, especially since some sectors, e.g. aircraft, may not be able to achieve as great a percent reduction.

Response to Comment 37-2:

Staff appreciates the comments regarding U.S. EPA's final Phase 2 rulemaking. The NOx emission reductions associated with the final rule are modest compared to the needed NOx reductions for the region to attain federal air quality standards. U.S. EPA notes this in the final rule. As such, U.S. EPA plans to initiate the development of more stringent engine emission standards for NOx, and has recently stated its intent to do so in response to SCAQMD's petition for rulemaking for a national ultra-low-NOx truck standard.

Response to Comment 37-3:

Compared to those from old diesel engines, today's diesel PM emissions are much lower and the associated health risk has been drastically cut. Nevertheless, the current health risk still dominates cancer risk in the Basin and thus, needs to be lowered to protect public health.

Response to Comment 37-4:

See Response to Comment 23-5 regarding facility emissions cap and performance targets.

While the SCAQMD staff prefers to work with industry stakeholders to identify actions that result in additional emission reductions, there may be a need to develop fleet rules within the SCAQMD's legal authority if such actions do not lead to additional emission reduction to help meet the State Mobile Source Strategy "Further Deployment" measures. Staff recognizes that fleet rules would need to receive a waiver from U.S. EPA if they were extended to private fleets.

Staff appreciates the comment and plans to work closely with CARB and U.S. EPA.

Response to Comment 37-5:

Staff appreciates the comment supporting incentives funding.

There are several scenarios analyzed to determine the incentive funding needed. Carl Moyer cost-effectiveness is one approach. The other is a per vehicle incentive, which could be much higher than the Moyer cost-effectiveness criteria. Staff believes that such funding levels are appropriate based on CARB's Technology Assessment for Low NOx Heavy-Duty Diesel Engines.

Response to Comment 37-6:

SCAQMD staff appreciates the comments regarding NOx emission reductions since the 1990's. However, as shown in the attachment demonstration, additional NOx emission reductions from on-road heavy-duty trucks along with NOx emission reductions from other stationary and mobile sources will be needed. Historically, significant NOx emission reductions have occurred from a smaller number of trucks and other equipment since their emissions on a per unit basis, were significantly higher than the emissions from current trucks. As such, a greater number of trucks will need to be turned over to achieve the 33 tons/day called for in the State SIP Strategy.

Comment Letter from the City of Irvine (Comment Letter 38)



Community Development Department

www.ci.irvine.ca.us

One Civic Center Plaza, P.O. Box 19575, Irvine, CA 92623-9575

(949) 724-6000

August 18, 2016

Dr. Philip Fine
Deputy Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 92765

Subject: City of Irvine Comments: June 2016 Draft of the 2016 Air Quality Management Plan

Dear Dr. Fine:

The City of Irvine appreciates the opportunity to provide comments on the June 2016 Draft of the 2016 Air Quality Management Plan (AQMP). The Draft 2016 AQMP is a monumental effort and the City of Irvine recognizes that the AQMP is critical to the region's ability to achieve federal air quality standards and healthful air.

The following general comments and recommendations are offered by the City of Irvine on the initial June 2016 Draft 2016 AQMP. The City of Irvine reserves the right to make further comments at a future date when the full impact of the proposed 2016 AQMP can be assessed:

1. **Fragmented and Incomplete Document Release:** The City of Irvine's review of this initial draft was conducted in the absence of critical, related documents which have yet to be released by the South Coast Air Quality Management District (SCAQMD). Documents not yet released include the Draft 2016 AQMP Program Environmental Impact Report (EIR) and the AQMP's Socioeconomic Analysis. The City of Irvine finds it extremely difficult to grasp and conduct a comprehensive review and comment of the Plan, when only certain elements of the Plan have been released.

Due to the lack of a complete document, the City of Irvine respectfully submits at this time, preliminary higher-order comments that will hopefully assist in AQMD's preparation of a revised September 2016 Draft AQMP for review and comment. Please note that the City of Irvine reserves the right to make further refinements or revisions to these comments, in

38-1

Dr. Philip Fine
August 18, 2016
Page 2

addition to submitting additional and final comments, when all 2016 Draft AQMP documents are released in a coordinated and integrated review process.

38-1
Con't

The City of Irvine also reserves the right to make further comments at a future date when the full impact of the document can be analyzed, and further recommends that the SCAQMD consider releasing all elements of the Plan simultaneously along with the Draft Program EIR.

2. Action Plan for Incentive Strategies: The Draft 2016 AQMP contains a number of measures that are designed to be implemented through incentives to accelerate the penetration of zero- and near-zero emission technologies, and to further reduce emissions from other mobile and stationary control measures. The Draft 2016 AQMP also notes that as much as \$14 billion in funding needs to be identified in order to implement "incentive strategies."

It is the City of Irvine's understanding that the \$14 billion in funding need represents the total funding need of all the agencies responsible for implementing the proposed measures. The City of Irvine recommends that the incentive funding need for each proposed measure be detailed in the 2016 AQMP Plan and Appendices, particularly Table IV-A-1 and Table IV-A-2 in Appendix IV-A, and that funding need by agency also be summarized and presented.

38-2

The Draft 2016 AQMP should include an action plan that identifies the funding source for all incentive strategies. It should also include a discussion on the impact to local jurisdictions. For example, in regards to measures EEC-02 (Co-Benefits from Existing Residential and Commercial Building Energy Efficiency Measures (NOx and VOC) and EEC-03 (Additional Enhancements in Reducing Existing Residential Building Energy Use (NOx and VOC), there needs to be more details as to the recipient of the incentive and who will be required to complete the bookkeeping and monitoring.

3. EGM-01: Emission Reduction from New Development and Redevelopment Projects: The purpose of this measure is to mitigate and reduce emissions from new development and redevelopment projects. The description of EGM-01 is very broad and could be interpreted to add a new fee to new development or redevelopment in the SCAQMD service area, similar to Rule 9510 adopted by the San Joaquin Valley Air Pollution Control District.

38-3

Dr. Philip Fine
August 18, 2016
Page 3

As a local government, we have concerns about this prospective measure absent more information on how a development fee might impact local land use under our authority. To the extent that such a control measure would redistribute or constrain growth in the region, it could undermine the greenhouse gas (GHG) and pollutant emission reductions that are imbedded in the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) that the City of Irvine worked diligently to complete with the Southern California Association of Governments. A fee might not be the best way to ensure that new structures accommodate clean technologies, and the AQMD should also explore other cost effective methods.

38-3
Con't

Because of its ambiguity and potential overlap with the RTP/SCS, this proposed measure should not be included among the AQMP's enforceable, committed measures. The City of Irvine recommends that the Orange County Council of Governments, the subregional agency for Orange County, be included in any South Coast AQMD Working Group that is established or reconvened on this measure, to allow for meaningful dialogue on this proposed measure. Further, if this measure proceeds to rule development in the future, the SCAQMD needs to assure that any proposed rule will integrate with, and enhance the California Environmental Quality Act (CEQA) process and not impede the project approval process in light of CEQA timelines.

4. **Duplicative Measure: BCM-03: Further Emission Reduction from Paved Road Dust Sources:** The AQMP proposes that measures BCM-03 would include a review of existing National Pollutant Discharge Elimination System (NPDES) mandates and that this is conducted in conjunction with any potential rulemaking efforts. NPDES permits are administered by the local regional water quality control boards. The SCAQMD does not have jurisdiction over the issuance and maintenance of mandates required of NPDES permits. The City of Irvine requests that the SCAQMD remove reference to NPDES mandate review as to not confuse jurisdictional and implementation issues related to these permits.
5. **Unquantified Measures:** There are a number of measures that have not been quantified in the Draft 2016 AQMP. These are often referred to as "to-be-determined" or "TBD" measures. Based upon the review of the initial Draft 2016 AQMP, it is the City of Irvine's understanding that the Plan is capable of achieving federal air quality standards in absence of any of the TBD measures. The City of Irvine raises a concern regarding whether it is appropriate to include these types of measures in the 2016 AQMP, since they do not advance attainment. Inclusion of TBD measures implies some level of commitment toward delivering those measures even

38-4

38-5

Dr. Philip Fine
August 18, 2016
Page 4

though it has not been determined how many emission reductions they can provide, or at what cost. An economic analysis cannot be performed without the quantified benefits. The City of Irvine is concerned that the inclusion of TBD measures in the AQMP could allow the District staff to substitute a TBD measure in place of other quantified and committed measures after the 2016 AQMP is approved. The City of Irvine understands that in the future, the TBD measures may prove to be more cost effective than other committed measures. This kind of transfer should not be implemented as an administrative change, and should only be pursued through an appropriate public process. Until the time that either a backstop measure is needed or a TBD measure is identified to be more cost effective than one of the currently qualified measures, the City of Irvine requests that the TBD measures either be removed from the plan, or clearly separated from the quantified measures, and called out as uncommitted measures that require further development and evaluation.

38-5
Con't

Furthermore, should the TBD measures remain in the AQMP, the City of Irvine requests that the 2016 AQMP include a discussion that clearly states the purpose for including these strategies and the process required to incorporate them. Preferably, this process would include action by the SCAQMD Governing Board and opportunities for public review and comment.

Thank you again for the opportunity to provide input on this initial Draft 2016 AQMP. We appreciate your consideration of the comments provided in this letter and we look forward to your responses. We hope that future releases of the Draft 2016 AQMP will be coordinated to include all appendices and supporting documents to ensure we all are afforded a comprehensive review. Please do not hesitate to contact me if you have any questions.

Sincerely,


Susan Emery
Director of Community Development

Responses to Comment Letter from the City of Irvine
(Comment Letter 38)

Response to Comment 38-1:

The release of the Draft AQMP in June 2016 was designed to allow the public to become familiar with the proposed strategy and provide comments to be included in a Revised Draft Plan. Release dates have been staggered for the Draft Program Environmental Impact Report (PEIR) and Socioeconomic Assessment in order for the supporting documents to analyze the latest version of the Plan. As such, the costs and benefits analysis was released August 31, 2016 and the PEIR was released mid-September in time for review of the Revised Draft Plan that was released early October. Similarly, Appendix V and VI did lag behind the release of the Draft Plan but were available by September and provided over 30 days to review and comment. All those comment periods overlapped to allow for a comprehensive, concurrent review by the public.

In addition, staff is providing a 60-day public review and comment period for the PEIR and while each of the draft Socioeconomic chapters have been given a 30-day public review and comment period, a complete updated Socioeconomic Assessment with appendices was released in November for another 30-day public review and comment period. Comments on the Revised Draft Plan were encouraged to be provided 30-days after its release so staff could incorporate changes into the Draft Final Plan scheduled to be released in early December.

Response to Comment 38-2:

The funding needs identified in the AQMP is based on meeting the emission reductions associated with the State Mobile Source Strategy "Further Deployment of Cleaner Technologies" measures for light-duty vehicles, on-road heavy-duty vehicles, federal and international sources, and off-road equipment. Tables 4-17 to 4-21 show a breakdown of potential funding by these sectors.

The deployment of cleaner technologies will be implemented by CARB, U.S. EPA, and the SCAQMD to incentivize cleaner vehicle and equipment. However, the specific implemented agency may depend on the source of funds or other factors.

For ECC-02, no additional costs are anticipated beyond those that would otherwise be allocated to reduce GHG emissions through State programs. This measure seeks merely to quantify criteria pollutant reductions from these GHG programs. ECC-03 is for existing residential buildings in the Basin and incentives are based on equipment, not the agency.

A Financial Incentive Funding Action Plan is being prepared to identify potential sources of funding. The Financial Incentive Funding Action Plan will be a companion document to the AQMP.

Response to Comment 38-3:

Under state law, the SCAQMD is required to assess rules and regulations adopted by other air agencies to ensure that all feasible measures are provided in the AQMP. As such, staff will be taking comments on whether adoption of a rule similar to San Joaquin Rule 9510 is appropriate for the South Coast Air Basin or whether there are other actions/mechanisms to address potential emissions associated with new or redevelopment projects. In addition, the facility-based measures will be developed in a public process and will initially seek enforceable actions to achieve emissions reductions. Please see Response to

Comment 23-4 for details of the revised version of the facility-based measures in the Revised Draft Plan. Finally, staff encourages the Orange County Council of Governments to participate in the working group during the development of this measure.

Response to Comment 38-4:

Please see Response to Comment 6-2 with regard to NPDES requirements and clarification that staff did not intend the language to mean that SCAQMD would seek to change NPDES permit requirements.

Response to Comment 38-5:

As mentioned in the Draft AQMP, the SCAQMD mobile source measures are proposed to help implement the State Mobile Source Strategy "Further Deployment of Cleaner Technologies" measures. The SCAQMD is identified as an implementing agency along with CARB and U.S. EPA. As such, many of the SCAQMD mobile source measures do not have associated emission reductions since the reductions are provided in the State Strategy (see Appendix IV-B). Please see Response to Comment 7-5 for further discussion of TBD measures.

Comment Letter from the City of Mission Viejo (Comment Letter 39)

TRANSMITTED VIA EMAIL

August 19, 2016

Dr. Philip Fine
Deputy Executive Director
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 92765

SUBJECT: City of Mission Viejo Preliminary Comments:
South Coast Air Quality Management District
June 2016 Draft of the 2016 Air Quality Management Plan

Dear Dr. Fine:

The City of Mission Viejo appreciates the opportunity to review and comment on the June 2016 draft of the 2016 Air Quality Management Plan (AQMP). It is the City's understanding that comments received on the June 2016 AQMP (hereafter referred to as the Plan) will assist the South Coast Air Quality Management District (AQMD) in the development of a Revised Plan that will be released in September 2016. Accordingly, the comments presented below are higher-order comments and recommendations that the City of Mission Viejo respectfully submits for your consideration. The City of Mission Viejo further notes that an additional policy-level and a technical review and comment of the Plan will be conducted upon AQMD release of a September 2016 Revised Plan, when all related Plan documents are released and made available for a concurrent review, particularly the Draft Program Environmental Impact Report.

The City of Mission Viejo comments are as follows:

1. Fragmented Release of 2016 AQMP Documents for Public Review:
The June 2016 Draft Plan was released for review and comment in absence of critical appendices and related documents, including the Draft Program Environmental Impact Report and the draft Socioeconomic Assessment. This staggered release of Plan documents prevents reviewing agencies from conducting a comprehensive and concurrent review and comment of the Draft Plan across all related documents and appendices.

Recommendation: The City of Mission Viejo respectfully recommends that when all Revised Plan documents are released, that a review period be established that allows for a minimum, 60-day concurrent review of all released documents, due to the complexity and technical nature of the Plan documents and to accommodate recognized holidays that may occur within the review period timeframe (Labor Day, Thanksgiving Holiday).

Further, to allow for a streamlined review of the revised Plan documents, the City of Mission Viejo would welcome a red-line version of the Revised Plan, to enable the reader to easily grasp revisions that have been made to the Plan documents since the June 2016 draft.

39-1

2. Incentive-Based Measures to Reduce Emissions:

The June 2016 Draft Plan includes several, voluntary Incentive-Based measures in the Plan's portfolio of proposed strategies to reduce emissions to satisfy Clean Air Act standards. These voluntary, incentive-based measures include ECC-03: existing residential building energy usage; CMB-01: transition to zero and near-zero emission technologies for stationary sources; and, CMB-02: commercial and residential space and water-heating).

The City of Mission Viejo supports AQMD's consideration of an elective strategy approach to reduce emissions, and AQMD's recognition that incentive-based strategies can co-exist and supplement traditional command-and-control, rule adoption measures. The City of Mission Viejo further observes that the Plan quantifies the anticipated emissions reductions that could be achieved from each of the above-referenced measures, and the Plan identifies that the emissions reductions from voluntary, incentive-based measures "must be real, quantifiable, surplus, enforceable and permanent." [2016 Draft AQMP: Technical Appendix IV-A; page IV-A-12].

Recommendation: The Draft AQMP outlines a series of key elements that must be applied to the implementation of Voluntary Incentive Measures, in order for the emissions reductions to count towards the Clean Air Act emissions reductions. Such actions include AQMD's future development of guidelines for each of the voluntary measure that addresses the federal test for each measure to be real, quantifiable, surplus, enforceable and permanent, which the AQMP refers to as the Integrity Elements.

The City of Mission Viejo urges the South Coast AQMD to include and consult with local government representatives on Voluntary Incentive Measure implementation. This would include any Ad Hoc Working Groups, public outreach, and introductory briefing workshops tailored specifically to Voluntary Incentive Measure implementation. In particular, the City of Mission Viejo would welcome the opportunity for AQMD to overview and explain how current local government processes and permitting requirements may be impacted by implementation of any of the Voluntary Incentive Measures.

As example, some questions that warrant further explanation and clarification include the following:

- a) If incentives are awarded for residential weatherization, appliance efficiency, and renewable energy sources (solar photovoltaic roofs) by retrofitting existing residential buildings, as proposed under Measure ECC-03, what is the process and impact to local jurisdiction building and permitting procedures? Also, would the proposed retrofit improvements also require a separate application or approval process through the South Coast AQMD?
- b) How are the incentive monies for the improvements allocated? Is there a fair-share allocation by county and by city? Is there an application process that must be pursued? Further, does the application process prioritize applications from disadvantaged communities? The City of Mission Viejo is concerned that such an emphasis or priority for disadvantaged communities would result in many jurisdictions and applicants being ineligible for funding opportunities to conduct

39-2

- energy-related retrofits, if there are no disadvantaged communities in the jurisdiction, such as in South Orange County.
- c) Is a contract agreement necessary or required as part of the program requirements, as referenced in the Plan, and if so, who are the parties to the contract agreement?
 - d) Who is responsible for the requirements of record-keeping, tracking, reporting and monitoring of the retrofitted improvements? Would this be a new reporting process that would be established between the South Coast AQMD and local governments, perhaps similar to the annual AB2766 reporting requirements of local subvention funds?
 - e) Is there a prototype of the Voluntary Incentive Program implementation that can be made available, either as an Appendix or separate report to the 2016 Plan?

39-2
Con't

3. Proposed Measure EGM-01: Emission Reduction from New Development and Redevelopment Projects

The 2016 draft AQMP includes a proposed "Emission Growth Management Measure," referred to as EGM-01: Emissions Reduction from New Development and Redevelopment Projects. This measure is proposed for adoption in 2017, with an implementation period of 2018 – 2031, with South Coast AQMD as the Implementing Agency, and with anticipated Plan emissions reductions to be determined.

The prototype for this measure is a Rule 9510 that was adopted in December 2005 by the San Joaquin Valley Air Pollution Control District (SJVAPCD). Rule 9510 requires both development projects of a certain scale, and transportation projects emitting a certain level of construction exhaust emissions, to be subject to the Rule. The Rule requires the project applicant to perform an emission generation analysis, from which the SJVAPCD calculates how much emissions must be reduced, and the project applicant must then achieve the required emissions reductions on-site (voluntarily) and/or through payment of an off-site mitigation fee. The City of Mission Viejo also understands that the 2016 Plan is required to include a consideration of this proposed measure, as State law requires AQMD to consider all feasible measures, including measures adopted by other air districts.

39-3

Recommendation:

- a) Re-assess adoption and implementation dates for EGM-01 and reconvene an AQMD Working Group for EGM-01: The draft 2016 Plan identifies a 2017 adoption period for the proposed measures, with implementation beginning in 2018. There are many and significant questions on this proposed measure that warrants consultation and recommendations from affected stakeholders, including local government, the business community, and the development community. While the Plan recognizes that an AQMD Working Group was established to discuss a similar proposed measure in conjunction with the 2007 AQMP, this group has not met for several years.

The City of Mission Viejo recommends that an AQMD EGM-01 Working Group be immediately convened to initiate discussion on the proposed measure, and that at minimum, representatives from the Orange County Council of Governments and the Orange County Transportation Authority be included in the Working Group. All local jurisdictions in the South Coast Air Basin should also be

informed on all outreach and meeting materials, and webcasting opportunities provided for all Working Group meetings.

The City of Mission Viejo also recommends that AQMD consider more realistic adoption and implementation dates for EGM-01, and delay the adoption and implementation dates currently identified in the draft Plan, to accommodate a robust discussion of EGM-01 with stakeholders.

- b) Address how the rule would interact, conflict, or supplement existing development approval and environmental requirements: The City of Mission Viejo is concerned how the implementation of the proposed measure would interact with existing and proposed regulations and requirements. As example:
- (1) Would an EGM-01 emissions generation analysis be separate or coordinated with local jurisdiction environmental analysis (i.e., CEQA) requirements for a project? What happens if AQMD's threshold for an emissions generation analysis is imposed upon a project that requires no discretionary action by the local jurisdiction?
 - (2) Would EGM-01 impose an additional fee on development projects? If such a fee were imposed, how would AQMD use the fee, and would the benefits of the fee-capture return back to the city and county from where the fee was collected?
 - (3) How does the potential requirement of an emissions generation analysis complement or conflict with the State's proposal to require a Vehicle-Miles Traveled analysis for development projects, or with the Governor's "by-right" housing proposal?

39-3
Con't

4. Funding for Incentive-Based Measures

At a July 19, 2016 public workshop on the draft 2016 Plan, South Coast AQMD staff identified that significant funding – approximately \$11 to \$15 billion over 15 years – is needed to attain the emissions reduction standards called forth in the Plan. The City of Mission Viejo inquired, and AQMD staff confirmed, that such funding must be reasonably expected to be available, and AQMD staff noted that an action plan to secure the incentive funding would be developed.

Recommendation: While an overall estimate of funding need has been identified for the incentive-based measures over the 15-year planning period of the 2016 AQMP, there is no identification of:

39-4

- a) how much of the incentive funding is needed for each proposed measure;
- b) how much of the funding would be allocated to the different agencies involved in measure implementation (i.e., the California Air Resources Board versus the South Coast AQMD);
- c) what are the funding sources that would be secured to fund the incentive-based measures; and,
- d) what is the cost-effectiveness of the incentive funding for each proposed measure.

The City of Mission Viejo would recommend that AQMD's proposed Incentive-Based Measures Funding Action Plan be developed and released concurrently with

the Revised Plan documents, and that said Action Plan include a discussion of the questions noted above.

Thank you for the opportunity to provide input on the June 2016 draft of the 2016 AQMP, and for consideration of the larger-order comments and questions noted above, in AQMD's preparation of a September 2016 Revised Draft of the 2016 AQMP. The City of Mission Viejo looks forward to conducting a comprehensive policy and technical level review of the September 2016 Revised Draft Plan, in coordination with the to-be-released Socioeconomic Assessment and the Draft Program EIR.

39-4
Con't

Additionally, the City of Mission Viejo concurs with the Orange County Council of Governments (OCCOG) comments dated August 16, 2016 on the June 2016 draft of the 2016 AQMP.

Should you have any questions or seek clarification on our submitted comments, please do not hesitate to contact Ms. Elaine Lister, Director of Community Development, at 949/470-3069, or via email at elister@cityofmissionviejo.org.

With appreciation,

Dennis R. Wilberg,
City Manager
City of Mission Viejo

cc: Keith Rattay, Assistant City Manager
Elaine Lister, Director of Community Development
Larry Longenecker, Planning Manager
Marnie O'Brien Primmer, OCCOG Executive Director
Marika Poynter, OCCOG TAC Chair (City of Irvine)
Greg Nord, Orange County Transportation Authority
Gail Shiimoto-Lohr, GSL Associates

Responses to Comment Letter from the City of Mission Viejo
(Comment Letter 39)

Response to Comment 39-1:

Please see Response to Comment 38-1 regarding the staggered release of the Plan and related documents such as the Socioeconomic Assessment and Draft PEIR. Per your suggestion, the Revised Plan was released with track changes to assist the reader with the changes made since the Draft Plan.

Response to Comment 39-2:

Staff encourages the commenter to participate in the working groups that will be established to develop the guidelines necessary for each of the incentive programs. Staff agrees that clarification will need to be made during this process including impact to existing local planning procedures, how the incentive money will be allocated, contract agreements, as well as recordkeeping and reporting responsibility. These issues will be clarified as part of the working group process with full public input.

Response to Comment 39-3:

Staff will include local governments and sub-regional organizations as part of the working group.

Staff appreciates the comment to set later timelines for the adoption/implementation of the measure and will consider revising the dates.

Response to Comment 39-4:

Staff is preparing a draft Financial Incentive Funding Action Plan as a companion document to the AQMP. The draft Financial Incentive Funding Action Plan will be released for public comments prior to the adoption of the AQMP with ample time for public review.

Please see Response to Comment 38-2 with regard to funding for each measure, agency responsibility, funding sources, and cost-effectiveness. Staff will take into consideration the commenter's recommended actions.

Comment Letter from Climate Resolve (Comment Letter 40)

AQMD Comment Form

Page 1 of 2

DRAFT 2016 AIR QUALITY MANAGEMENT PLAN



2016 AQMP Comment Form

Please enter your contact information, comments and/or upload comment files below. The information collected may be used to provide further information about public workshops and hearings, and other events related to the 2016 AQMP. Responses to comment will be compiled and included in the final Plan package.

***Fields Required to Submit a Comment**

Form Information

Date Created 08/19/2016	Time Created 12:27 PM	AQMP Year 2016
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Commentor Contact Information

Commentor's Name * DAVID FINK	Organization * CLIMATE RESOLVE	City LOS ANGELES	State CA	Zip Code 90013
If not representing a specific organization, please enter "No Affiliation".				

Comments (Unlimited Size)

Thank you for the opportunity to comment on the 2016 AQMP. The document is robust on comprehensive with a few notable areas we would like to see included and/ or expanded. The first is in regards to cool roof technology. In Chapter 4 you reference cool roofs the associated benefits including: energy efficiency gains, reduced ozone formation and emission reduction. It should be noted that in 2015 the city of Los Angeles began requiring cool roofs on all new residential construction as well as re-roofs when over half the roof is being replaced and that the Los Angeles Department of Water & Power (LADWP) offers a two tiered cool roof rebate. To expand the benefits beyond LA City an LA county (and surrounding counties) residential cool roof mandate or a statewide mandate could be implemented. Also to expedite deployment SoCal Edison and other utilities could offer a similar rebate to the one offered by LADWP. The next item which we would like to see language on is the benefits and opportunities for cool pavement technology. Similar to cool roofs, cool pavements can dramatically lower ambient temperatures on very hot days and provide cooler temperatures in the evenings as well. Wide-spread deployment of cool paving materials could significantly reduce the urban heat island effect. There likely needs to be some technological development before the materials are cost effective but with demand an economy of scale can be quickly built leading to more affordable materials. Much like cool pavements cool coatings have the same benefits but unlike cool pavements they are ready to be deployed and have been on a small scale. The main difference is that they are not made to withstand high traffic roads but are applied on parking lots, service roads etc. mandates could be in place that require cool coatings on new parking lots and service roads etc. The third area that should be included is urban forestry or more specifically an expanded urban tree canopy. The Los Angeles Sustainable City pLAn calls to "Initiate tree and tree-canopy registry to document LA's urban forest to guide tree planting investments". This is a good start with tree canopy expansion targets as a potential longer term goal. Trees provide much needed urban cooling through shading and evapo-transpiration. All this leads to lower ground level air temperatures cooling buildings, streets, cars and other forms of transportation. Lastly, active transportation is referred to in Chapter 4 (page 4-35) under "SCAG's Regional Transportation Plan/Sustainable Communities Strategy and Transportation Control Measures". Another document that could be included to promote biking, walking and taking public transit is the Mobility Plan 2035, the City of Los Angeles' transportation policy which was updated in 2015. The Mobility Plan calls for among other things: a variety of new mobility options, such as frequent reliable transit, mobility hubs, a safe bicycle network, more walkable neighborhoods, ride-sharing and car sharing. Thank you again for the opportunity to comment on the 2016 AQMP. Please let us know if you have any questions or if we can provide any further details based on the above comments.

40-1

40-2

40-3

40-4

40-5

Upload Additional Comment and Supporting Files (30 Mb Maximum per file)

AQMP Comments Files

Note: Supported upload files include all versions of Microsoft Office, jpeg, tiff, PDF, mp3, mp4, and text files.

Commentor Signature *



For More Information Contact: Angela Kim (akim@aqmd.gov) (909) 396-2590

Responses to Comment Letter from Climate Resolve
(Comment Letter 40)

Response to Comment 40-1:

Ongoing meteorological and chemical transport modeling will help determine whether and to what extent cool roofs lead to improvements in air quality. Control measure ECC-04 addresses cool roofs.

Response to Comment 40-2:

SCAQMD staff is aware of the potential impacts of cool pavements and cool coatings on local air quality. Staff is in the early stages of quantifying these effects with meteorological and chemical transport modeling. For more discussion, the Plan includes a possible control measure (ECC-04) that addresses cool roofs that is achieved with cool coatings. Cool roofs can be achieved by various methods such as applying special coating material to existing roofs or adding cooling material into roofing material during manufacturing. The control measure addresses the coating method only. The details can be found in Appendix IV-A.

Response to Comment 40-3:

Cool pavements can have significant effect as well. However, the data to investigate the cool pavement impact is not readily available yet, therefore the control measure addresses cool roofs only at this time. Staff will continue to evaluate the cool roof and pavement impacts on air quality.

Response to Comment 40-4:

Staff is aware of the potential for increases in urban forestry to reduce building cooling emissions and increase walkability of urban areas. However, more urban vegetation can also increase biogenic emissions. A modeling analysis would be required to quantify the net effect of urban forestry on air quality.

Response to Comment 40-5:

Staff supports efforts by SCAG to promote biking, walking and taking public transit. As the commenter is aware, the emission reductions achieved by SCAG's 2016–2040 RTP/SCS are included in the baseline emissions inventory in the 2016 AQMP so it is critical these programs are successful for the 2016 AQMP to achieve its goals in a timely manner.

Comment Letter from Del Amo Action Committee (Comment Letter 41)

Florence Gharibian (Florence.Gharibian@yahoo.com)
Chair, Del Amo Action Committee
Los Angeles Environmental Justice Network Member
21715 Lasso Lane
Walnut, California 91789
(818) 303 5914

Subject: ID No. EPA-HQ-OAR-2010-0682 Proposed Refinery Rule Comments

Dear Interested Party:

I began my environmental work at the USEPA National Field Investigations Center at the Denver Federal Center in November 1972. I worked in the library and assisted the research scientists at the Center in their valuable work. Much of that work focused on determining pollution of major water bodies through remote sensing. The only computer in the office was a monster machine located in the Director, James Gallagher's office. After graduating from the University of Colorado in 1974 I transferred to the San Francisco Region 9 Office where I continued my career in the Library. In 1981 I accepted an assignment with the State of California working as the Director of the Office of Public Information and Participation during a tumultuous time when the Stringfellow site in Riverside County, CA was notorious and controversial. Ultimately I accepted a position as a Waste Management Specialist with the State of California. When I retired in May 2011 I was a Branch Chief in the Enforcement Program supervising staff in Los Angeles County. I am honored now to serve as the Chair of the Del Amo Action Committee and as a member of the Los Angeles Environmental Justice Network. The comments submitted today are based on my own review of the Draft Refinery Rule.

41-1

I thank God for the work I do in protecting the environment. When I began my employment at the USEPA passion ran high. The path taken was new ground. So many educated people worked so hard to find the right way to clean up our environment. I traveled to Riverside County to work on the Stringfellow site in the early 80's when the air there was acid, air pollution an ever present reality. So many, working hard and applying the best science have accomplished much since that time. It is time now to take the next steps. Continuing to clean up our air is an urgent priority. I know the petroleum industry influences environmental rule making. I'm sure you have received many comments from representatives of this industry. They have the ability and money to hire lawyers and write comments arguing they've done enough, are doing enough, will have to spend money needlessly etc. Please consider the comments of the environmental groups who were forced to sue the USEPA to get something

done just as seriously as you consider the comments from the petroleum industry and their representatives.

41-1
Con't

I have the following comments:

Comment One

The regulations refer to the Maximum Available Control Technology. Utilizing the Maximum Available Control Technology must include using the best science available to determine real time emissions from the refineries. This data must be available to the public.

The USEPA fact sheet on the proposed rule includes this quote:

"The Clean Air Act requires the EPA to review and revise the national emission standards for air toxics, as necessary, taking into account developments in practices, processes and control technologies since the issuance of the original standards."

The California South Coast Air Quality Management District Board participated in a meeting in May 2014. A presentation was given at this meeting on Optical Sensor equipment. The South Coast web site includes several references to this equipment.

41-2

This technology is used to quantify emissions from refineries. The South Coast Air Quality Management District is currently considering purchasing this equipment for use in monitoring air emissions at refineries in the District. **When this equipment was used to quantify emissions from refineries the emissions were much higher than those reported by the refineries.**

I know that the term Maximum Available Control Technology is not a term applied to monitoring equipment traditionally. I am asking the USEPA to demand that the refineries use equipment to monitor their emissions that utilizes the best science available to measure as accurately as possible the emissions from the refinery. I am also asking the USEPA to evaluate the monitoring equipment described in the information found on the South Coast web site and to consider employing this equipment to do air emissions monitoring.

Comment Two:

Please provide information on how the USEPA will insure that the refineries are complying with the new rule when it is finalized. Will the USEPA conduct inspections; do air monitoring to insure that the refinery emissions data is accurate? Will the USEPA conduct enforcement and impose meaningful penalties on violators when violations are cited as a result of inspections?

41-3

It is my experience that without effective inspections and enforcement, rules and regulations are not effective. This component must be identified and defined in the regulations.

In preparing the comments I'm submitting today I reviewed a document completed by the California Environmental Protection Agency in February 2014; *Improving Public and Worker Health and Safety at Petroleum Refineries, Report of the Interagency Work Group on Refinery Safety (February 2014 Report)*. The work group was convened in the aftermath of a serious chemical release and fire at the Chevron Richmond oil refinery in August 2012. Governor Brown formed an Interagency Working Group to examine ways to improve public and worker safety through enhanced oversight of refineries and to strengthen emergency preparedness in anticipation of any future incident. The Working Group consists of participants from 13 agencies and departments, as well as the Governor's Office. The report is available at the California Environmental Protection Agency site on the Interagency Refinery Task Force.

41-3
Cont'

Many of my comments are based on and are reinforced by the Task Force findings.

At one point in my career I served as an inspector for the CA Department of Toxic Substances Control in Los Angeles. In doing this work I went to industries located in Los Angeles Environmental Justice communities. I also went to some of the Los Angeles oil refineries. My observations when doing this work prompted me to research the age of the refineries in Los Angeles. The Chevron El Segundo Refinery was built in 1912, Conoco Phillips Wilmington, 1917, Exxon/Mobile Torrance, 1907. The process of refining oil is not new. Having seen some of these refineries myself, the refineries are not new. It is logical to assume that fugitive emissions and accidents at these refineries are more likely to occur at equipment and piping that is, in some cases, over 100 years old.

Comment 3:

The refineries should be required to conduct inventories and provide information on equipment that will be replaced because it is old and might cause "unintended" releases. (I use the word unintended because that is the word used by the USEPA in the introduction to the regulations. I think this word is entirely too polite.) To support this comment I offer a quote from the February 2014 Governor's report referenced above: The USEPA should consider implementing a process similar to the Near Miss Incident Report used in the airline industry. This process enables workers to submit information on equipment requiring repair or other problems they see when they are doing their work. This program prohibits retaliation against employees identifying problems.

41-4

Following is a quote from the CalEPA February 2014 report:

"Workers involved in facility operations, represented by the United Steelworkers, reported that refinery structures are old and outdated, corrosion is pervasive, process safety management staffing has been reduced, and preventive maintenance is often not conducted before failure occurs. Workers also expressed concern that those who exercise their authority to shut down unsafe operations may experience retaliation by management, that relying on shut-down actions by workers shifts responsibility away from management's obligation to ensure mechanical

integrity through preventive maintenance, and that maintenance and safety problems identified by refinery workers are not always corrected in a timely fashion. Several workers additionally reported that, in their view, management does not take seriously the monitoring of employee exposures to hydrogen sulfide, which can be immediately fatal."

41-4
Con't

The workers at a refinery are at greatest risk of the health impacts from the hazardous chemicals. They have the highest rate of exposure to the chemicals. They are at greatest risk from an accident resulting in an explosion or fire.

Comment 4

I hold in my hand a notice routinely published in the Los Angeles Times. The headline in the notice is WARNING. The notice states "Chemicals known to the State of California to cause cancer, birth defects and other reproductive harm are in and around oil fields," The notice is published by eleven refineries in Los Angeles. The health risks of the hazardous chemicals used or created at refineries are based the health evaluations on individual chemicals. The understanding of the cumulative health risks of the multiple chemicals found on refineries and at industries on or near refineries is non-existent or limited at best. This inadequate understanding argues for conservative regulatory limits and the use of the most comprehensive and accurate testing possible.

On August 13, 2014 the California Environmental Protection Agency announced the availability of Cal EnviroScreen 2.0. The Office of Environmental Health Hazard Assessment created this screening methodology that is used to help identify California communities that are disproportionately burdened by disproportionately burdened by multiple sources of pollution.

41-5

The development of the screening tool was identified as a first step in assuring that all Californians have access to environmental justice, the California Environmental Protection Agency determined that it was necessary to identify the areas of the state that face multiple pollution burdens so programs and funding can be targeted appropriately toward improving the environmental health and economic vitality of the most impacted communities. Many Californians live in the midst of multiple sources of pollution and some people and communities are more vulnerable to the effects of pollution than others. For this reason, the Agency and the Office of Environmental Health Hazard Assessment (OEHHA) developed a science-based tool for evaluating multiple pollutants and stressors in communities, called the California Communities Environmental Health Screening Tool.

A cursory review of the data provided in this screening tool demonstrates that many of the communities identified as communities threatened by the burden of serious pollution are located in the same locations as the majority of California's refineries. This truth strengthens the argument for the most accurate air emissions data for the refineries. It argues for conservative emission standards, it argues for making the refineries as safe and healthy as possible for the people who work at the refineries and the communities surrounding them.

Closing Comments

I offer in my comments several reliable sources of information. The information is up to date, all published in 2014. The reports and other information I've cited are developed by organizations with integrity and knowledge. Please review this information and my comments in your work to finalize these important regulations. It matters.

Sincerely Yours,

Florence Gharibian

Florence Gharibian
Chair, Del Amo Action Committee

Responses to Comment Letter from Del Amo Action Committee
(Comment Letter 41)

Response to Comment 41-1:

Staff appreciates your interest in the environmental issues of our region, years of dedicated work for the health of others, and participation in the development of the 2016 AQMP.

Response to Comment 41-2:

While this comment appears to be directed toward a proposed U.S. EPA refinery rule, it was submitted as a comment on the AQMP. Staff will respond to individual points as they may relate to the AQMP. The AQMP includes control measure FUG-01 which proposes to study and implement a Smart-LDAR program to monitor fugitive emissions from refineries and oil and gas production facilities. Optical Gas Imaging is included as one of the potential technologies to be utilized for fugitive emission monitoring.

Response to Comment 41-3:

The U.S. EPA has the ability to conduct inspections, do air monitoring and conduct enforcement at refineries located in SCAQMD. In most instances however, SCAQMD staff performs those tasks. Several SCAQMD teams are dedicated to ensuring compliance at refineries on a regular basis. As part of their routine compliance duties, SCAQMD inspectors verify compliance with leak detection and repair regulations at refineries to limit fugitive emissions from pipelines, storage tanks and processing equipment.

Response to Comment 41-4:

The SCAQMD heavily regulates and enforces refineries under the RECLAIM program, however, the Plan is proposing further assessment of the RECLAIM program to continue to improve or even possibly sunset the program and transition to a command-and-control approach. Retaliation at regulated facilities is already prohibited by the Clean Air Act, 42 U.S.C. § 7622. Staff appreciates the real concern this could pose for an employee who is ever in that position.

Response to Comment 41-5:

The SCAQMD has a comprehensive toxic control program, oversees compliance with AB 2588, and requires cumulative health risk analyses in CEQA documents. The Draft Plan does include an education and outreach measure (FLX-01) that is intended to increase awareness of existing regulations and how to further educate the public regarding air pollution and encourage local involvement to assure local neighborhoods are not being polluted unchecked. The Draft Plan also addresses oil fields in such measures as CMB-04 seeking to replace traditional non-refinery flares with gas handling equipment or procedures that are much cleaner and useful such as use as a transportation fuel. Please see Response to Comment 41-4 regarding refineries.

Comment Letter from Gateway Cities Council of Governments (Comment Letter 42)

AQMD Comment Form

Page 1 of 2

DRAFT 2016 AIR QUALITY MANAGEMENT PLAN



2016 AQMP Comment Form

Please enter your contact information, comments and/or upload comment files below. The information collected may be used to provide further information about public workshops and hearings, and other events related to the 2016 AQMP. Responses to comment will be compiled and included in the final Plan package.

*Fields Required to Submit a Comment

Form Information

Date Created 08/19/2016	Time Created 12:20 PM	AQMP Year 2016
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Commentor Contact Information

Commentor's Name * NANCY PFEFFER	Organization * GATEWAY CITIES COUNCIL OF GOVERNMENTS	City PARAMOUNT	State CA	Zip Code 90723
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If not representing a specific organization, please enter "No Affiliation".

Comments (Unlimited Size)

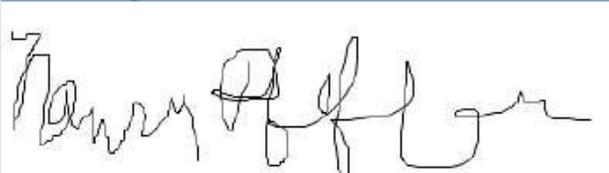
- 1) The draft AQMP proposes to reduce emissions in part by adopting a suite of incentives that would provide public funding to supplement private investment in cleaner, lower-emitting technologies. This is a constructive approach, provided that the District comes up with a clear plan for obtaining incentive funding and that this funding plan does not place undue burdens on either local governments or on employers in our region. 42-1
- 2) The plan includes a proposed measure denoted "EGM-01" which would consider controls on emissions from new development and redevelopment projects. The draft AQMP does not call for any emission reductions from this measure; instead, we understand that the District plans to convene a working group of affected parties to discuss and further develop this measure following adoption of the AQMP. We would like to be included in this working group. 42-2
- 3) The plan includes four measures focused on mobile sources associated with goods movement, denoted "MOB-01" through "MOB-04." The draft AQMP does not call for any emission reductions from these measures; instead, we understand that the District plans to convene a working group of affected parties to discuss and further develop these measures following adoption of the AQMP. We would like to be included in this working group. 42-3

Upload Additional Comment and Supporting Files (30 Mb Maximum per file)

AQMP Comments Files

Note: Supported upload files include all versions of Microsoft Office, jpeg, tiff, PDF, mp3, mp4, and text files.

Commentor Signature *

A handwritten signature in black ink, appearing to read "Angela Kim", is displayed within a rectangular box. The signature is fluid and cursive.

For More Information Contact: Angela Kim (akim@aqmd.gov) (909) 396-2590

Responses to Comment Letter from Gateway Cities Council of Governments
(Comment Letter 42)

Response to Comment 42-1:

Staff appreciates the comments regarding the incentive funding approach. Relative to the preparation of the Draft Funding Action Plan, staff has developed a set of guiding principles to secure and disburse incentive funds. One of the proposed principles addresses your concern regarding the need to minimize the economic impact from the funding source. The Funding Action plan will be proposed for consideration by the Board at the same time as the AQMP.

Response to Comment 42-2:

Proposed measure EGM-01 does not have any associated emission reductions at this time since the measure calls for formation of a working group to identify actions that could be taken to mitigate emissions from new and redevelopment projects. Staff welcomes Gateway Cities Council of Governments participation on the working group.

Response to Comment 42-3:

As noted in the Revised Draft 2016 AQMP, MOB-01 through MOB-04 are proposed to help meet the State SIP Strategy “Further Deployment of Cleaner Technologies” measures emission reductions. The measures seek to work collaboratively with affected stakeholders and the public to identify actions that could help achieve the State SIP Strategy emission reductions. A working group will be created to help implement the measures. Staff welcomes Gateway Cities Council of Governments participation on the working group.

Comment Letter from Gatzke Dillon & Ballance LLP (Comment Letter 43)



August 19, 2016

By Electronic Mail

Michael Krause
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765-4182
mkrause@acqmd.gov

Re: *Comments on Draft 2016 Air Quality Management Plan*

Dear Mr. Krause:

This letter is submitted on behalf of John Wayne Airport, Orange County (Airport or JWA) and contains the Airport's written comments on the Draft 2016 Air Quality Management Plan (Draft 2016 AQMP) issued by the South Coast Air Quality Management District (SCAQMD or District) on June 30, 2016. We appreciate the opportunity to provide comments and to continue to work constructively and cooperatively with the SCAQMD in evaluating and developing realistic airport emission reduction strategies for the Draft 2016 AQMP.

We hope that our past comments, our comments in this letter, and our continued cooperation in this process will allow us to make meaningful contributions toward resolving and addressing the complex airport regulatory issues associated with air quality in the Basin.

GENERAL COMMENTS

43-1

The Airport has the following general comments on the Draft 2016 AQMP:

1. First, it is important for us to emphasize the serious concerns the Airport has about SCAQMD's proposal to control indirect sources through "facility-based" mobile source measures, including MOB-04 (Emission Reductions at Commercial Airports). These types of control measures seek to reduce emissions from on- and off-road sources, which are within the exclusive purview of the California Air Resources Board (ARB) and the U.S. Environmental Protection Agency (EPA), both of which already have rules and regulations in place for these sources to significantly reduce criteria pollutant emissions. In addition, the Airport is concerned about the SCAQMD making commitments to the state and federal governments that it will control emissions through indirect source rules because SCAQMD lacks legal authority to adopt indirect source rules at airports.
2. Second, both the District and ARB have acknowledged that the proposed indirect source control measures, including MOB-04, are not necessary to meet the requirements of the federal Clean Air Act. Further, there is no emission reduction target for MOB-04, or any of the other indirect control measures, in the Draft 2016 AQMP, and there appears to be

43-2

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Michael Krause
 August 19, 2016
 Page 2

little or no emission reduction benefits from the indirect source control measures proposed. Instead, it is clear that additional mobile source emission reductions will come from new measures that call for greater emission reductions through accelerated turnover of older vehicles to the cleanest vehicles and equipment currently available, and increased penetration of commercially-available near-zero and zero-emission technologies through existing incentives programs.

43-2
 Con't

3. Third, the proposed facility based mobile control measures, including MOB-04, appear to leave the door open for the adoption of facility emission caps and performance targets; concepts which the Airport has repeatedly opposed. These concepts would represent a legally questionable expansion of the SCAQMD's regulatory authority over airports in the South Coast Air Basin.

43-3

4. Fourth, to the extent the SCAQMD attempts to impose airport emission caps and/or performance targets, a key concern will be the use of a baseline to measure emissions reductions and the apparent failure of this method to provide some type of "credit" to the Airport for the significant emission reduction measures that have already been implemented and are currently being implemented to reduce air quality impacts associated with Airport operations. These measures already provide: (i) more efficient fuel operations and consumption; (ii) the ability to manage aircraft operations in a more efficient manner; (iii) a reduction in the fugitive dust generated by aircraft activity at JWA; (iv) improvement in traffic circulation within the vicinity of JWA; and (v) the possibility for use of alternative fuels. In order to maintain equity and to avoid inadvertently "penalizing" those who voluntarily implement significant air quality reduction measures, the Draft 2016 AQMP should provide some type of "credit" to "sources" for these efforts rather than reflect these emission reductions into future emissions inventories and/or in baseline emissions inventories.

43-4

5. Finally, in addition to the general comments provided above, we also have a number of specific comments relating to the Draft 2016 AQMP discussion and analysis, which are provided below.

43-5

SPECIFIC COMMENTS

The District includes discussion of two categories of potential control measures included in the Draft 2016 AQMP; control measures to be implemented by SCAQMD and control measures to be implemented for sources under State and federal jurisdiction. The specific comments of the Airport address both of these categories of control measures.



Michael Krause
August 19, 2016
Page 3

A. MOBILE SOURCE CONTROL MEASURE – MOB-04 – EMISSION REDUCTIONS AT COMMERCIAL AIRPORTS

The District is proposing a number of new mobile source control measures. One of these proposed measures, MOB-04, Emission Reductions at Commercial Airports, focuses on imposing possible regulations on airports in the Basin. The Draft 2016 AQMP does not provide the specific program for this control measure, but, instead, describes the measure in broad, non-specific terms.

Although the Airport understands why this control measure has been provided in concept only at this point, the Airport is concerned with a number of potential issues regarding any type of indirect source control measure, including the District’s authority to regulate airports, direct accountability, and the possible imposition of a mitigation fee program or other clean fleet incentive program. The Airport would like to provide comments on each of these topics as follows:

1. District’s Authority to Regulate Airports

According to the Draft 2016 AQMP, it appears that the District is considering the use of an indirect source control measure, including a mitigation fee program, for proposed commercial aviation measures. We have discussed at length with the District, ARB, and the U.S. EPA our concern regarding the role of the airport proprietor with respect to the administration of air quality emission strategies at airports in the Basin. And, as you know, we have expressed strong opposition to the measures previously proposed by the District. The airports are not in favor of becoming the air quality “enforcers” for all airport users. In addition to our concern regarding the airport proprietor’s exact role and obligations under any “indirect source rule” that may be considered, we are concerned as to what, if any, penalties airport proprietors might be subjected to if one of their airport users fails to provide the required emission reductions in connection with their operation(s).

We also have serious doubt, particularly in the context of the Airport Noise and Capacity Act of 1990 (49 USCA §2151, *et seq.*) (ANCA), as to whether airport proprietors generally have sufficient residual regulatory authority to act effectively as the agencies implementing and enforcing any indirect source regulation imposed by the District. At a minimum, the District should receive adequate assurances from the Federal Aviation Administration (FAA), the Department of Transportation (DOT), and any other relevant federal authorities that airport proprietors do, in fact, have sufficient regulatory authority to allow them to make meaningful implementation choices, and which would allow them to enforce local regulations to achieve whatever mandates are imposed on them by the District.

43-6



Michael Krause
August 19, 2016
Page 4

We also continue to have a fundamental disagreement with the District regarding the extent of the District’s authority to regulate airports. Specifically, we continue to believe that, to the extent the District attempts to regulate aircraft related emissions, directly or indirectly (as is the case with an indirect source control measure), any such regulation would constitute a constitutionally impermissible local intrusion into a federally preempted field of regulation. (*People of State of Cal. v. Dept. of Navy* (1977) 431 F.Supp. 1271, 1281; *Washington v. General Motors Corp.* (1972) 405 U.S. 109, 92 S.Ct. 1396, 31 L.Ed.2d 727.) The District’s attempted indirect regulation of airport related emissions would be an impermissible and unconstitutional intrusion into an area which is pervasively and exclusively controlled by federal law and federal authority. (*City of Burbank v. Lockheed Air Terminal, Inc.* (1973) 411 U.S. 624, 633.)

43-6
Cont'

2. Direct Accountability

Another primary concern we have with any measure to reduce emissions from airports in the Basin is that it require direct accountability. We therefore want to reemphasize the position which has been consistently conveyed to the District regarding the role of the air carrier airports in the Basin in addressing the air quality challenges which face our region. Specifically, we continue to believe that any air quality regulations should ensure direct accountability for emissions. JWA strongly supports direct accountability for emissions related to aircraft operations and related emission sources, and is concerned that any indirect source control measure would inappropriately and unnecessarily blur the lines for direct accountability from these emissions sources.

43-7

3. Implementation of a Mitigation Fee or Clean Fleet Incentive Program

The Draft 2016 AQMP references a possible mitigation fee and/or clean fleet incentive program in the context of MOB-04. Specifically, in the proposed action section, the Draft 2016 AQMP indicates that these types of measures would require the District to partner with airports to incentivize cleaner aircraft to come to California airports and require the imposition of mitigation fees.

43-8

The Airport has a number of concerns with respect to the implementation of any type of mitigation fee program or program which requires airports to provide incentives for airlines to fly only their cleanest fleets in the Basin. First, it is unclear, among other issues, how such a mitigation fee program or clean fleet incentive program would be monitored and administered; how such a mitigation fee program/clean fleet program would be enforced; how the District would determine aircraft activity at individual airports in the Basin; what would be used as a baseline for monitoring purposes; and what type of emission sources would be regulated under the mitigation fee and/or clean fleet program.



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August 19, 2016
Page 5

Second, for many of the reasons discussed above, airport-enforced mitigation fee programs or clean fleet programs have continually been opposed by the FAA.

Third, mitigation fee programs imposed on airlines, in theory, may result in activity reductions or the use of the “cleanest fleet” where mitigation fees are imposed. Under a program of this type, presumably commercial aircraft and general aviation aircraft owners or operators pay a “mitigation fee” based upon some type of emission measurements or aircraft activity or both. It is unclear to what extent these types of measures impact the natural evolution of the commercial and general aviation community, and, in particular the new entrant aviation community, and to what extent they may effect competition in the Basin.

43-8
Con't

Fourth, and finally, any regulatory program that results in imposing mitigation fees or clean fleet incentive programs could potentially result in an enormous administrative burden to airports throughout the Basin.

B. EMISSIONS INVENTORY

Over the past several years, JWA has provided information to SCAQMD staff relating to its baseline emissions inventory as well as its projections for future aircraft activity (both general aviation and commercial aircraft) at the Airport. As this information indicates, and as the District knows, the Airport is under certain legal and operational constraints with respect to existing and future operations. We appreciate SCAQMD’s recognition of the uniqueness of the legal and regulatory constraints as well as the available infrastructure (existing and planned) at each of the airports in the Basin and the necessity of taking into account both the unique characteristics and available infrastructure at each of the airports in the context of the continued development and approval of any regulatory strategies, including proposed measure MOB-04.

One concern we have, however, is that it appears that none of the initially published data from SCAQMD provides JWA specific emissions inventories. Rather, it appears that all of the emissions inventory data for airport forecasts is based upon categories of sources with a reference to the 2016-2040 RTP/SCS data from SCAG. (See, e.g., Draft 2016 AQMP, Chapter 3). Unfortunately, SCAG did not use the data provided by JWA to forecast fleet mix and Landings and Take-offs (LTO) for 2040. JWA has provided the SCAQMD (via correspondence with Zorik Pirveysian of Intergra Environmental Consulting, Inc.) with JWA specific data. We therefore request that the Draft 2016 AQMP be revised to use the specific data provided by JWA to the District to forecast fleet mix and LTO’s at the Airport rather the data from SCAG which is not airport specific.

43-9

As indicated above, another key and continuing concern relating to the use of a baseline to measure emissions reductions is the current failure of this method to provide some type of “credit” to the Airport for the significant emission reduction measures that have already been



Michael Krause
August 19, 2016
Page 6

implemented and are currently being implemented to reduce air quality impacts associated with airport operations. As indicated above, in order to maintain equity and to avoid inadvertently “penalizing” those who voluntarily implement significant air quality reduction measures, the Draft 2016 AQMP should provide some type of “credit” to “sources” for these efforts and not simply “bake” into the baseline these significant emission reduction measures.

According to the Draft 2016 AQMP, quantified emission reductions that are real, surplus, permanent, and enforceable will be reflected in future emissions inventories as part of the Rate-of-Progress reporting requirements or *in the baseline emissions inventories* as part of future AQMP/SIP development. It is unclear from this statement what data SCAQMD will rely upon for the baseline emissions inventories and what data it will use for the estimated projected reductions in airport generated trips that could occur through implementation of the proposed control measures. In addition, if the baseline emissions inventories in the Draft 2016 AQMP will not be used by the District as the performance standards for proposed measures, the Draft 2016 AQMP must be revised to accurately indicate what performance standards or objectives the District will adopt for the air transportation industry. The Draft 2016 AQMP should also be revised to include a discussion of some type of “credit system” that will be provided for airports that have already implemented significant emission reduction measures.

43-9
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C. POTENTIAL INCONSISTENCIES BETWEEN EXISTING AND PROPOSED NEW CONTROL MEASURES

The long term control measures identified by the Draft 2016 AQMP to be considered by ARB for implementation continue to: (1) pursue approaches to reduce emissions from ground support equipment (GSE) (OFFS-04); (2) require zero emission airport shuttle-buses (ORHD-07); and (3) require fleet and facility modernization. We continue to be concerned about these long term control measures because, as you know, the SCAQMD already has a number of regulatory rules governing vehicle fleets. Any future regulatory measures should be consistent with these existing regulations. In addition, airports should not be required to regulate or administer emission reduction programs for vehicle fleets or GSE that they do not own or operate. As indicated above, this type of indirect source rule would not be within SCAQMD’s legal authority.

43-10

D. COST EFFECTIVENESS

Although the Draft 2016 AQMP includes a preliminary assessment of the cost effectiveness of available and proposed measures, this preliminary analysis does not adequately address the public policy concerns which the District must consider. In addition, the cost effectiveness of other proposed regulatory measures, including any possible mitigation fee program or clean aircraft incentive program, are not discussed. It is imperative that before any further analysis is conducted regarding any of the measures provided in the Draft 2016 AQMP directed toward

43-11



Michael Krause
August 19, 2016
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airports and airlines, that the District prepare appropriate and complete analyses of the cost effectiveness of all of the proposed measures as mandated by California law in order to provide the airports in the Basin with information which measures the full costs of any and all possible regulatory programs in terms of the increase in emission reduction costs versus program and improvement costs. (*See, e.g.*, Cal. Health & Safety Code 40440(e), 40703, and 40913(b)). The CALIFORNIA CLEAN AIR ACT also requires the District Governing Board to determine that the Draft 2016 AQMP is a cost-effective strategy that will achieve attainment of the state standards by the earliest practicable date. (CAL. HEALTH & SAFETY CODE §§40440(e), 40703, and 40913(b).)

Certainly, it is imperative that before any further analysis is conducted regarding any of the possible regulatory measures mentioned in the Draft 2016 AQMP directed toward airports and airlines, the District prepare appropriate and complete analyses of the cost-effectiveness of all of the proposed measures as mandated by California law. Particularly, before the District provides further information regarding possible regulatory approaches, it is important for the District to take a “hard look” at this issue and to provide the airports in the Basin with information which measures the full costs of *any* and *all* possible regulatory programs in terms of the increase in emission reduction costs versus program and improvement costs.

43-11
Cont

In addition to the program and improvement costs, we continue to be concerned about the effect any emission reduction strategies will have on new entrant air carriers, especially relatively small air carriers with a limited fleet mix, and the importance of maintaining a competitive airline environment in the Basin. A regulatory scheme which would inhibit competition would probably result in significantly higher air fares to and from the Basin than in other parts of the country, which could in turn have a seriously negative effect on the local economy. This issue must also be taken into account when addressing the cost effectiveness of the proposed measures.

E. EMISSION REDUCTIONS AND PERFORMANCE STANDARDS

Although the Draft 2016 AQMP has identified a number of control measures for the airport and airline industry, including MOB-04, as indicated above, the Draft 2016 AQMP fails to discuss any performance standards and objectives for these measures despite ongoing discussion that indicates that the District could quickly pivot to regulation, if necessary, and that such regulations are within the District’s legal authority. Have internal performance targets been established for these control measures? The Draft 2016 AQMP must provide any performance targets that have been established so that there is an opportunity to comment on the targets prior to developing specific control measures for the airport and airline industry.

43-12

In addition, although we understand that the rule development process will provide additional opportunity for public and stakeholder input as well as ongoing technical review, assessment of costs and environmental impacts, it is difficult to assess measure MOB-04 or the proposed State



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Implementation Plan (SIP) strategy measures, including ORHD-07 (zero emission airport shuttle buses) and OFFS-04 (zero emission GSE), without further information on their proposed parameters; we look forward to better understanding the District's proposals. That being said, and as the District has recognized, in many instances, controlling emissions at airports in the Basin is constrained by legal, operational, technological, and economic limitations. Therefore, we encourage the District to continue to be sensitive to and informed of such constraints when designing or implementing any regulations developed by SCAQMD and predicting associated emission reductions.

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CONCLUSION

In closing, thank you again for this opportunity to comment on the Draft 2016 AQMP. We look forward to continuing to engage in an open, thorough and responsive public process and assisting the District with its efforts to improve air quality in the South Coast Air Basin. If you have any questions regarding the comments set forth in this letter, please do not hesitate to contact us at your convenience.

Very truly yours,

A handwritten signature in cursive script that reads "Lori D. Ballance".

Lori D. Ballance
of
Gatzke Dillon & Ballance LLP

LDB/rif

cc: Mark Denny, COO, County of Orange
David Salardino, California Air Resources Board
Rhonda Runyon, California Air Resources Board
Barry Rondinella, Airport Director
Melinda McCoy, Airport Environmental Engineer

Responses to Comment Letter from Gatzke Dillon & Balance LLP
(Comment Letter 43)

Response to Comment 43-1:

Proposed measure MOB-04 is seeking to identify actions to help achieve the emission reductions associated with the State Mobile Source Strategy "Further Deployment of Cleaner Technologies" measures for light-duty vehicles, off-road equipment, and federal and international sources. Staff will be taking comments and input to identify actions that may be voluntary or regulatory in nature. Any proposed regulatory action by the SCAQMD will be within its legal authority.

Response to Comment 43-2:

See Response to Comment 43-1. Staff does not agree that these measures are not necessary. While they do not have separate emission reduction targets, this is because staff is seeking to identify additional actions through a public process (as discussed in MOB-04), to help meet the State Strategy emission reduction commitment.

Response to Comment 43-3:

MOB-04 is proposing that the overall AQMP emission reductions to attain federal air quality standard be used as an initial goal to help identify additional emission reductions. Staff will consider comments and input through the public process on identifying actions that result in additional emission reductions. The actions may be voluntary or regulatory in nature. Based on comments received, staff will work with affected parties to develop enforceable mechanisms to ensure that the resulting emission reductions remain permanent if the reductions are proposed to be included in the SIP.

Response to Comment 43-4:

Staff will work with affected stakeholders to evaluate what baseline emissions will be appropriate to identify actions that result in additional emission reductions.

Staff will take into consideration what actions have already resulted in additional emission reductions. If the actions are not recognized in the baseline and the actions are quantifiable and permanent, the resulting emission reductions may be taken as part of future Rate-of-Progress reporting and future AQMP revisions.

Response to Comment 43-5:

Staff appreciates your comments and participation in the development of the Draft Plan.

Response to Comment 43-6:

Staff believes that SCAQMD has the legal authority to regulate indirect sources as recognized by *National Ass'n. of Home Builders v. San Joaquin Valley Unified APCD*, 627 F. 3d 730 (9th Cir. 2009). Moreover, U.S. EPA's former indirect source regulation specifically identified airports as a type of indirect source. See "Indirect Source Controls: An Intersection of Air Quality Management and Land Use Regulation," *Loyola of Los Angeles Law Review*, 6-1-91, p. 1133. The 9th Circuit Court of Appeals rejected the contention that indirect source controls were preempted by the Clean Air Act's provisions regarding mobile sources. With

regard to any other potentially preemptive federal statute, we note that once the measure is approved into the SIP, it would be entitled to be harmonized with the provisions of that federal statute and upheld wherever possible. *Association of American Railroads v. South Coast AQMD*, 622 F. 3d 1094 (9th Cir. 2010). With regard to the airport's authority as a proprietor, this issue will be discussed further during the working group process to the extent there is a desire to rely on such authority.

Response to Comment 43-7:

Staff understands this comment to be suggesting that any indirect source measure be directed at airlines rather than at the airport as a whole. Staff will consider the feasibility of this option during development of the measure. Any such measure would need to include an enforceable mechanism to be included in the SIP.

Response to Comment 43-8:

SCAQMD staff recognizes your concern with a possible mitigation fee to comply with a facility-based measure regulating airports. The concept of a fee program is discussed as an example that will be further vetted during the working group meetings regarding this measure. In addition, any proposed fee program will go through analysis on the cost-effectiveness of such a program and if such a program is within the authority of the airports. Staff encourages stakeholders and interested parties to participate in these working group meetings to ensure the program and/or rule is developed in a feasible and effective manner.

Response to Comment 43-9:

The airport emissions are now replaced with the data provided by Mr. Zorik Pirveysian on Aug 10, 2016. According to the report by Mr. Pirveysian, emissions from John Wayne Airport (JWA) were estimated with EDMS model for the years of 2016, 2021, and 2026. This estimation was conducted based on JWA's detailed operations forecast for these years which covered air carrier, air taxi, and GA operations.

Response to Comment 43-10:

The SCAQMD is working closely with CARB to ensure that any proposed rules from CARB will be consistent with local rules. Please see Response to Comment 43-6 regarding legal authority.

Response to Comment 43-11:

Staff appreciates the comment and will consider the comments during the public process to identify additional actions. Although AQMP control measures are accompanied by cost-effectiveness data where feasible, in some cases this information can only be ascertained as the precise form of the measure is developed during subsequent rulemaking or development of other enforceable mechanisms.

Response to Comment 43-12:

In response to the concerns raised by the commenter, the Revised Draft Plan has been modified to include details regarding the trigger to pivot to regulation. If steps are not taken to implement the voluntary actions, SCAQMD staff will recommend to the Board whether to consider development of rules within legal authority no later than one year after the adoption of the Final 2016 AQMP.

Comment Letter from Lennox International Inc. (Comment Letter 44)



Lennox International Inc.
2140 Lake Park Boulevard
Richardson, Texas 75080-2254

Mailing Address:
P.O. Box 799900
Dallas, Texas 75379-9900

Telephone: 972.497.5000
Facsimile: 972.497.6668
LennoxInternational.com

Dave Winningham
Sr. Engineering Manager,
Regulatory Affairs
Telephone: 803-738-4085

August 19, 2016

Michael Krause
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Submitted via: www.aqmd.gov

Re: Lennox Comments on SCAQMD Draft 2016 Air Quality Management Plan

Lennox International Inc. (Lennox) hereby submits comments on the, *Draft 2016 Air Quality Management Plan*, that was published by the South Coast Air Quality Management District in June 2016 (hereafter referred to as the "AQMP").

Lennox is a leading provider of climate control solutions for the heating, air-conditioning, and refrigeration equipment markets. Lennox is a publicly-traded company and has thousands of employees. Lennox manufactures HVAC and Refrigeration (HVACR) products that will be affected by the 2016 AQMP. Lennox appreciates the opportunity to work with SCAQMD to develop reasonable, practical regulations that help to further its goals. However, Lennox has concerns regarding the Draft AQMP and current SCAQMD regulations as outlined in the comments below.

Comments on the Draft 2016 AQMP.

Lennox recognizes that the federal Clean Air Act (CAA) requires areas not attaining the national ambient air quality standards (NAAQS) to develop and implement an emission reduction strategy that will bring the area into attainment in a timely manner and the role SCAQMD plays in this effort.

Lennox applauds the SCAQMD direction as stated in the draft plan; "The 2016 AQMP represents a new approach, focusing on available, proven, and cost-effective alternatives to traditional strategies, while seeking to achieve multiple goals in partnership with other entities promoting reductions in greenhouse gases and toxic risk, as well as efficiencies in energy use, transportation and goods movement. The Plan recognizes the critical importance of incentives that encourage the accelerated transition of vehicles, buildings, and industrial facilities to cleaner technologies in a manner that benefits not only air quality, but also the local businesses and the regional economy. These "win-win" scenarios are key to implementation of this Plan with broad support from a wide range of stakeholders."

Lennox key concern regarding the draft 2016 AQMP is that the current SCAQMD regulations under Rule 1111 Low NOx requirement for Residential Furnaces products does not

44-1

44-2

seem well aligned with the strategy stated in the draft plan. Lennox is also concerned that as part of the Draft AQMP, CMB-02 – EMISSION REDUCTIONS FROM COMMERCIAL AND RESIDENTIAL SPACE AND WATER HEATING (i.e. rule 1111.1) will result in a similar situation to that current found for the Residential Furnaces under Rule 1111.

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To summarize, the current situation regarding Rule 1111 is that we are 18 months into the implementation of the rule and there are no products available on the market that meet the 14ng/joule NOx requirement. While Lennox and other Furnace manufacturers participated in the technology assessment conducted by SCAQMD leading up to the promulgation of Rule 1111, it appears that the task of deployment of the technology and the burden associated with the rule has been significantly underestimated.

Rule 1111 as enacted employs a 3 year mitigation period and associated fees to allow manufacturers time to come into compliance. This mitigation period started in April 2015. Since the completion of the technology assessment Lennox has and continues to significantly invest toward development of low NOx products that meet the standard criteria. As we are now approaching the end of 2016, Lennox has concerns that the mitigation period for high efficiency gas furnaces may end without product being available to the market. Lennox is also concerned that the structure and timing of the mitigation period and fees first are not aligned with the 2016 AQMP and in fact could be a disincentive toward SCAQMD objectives and a significant burden to the HVAC industry.

The following summarizes Lennox's evaluation of current rule 1111.

44-3

- Mitigation Fee structure is a disincentive for higher efficiency products.
- Multiple burdens.
 - Burden of Mitigation fees.
 - Burden of development of a product specifically for the CA market that has limited if any association with the core US products.
- Timing disincentive for higher efficiency products (mitigation fee ends 1st), could result in no products being available.
- Fuel Switching – Potentially to less efficient alternatives due to mitigation fee cost.
- Incenting repair versus replace due to higher cost – Loss of emission reduction and efficiency improvements.

Lennox expressed these concerns and other key issues related to the development of low NOx furnace products during our recent meeting with SCAQMD staff and were encouraged by the discussion surrounding these issues. This encouragement extends further to Lennox's perspective of the draft 2016 AQMP where SCAQMD acknowledges:

- The critical importance of incentives that encourage the accelerated transition to cleaner technologies in a manner that benefits not only air quality, but also the local businesses and the regional economy.
- Mobile sources currently contribute about 88 percent of the region's total NOx emissions.
- Without an adequate and fair-share level of reductions from all sources, the emission reduction burden would unfairly be shifted to stationary sources.

Further, Lennox understands that SCAQMD is considering amending Rule 1111 to put in place a heat input based emission limit which will result in lower NOx emissions for high efficiency units compared with standard efficiency units. As part of this consideration a conversion to a PPM metric which is a fundamental input into the current NOx calculation is under consideration. While Lennox can support this direction, careful consideration must be given to the process and the levels taking into account the impacts of product efficiency and reliability as it relates to the combustion process.

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Lennox strongly recommends that current Rule 1111 be reviewed for alignment with the Draft 2016 AQMP and its stated methods towards achievement of the required air quality standards. Further, Lennox recommends that SCAQMD give full consideration to the recommendations outlined in our recent meeting and encourages further direct dialogue with Lennox on the specific issues regarding Rule 1111, potential rulemaking for Commercial Furnaces and amendments thereof.

In summary, Lennox greatly appreciates the opportunity to engage with SCAQMD both directly and thru these comments. Please contact me directly for any further information needed regarding these issues.

Sincerely,



Dave Winningham,
Sr. Engineering Manager, Regulatory Affairs

Responses to Comment Letter from Lennox International Inc. (Lennox)
(Comment Letter 44)

Response to Comment 44-1:

Staff appreciates the commenter's interest in the development of the 2016 AQMP and recognizing the importance of co-benefits from reductions in GHGs and toxics to assist in reducing criteria pollutants necessary for meeting the federal air quality standards.

Response to Comment 44-2:

The incentive based programs for water heating are based on existing technologies. The technologies for commercial heating furnaces was identified in the previous and the current AQMP. The proposed limits for commercial heating furnaces are consistent with manufacturer's recommendations in workshops and advertised emissions that were provided by manufacturer. The data available at this time suggests that incentivizing residential heating furnaces with emissions less than the rule limit will not result in significant emission reductions over the timeframe analyzed in the control measure. However, an analysis of life cycle emissions under future energy supply scenarios may result in emission reduction opportunities.

Response to Comment 44-3:

CMB-02 does not impact Rule 1111 in the short-term. It proposes incentive programs for water heaters, boilers and potentially commercial space heating furnaces and residential heating furnaces. Lower emitting heating furnaces may be included in incentive programs if there is a potential for significant NOx reductions. Water heaters and boilers provide a much greater opportunity to incentivize NOx reductions. Because an incentive program for residential furnaces cannot be put in place until units meeting the new emission limit are produced, Rule 1111 requirements and mitigation programs do not conflict with the proposed incentive programs. Any proposal to delay compliance dates for Rule 1111 would be addressed independently during a rule amendment. At this time there is no specific proposal by SCAQMD staff to amend Rule 1111. A rule may be developed in the future to regulate NOx emissions from commercial heating furnaces as technology advances.

Comment Letter from Los Angeles Area Chamber of Commerce (Comment Letter 45)



LOS ANGELES AREA
CHAMBER OF COMMERCE

August 19, 2016

Wayne Nastri
Acting Executive Officer
21865 Copley Dr.
Diamond Bar, CA 91765

RE: SCAQMD 2016 DRAFT AIR QUALITY MANAGEMENT PLAN

Dear Mr. Nastri,

On behalf of the Los Angeles Area Chamber of Commerce, our more than 1,650 members and the more than 650,000 people they employ throughout the region, we are submitting comments in response to the 2016 Air Quality Management Plan (AQMP). The document represents comprehensive air quality goals, policies and programs impacting the South Coast Basin, in addition to environmental needs while promoting economic growth and well-being for all Californians.

The following comments are a collection of the Chamber's stakeholders, which aided in developing what we refer to as "guiding principles", we hope the final AQMP will reflect:

- (1) Incentive-based policy framework; We support the District's efforts to work with industry and stakeholders to attain emissions and clean air goals.
- (2) Incentive based programs; we believe positive outcomes are best achieved through incentives, rather than punitive regulatory actions. The overall policy framework should refrain from being penal in nature, and rather prioritize non-regulatory, incentive based programs.
- (3) Innovative methodology to reduce emissions should be deployed while acknowledging that the region has made visible strides in lowering emissions from stationary sources.
- (4) Cost effectiveness and technology neutral equipment and retrofits should also be significantly reflected in the AQMP; in offering cost effective alternatives, stakeholders are not adversely operationally or financially burdened.
- (5) The plan acknowledges that many of the emission control technologies that are needed are not currently cost effective, but to attain the health standards by the deadline (2023) these control technologies need to be deployed.
- (6) The plan should be fuel neutral and impartial, offering an array of alternatives to consumers.
- (7) The AQMP should provide sufficient incentives to offset the capital and operational costs of low emissions technologies to both, mobile and stationary.
- (8) Facility based measures including potential facility emission caps can cause severe potential implications on the national supply chain. This regulatory action can create an unprecedented expansion to regulate goods movement facilities and shippers and is contrary to efficiency.
- (9) The plan identifies the need for approximately \$2 billion in incentives for stationary sources to assure that the needed control technologies are deployed by the deadline (2023). More specific information of how this plan will be funded is essential to moving forward with implementation. The AQMP should consider partnering with various stakeholders to effectively finance incentive programs.

45-1

45-2

45-3

45-4

45-5

Thank you for your efforts. We look forward to continue working with you.

Sincerely,

Gary Toebben
President & CEO

3rd
level St.
Los Angeles, CA
1.580.7500 | F: 213.580.7511 | lachamber.com

**Responses to Comment Letter from Los Angeles Area Chamber of Commerce
(Comment Letter 45)**

Response to Comment 45-1:

Staff appreciates the support for the incentive programs in the Draft Plan.

Response to Comment 45-2:

The policy in the Plan is to prioritize what is cost-effective and feasible whether through a regulatory approach or an incentive based approach. There is strong support for regulations that are permanent, effective, and enforceable. However, incentives can assist in advanced deployment of cleaner technologies and allow for public acceptability, as well as, provide time for the new technology to be more commercially available, and feasible in more applications.

Response to Comment 45-3:

Please see Response to comment 45-2 regarding cost-effectiveness and the value of incentives to deploy advanced technologies, particularly with fast approaching deadlines for the ozone standards. The plan is fuel neutral in that any power source meeting required emission standards may be used.

Response to Comment 45-4:

During the public process, staff will be taking comments and input on identifying actions that result in additional emission reductions. As part of this effort, staff will examine impacts on the supply chain. In a separate activity, the Ports are evaluating ways to optimize the supply chain. To the extent that emission reductions are realized from the Ports' efforts, staff will work with the Ports and interested stakeholders to quantify the reductions for consideration in recognizing the reductions in the SIP. In implementing the facility-based measures, staff will need to identify enforceable mechanisms, but there is no preconceived conclusion that this would necessarily involve emission caps.

Response to Comment 45-5:

Staff is developing a draft Financial Incentive Funding Action Plan to provide more specific information on potential funding sources and a set of proposed actions to secure funding.

Partnerships are a critical element in developing a successful incentive program and will be emphasized in the draft Financial Incentive Funding Action Plan.

Comment Letter from Los Angeles Department of Water & Power (Comment Letter 46)



ERIC GARCETTI
Mayor

Commission
MEL LEVINE, *President*
WILLIAM W. FUNDERBURK JR., *Vice President*
JILL BANKS BARAD
MICHAEL F. FLEMING
CHRISTINA E. NOONAN
BARBARA E. MOSCHOS, *Secretary*

MARCIE L. EDWARDS
General Manager

August 19, 2016

Mr. Michael Krause
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Dear Mr. Krause:

Subject: Los Angeles Department of Water & Power's Comments on Draft 2016
Air Quality Management Plan

The Los Angeles Department of Water & Power (LADWP) appreciates the opportunity to provide comments on the Draft 2016 Air Quality Management Plan (AQMP). LADWP supports South Coast Air Quality Management District's (SCAQMD) efforts to further develop efficient and effective policies to reduce emissions in order to meet the federal standards in the South Coast Air Basin (SCAB).

Serving approximately 1.4 million customers in Los Angeles with a generating capacity of over 7,300 megawatts, LADWP is the largest municipal electric utility in the nation, and the third largest electric utility in California. LADWP is a vertically integrated utility, owning and operating a diverse portfolio of generation, transmission, and distribution assets spanning several states.

All of LADWP's generating units are equipped with Best Available Retrofit Control Technology (BARCT) or Best Available Control Technology (BACT) and have reduced NOx emissions by 90 percent. As part of its modernization efforts, since the 1990's, LADWP has been replacing its existing, less efficient utility boilers in the South Coast Air Basin with new, state-of-the-art combined-cycle and simple cycle turbine systems equipped with selective catalytic reduction technology to minimize NOx emissions. During this modernization process, LADWP's generating facilities have been subject to New Source Review and are equipped with BACT.

LADWP also continues to make unprecedented investments in renewable energy resources, energy efficiency and transportation electrification to improve the environment. LADWP is on track to meet 33 percent of its energy sales from renewable energy resources by 2020, has a goal to achieve 15 percent energy savings by 2020, and is continuing to implement programs to support the electrification of the transportation sector to reduce greenhouse gases and criteria pollutants, including NOx, and as a potential solution to absorb over-generation from solar renewable sources.

46-1

Los Angeles Aqueduct Centennial Celebrating 100 Years of Water 1913-2013

111 N. Hope Street, Los Angeles, California 90012-2607 Mailing address: Box 51111, Los Angeles, CA 90051-5700
Telephone: (213) 367-4211 www.LADWP.com

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LADWP's provides comments on SCAQMD's proposed regulatory language and draft preliminary draft staff report below.

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CTS—01 Further Reductions from Coatings, Solvents, Adhesives, and Sealants

As the draft AQMP states, this control measure “seeks limited VOC emission reductions by focusing on select coating, adhesive, solvent and sealant categories by further limiting the allowable VOC content in formulations or incentivizing the use of super-compliant technologies.” The AQMP states that VOC reductions could be achieved by lowering the VOC content of source categories within SCAQMD source-specific rules such as Rule 1171. LADWP has concerns with respect to amendments to these rules as it operates and maintains a number of equipment to maintain grid reliability.

LADWP, as well as owners/operators of electric generating facilities in the SCAB, operate and maintain electric system components, circuit breakers and continuous emissions monitoring system (CEMS) analyzers. LADWP uses denatured alcohol, which is subject to rule 1171, to clean the optical sensing elements in the CEMS. With respect to the cleaning of circuit breakers, the manufacturers specify the use of denatured alcohol. The potential consequences of not using denatured alcohol is that the warranty would be voided and/or the circuit breaker would not function properly (leading to possible power outage, fire or explosion, release of SF6 insulating gas into the atmosphere, violation of the SF6 emission limit). Any alternative to denatured alcohol cannot leave a residue as it could provide a path to ground to electricity and the contaminants in the residue could cause flash over and/or prevent SF6 from reforming properly after extinguishing an arc. To date, LADWP has not found a safe and effective alternative to denatured alcohol.

46-2

LADWP and Southern California Edison have had several discussions with the California Air Resources Board (CARB) with respect to the above described concerns and its Consumer Products Regulation requirements. CARB is working with the utilities to determine how to address the issue. If SCAQMD amends Rule 1171 with respect to use of denatured alcohol, LADWP recommends that SCAQMD work closely with the electric utilities to ensure that alternative solvents are safe and effective.

Electricity Sources

Figure 10-10 shows the percentage breakdown of the generation mix for electricity supplied to the Los Angeles (LA) Basin from LADWP which would not only include electricity supplied from its LA Basin generating facilities, but also electricity from its generating facilities within California but outside the LA Basin and generating facilities outside California. However, since the 2016 AQMP does not address the emissions associated with electricity imports *into* the Basin, the information in Figure 10-10 could cause confusion. If SCAQMD intends to show this information, it should clarify that the

46-3

Mr. Michael Krause
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emissions associated with electricity generated outside the LA Basin would not be subject to SCAQMD jurisdiction.

The discussion in this section states that LADWP's energy supply from coal has remained constant at 40 percent based on the CEC Utility Annual Power Content Labels for 2014. To provide an update for inclusion into the 2016 AQMP, on July 1, 2016, LADWP completed its divestiture from its 21.2 percent ownership of Navajo Generating Station, a coal-fired facility located in Arizona, three-and-a-half years ahead of schedule. LADWP's energy supply from coal is projected to be between 28 and 30 percent without Navajo Generating Station.

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ECC-01 – Co-Benefit Emission Reductions from GHG Programs, Policies, and Incentives

ECC-02 – Co-Benefits from Existing Residential and Commercial Building Energy Efficiency Measures

LADWP supports the above stated control measures that recognize criteria pollutant emission reductions from energy and climate change related programs that also significantly reduce greenhouse gas (GHG) emissions. LADWP supports SCAQMD's efforts to take advantage of the co-benefit emission reductions from implementation of State regulations such as the AB 32 cap-and-trade, renewable portfolio standard, California's Title 24 program and SB 350's energy efficiency goal and energy targets.

46-4

State Implementation Plan Crediting to Accommodate Electrification

As the AQMP states, an essential part of the strategy to reduce NO_x levels in the SCAB region will be to electrify sources and thereby eliminate the NO_x emissions that currently result from their burning of fossil fuels. Specifically, the increased electricity generation will result in small increases in NO_x emissions by affected electric generating facilities, but those emissions will be more than offset by substantial NO_x emission reductions achieved by the newly electrified sources. Electrification of even portion of these sources will result in substantial overall NO_x reductions.

An important element of this strategy is for SCAQMD to work with the U.S. Environmental Protection Agency (EPA) to develop a mechanism for accounting for and providing emission reduction credit to the owners and operators of affected electric generating facilities for the net NO_x emission reductions achieved in the SCAB through the electrification of other source categories within the basin. This emission reduction crediting mechanism would demonstrate how the SCAQMD will meet its obligations to attain and maintain the air quality goals under the Clean Air Act. At present, there is not any EPA-recognized state implementation plan (SIP) mechanism that accounts for and provides the appropriate credit to electric utilities for emissions reductions achieved by the electrification of other source categories. LADWP urges SCAQMD to work with key

46-5

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EPA staff (both at headquarters and Region 9) to develop a SIP crediting mechanism modeled after approaches that EPA has developed for promoting energy efficiency and renewable energy measures as an acceptable approach for the SCAQMD and other state authorities to meet their ozone reasonable further progress goals for reducing NO_x emissions under the Clean Air Act.

46-6

Development of an EPA-recognized SIP crediting mechanism will address the regulatory uncertainty that would otherwise result from this paradigm shift and thereby encourage the implementation of policies to reduce emissions from the transportation and major source categories of emissions through electrification in the South Coast Air Basin and other urban ozone nonattainment areas.

Conclusion

Again, LADWP appreciates the opportunity to provide comments on the 2016 Draft AQMP. If you have any questions or would like additional information, please contact Ms. Jodean Giese of my staff at (213) 367-0409.

Sincerely,



Mark J. Sedlacek
Director of Environmental Affairs

JG:dms

Enclosures

c: Ms. Jodean Giese

Responses to Comment Letter from Los Angeles Department of Water & Power (LADWP)
(Comment Letter 46)

Response to Comment 46-1:

Staff appreciates the interest and participation in the development of the 2016 AQMP as well as investments in renewable energy resources, energy efficiency, and transportation electrification.

Response to Comment 46-2:

Staff will work closely with stakeholders when considering VOC reductions to ensure safe and effective alternatives exist.

Response to Comment 46-3:

Figure 10-10 footnote has been updated to state "and generation outside the Basin is not subject to SCAQMD regulatory authority". However, this table shows electricity usage and associated CO2 emissions, not generation.

Response to Comment 46-4:

Staff agrees that co-benefits can assist in generating criteria pollutant reductions while existing programs reduce GHGs and toxics. The Draft Plan includes measures such as ECC-01 and ECC-02 that take advantage of the co-benefits from other programs.

Response to Comment 46-5:

Staff is willing to discuss a possible SIP crediting mechanism for electric utilities with U.S. EPA if it can be shown how such as mechanism would incentivize reducing emissions, especially from the transportation sector.

Comment Letter from Los Angeles World Airports (Comment Letter 47)



Los Angeles
World Airports

August 19, 2016

Michael Krause
SCAQMD Headquarters
21865 Copley Drive
Diamond Bar, CA 91765

Re: **Draft 2016 Air Quality Management Plan**

Dear Mr. Krause:

LAX
LA/Ontario
Van Nuys
City of Los Angeles
Eric Garcetti
Mayor
Board of Airport
Commissioners
Sean D. Burton
President
Valeria C. Velasco
Vice President
Gilbert J. Diaz
Gabriel L. Esquivias
Beatriz C. Hsu
Nolan V. Rollins
Dr. Cynthia A. Telles
Deborah Flint
Executive Director

As you know, Los Angeles World Airports (LAWA) is the proprietary department of the City of Los Angeles that owns and operates Los Angeles International Airport (LAX), LA/Ontario International Airport (ONT), and Van Nuys general aviation airport (VNY). LAX is the seventh busiest airport in the world and third busiest in the United States. This letter identifies a number of issues that LAWA sees with the 2016 Draft AQMP, including:

- Current and forecast airport-related emissions in the 2016 Draft AQMP are not accurate and substantially understate the annual emissions that LAWA and other airports anticipate occurring through the horizon of this AQMP (2032).
- Aircraft emissions reductions predicted by the control scenarios due to the introduction of more aircraft meeting the International Civil Aviation Organization's (ICAO) latest aircraft engine emission standards will not materialize as expected. The large majority of aircraft that currently operate at LAX meet these standards, and thus, the expected reductions from the U.S. Environmental Protection Agency's (USEPA) adoption of ICAO's latest aircraft emission standards have already been achieved and are reflected in the emissions inventories that LAWA prepared and shared with the SCAQMD.

47-1

We appreciate the work of SCAQMD staff to address these discrepancies and other issues.

I. LAX Is an Important Regional Transportation Source and LAWA Has Taken Meaningful Steps to Reduce Emissions.

LAWA has long been a leader in airport sustainability and is committed to improving air quality at our facilities and across the region. Energy efficiency and air quality improvement programs are chief components of LAWA's sustainability policy, which was first adopted in 2008. Since then, LAWA has implemented a wide variety of programs designed to achieve reductions in energy consumption and improve air quality, including:

47-2



Michael Krause
SCAQMD Headquarters
August 19, 2016
Page 2 of 4

- Energy efficiency projects, including LAX's new Central Utility Plant, which is a modern, energy efficient facility and is estimated to reduce operational GHG emissions by 6%;
- Voluntary purchase of green power from LADWP, which accounted for more than 10% of LAX's total power purchase in 2015;
- The LAX Solar Feasibility Study, which will identify sites on the LAX campus for the installation of solar photovoltaic power systems;
- LAWA's Clean Fleet Program, which is the nation's largest alternative-fuel airport fleet;
- LAX's Ground Support Equipment Emissions Reduction Policy, which requires airlines and other GSE operators to meet emissions targets through conversion or retirement of conventionally fueled equipment used to service aircraft;
- LAWA's Gate Electrification program, which provides electrical power and pre-conditioned air for parked aircraft to use instead of burning jet fuel – currently 100% of LAX's passenger gates are electrified and LAWA is working to expand electrification to aircraft parking spaces, maintenance hangars and cargo areas;
- LAWA's Clean Construction program, which is designed to reduce emissions from construction including mandating use of Tier IV diesel equipment, Model Year 2010+ haul trucks and other control measures;
- LAX FlyAway Bus Program, which provides ground transportation between LAX and multiple locations in the Los Angeles area;
- LAWA's award-winning Employee Rideshare program, which had a 23% participation rate in 2015 and saved more than 300,000 gallons of fuel; and
- LAX's Alternative Fuel Vehicle program, which requires shuttles, trucks, and other large commercial vehicles operating at the airport to be powered by alternative fuel.

47-3

LAWA is proud of the strong partnership forged with the SCAQMD, and appreciates the opportunity to actively participate in the process of developing the 2016 AQMP through the white paper working groups, the Control Strategy Forum, and the AQMP Advisory Group. In the spirit of mutual collaboration, LAWA offers the following comments on the 2016 Draft AQMP proposed programs and control measures:

II. Aircraft Emissions in the Draft 2016 AQMP Should Be Updated To Reflect Aircraft Inventories Provided by LAWA.

Although the text of the 2016 Draft AQMP indicates that aircraft inventories have been updated since the 2012 AQMP (page 3-6 last bullet), a comparison of the numbers shows that they are almost identical. In April 2015, LAWA provided SCAQMD staff as well as the Southern California Association of Governments (SCAG) more accurate 2012 aircraft inventories for the draft 2016 AQMP based on recorded flight landing and takeoff data at LAX, ONT, and VNY. The 2012 aircraft inventories in the 2016 Draft AQMP under-represent aircraft emissions in the basin and consequently may distort the impact of future control efforts. In addition, LAWA

47-4

Michael Krause
SCAQMD Headquarters
August 19, 2016
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provided airport, including aircraft, emission inventory forecasts for LAX (report dated September 2015), and for ONT and VNY (reports dated October 2015). The LAX and ONT forecasts were based on the 2016 RTP approved by SCAG. The 2016 AQMP should be updated to include the aircraft inventories provided by LAWA.

47-4
Con't

III. Estimated Emissions Reductions From Aircraft Should Be Clarified.

Throughout the 2016 Draft AQMP, SCAQMD calls for emission reductions from State and Federally controlled sources, generally referring to "Further Deployment of Cleaner Technologies." In Table 4-4 (page 4-29) reductions of aircraft NOx emissions are listed as 17 tons-per-day (tpd) in 2023 and 13 tpd in 2031. Yet, baseline inventories only have 15.6 tpd in 2023 and 17.09 tpd in 2031. While a footnote to Table 4-4 implies that emission reductions are undergoing review, it appears that the estimated NOx reductions from aircraft are inconsistent. Furthermore, it is unclear why there is a difference between Tables 4-4, 4-17, and 4-18. Table 4-17 (pages 4-61 and -62) identifies incentive funding needed to achieve emission reductions from aircraft, ocean-going vessels, and freight locomotives: \$2.94 billion to achieve a 40 tpd reduction from these sources in 2023, and \$1.47 billion to achieve another 20 tpd reduction by 2031. Another set of funding scenarios is provided in table 4-18. LAWA requests that SCAQMD clarify the targeted emission reductions from aircraft, understanding that LAWA does not have regulatory control over aircraft given federal preemption limitations.

47-5

IV. The 2016 Draft AQMP Overestimates NOx Emission Reductions from Aircraft.

The 2016 Draft AQMP appears to assume that emission controls for aircraft will reduce aircraft emissions by 76% to over 100% of Basin-wide aircraft emissions without providing any detail on how those reductions are being estimated. The reductions assumed are shown in Table 4-4 of the main document and Table 3 of Appendix IV-B (page IV-B-9). The assumed reductions actually exceed Basin-wide aircraft emissions in 2023. The proposed control measure: "Further Deployment of Cleaner Technologies: Off-Road Federal and International Sources" (page IV-B-57) implies that only ICAO's CAEP/8 compliant aircraft engines would be allowed in the South Coast. However, the large majority of engines assumed to operate on aircraft already comply with CAEP/8 NOx standards. Thus, the assumed emissions reductions, ranging from 76% to 100% of total Basin-wide aircraft emissions, appear to be greatly overestimated.

47-6

V. LAWA Supports the Creation of an Airport Working Group To Assess and Develop Control Measures for Other Airport Sources.

Control Measure MOB-04, as discussed in Appendix IV-A, pages IV-A-125 – 129, seeks to create a working group of airports, airlines, and other interested stakeholders to assess and develop mechanisms to reduce emissions from other airport sources. LAWA is proud of its many programs designed to reduce emissions from other airport sources as noted above. LAWA is eager to work with airlines, other airports, and interested stakeholders to find ways to

47-7

Michael Krause
SCAQMD Headquarters
August 19, 2016
Page 4 of 4

expand these programs to other airports and is interested in successful emission reduction programs in operation at other airports. While the 2016 Draft AQMP does not estimate emission reductions from this control measure, LAWA desires to work with the SCAQMD to develop ways to quantify the emissions benefits from existing and future emission control programs.

The 2016 Draft AQMP refers to emissions reductions from airport regulation of Taxis and Transportation Network Companies (TNCs) in Appendix IV-C and p. 133. Each municipality regulates Taxis differently. LAWA is not able to regulate Taxis at LAX and VNY as the City's Board of Taxicab Commissioners has exclusive jurisdiction over Taxis in the City of Los Angeles. Similarly, LAWA is not able to directly regulate TNCs as the California Public Utilities Commission has exclusive jurisdiction to regulate TNCs. Nevertheless, through the working group, LAWA is eager to explore voluntary and/or incentive based programs to encourage Taxis and TNCs to use clean vehicles at its airports.

LAWA looks forward to working with the SCAQMD and other stakeholders to explore opportunities for further emissions reductions at airports in the region and thanks the SCAQMD for the opportunity to comment on the 2016 Draft AQMP. We look forward to continued engagement in the public process and applaud the SCAQMD for its commitment to air quality improvement in the Basin.

Sincerely,



Lisa Trifiletti
Deputy Executive Director
Environmental Programs Group

LT:TM:eb

47-7
Cont

Responses to Comment Letter from Los Angeles World Airports (LAWA)
(Comment Letter 47)

Response to Comment 47-1:

Staff appreciates the commenter's participation in the development of the 2016 AQMP.

Response to Comment 47-2:

SCAQMD staff recognizes the energy efficiency and air quality improvement programs that have benefited and will continue to benefit the region.

Response to Comment 47-3:

Please see Response to Comment 47-2 regarding the implementation of energy efficiency programs.

Response to Comment 47-4:

The aircraft emissions inventory was updated using activity data provided by airport, FAA data and growth projection from SCAG in August 2016 and have been included in the Revised Draft 2016 AQMP.

Response to Comment 47-5:

There were errors in the reported emission reductions associated with aircraft for 2023. The projected emission reductions for 2023 has been updated for the Draft Final 2016 AQMP.

Relation to the difference in funding levels shown in Tables 4-17 and 4-18 (June 2016 release version), the Table 4-18 scenario called for greater emission reductions from locomotives and marine vessels. The targeted emission reductions from aircraft will be clarified in the State SIP Strategy portion of the 2016 AQMP.

Response to Comment 47-6:

Please see Response to Comment 47-5 with regard to NOx emission reductions from aircraft.

Response to Comment 47-7:

Staff appreciates the comments regarding LAWA's environmental programs and looks forward to working with LAWA and the other airport authorities, the airline industry, environmental and community organizations, and other interested stakeholders to identify actions that potentially result in additional emission reductions through the working group process.

The SCAQMD staff is aware that the City of Los Angeles Taxicab Commission has authority over taxicab service at LAX and would extend an invitation to the City's Department of Transportation staff to participate in the working group.

Comment Letter from Orange County Council of Governments (Comment Letter 48)



August 19, 2016

Dr. Philip Fine
Deputy Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 92765

RE: Orange County Council of Governments (OCCOG) Comments: June 2016 Draft of the 2016 Air Quality Management Plan

Dear Dr. Fine:

The Orange County Council of Governments (OCCOG) appreciates the opportunity to provide comments on an initial, June 2016 Draft of the 2016 Air Quality Management Plan (AQMP). The Draft 2016 AQMP is a monumental effort and OCCOG recognizes that this Plan is critical to the region's ability to achieve federal air quality standards and healthful air. OCCOG has established an Ad Hoc Working Group comprised of member agencies representing local government, transportation agencies and the business community to collaboratively review and comment on the draft Plan.

The following general comments and recommendations are offered by OCCOG on the initial June 2016 Draft 2016 AQMP. OCCOG reserves the right to make further comments at a future date when the full impact of the proposed control strategy can be assessed:

1. **Fragmented and Incomplete Document Release:** OCCOG's review of this initial draft was conducted in the absence of critical, related documents which have yet to be released by the South Coast AQMD. Documents not yet released include the draft 2016 AQMP Program Environmental Impact Report and the AQMP's Socioeconomic Analysis.

OCCOG finds it extremely difficult to grasp and conduct a comprehensive review and comment of the Plan, when only certain elements of the Plan have been released. At this time, the main part of the Draft 2016 AQMP, Appendices I, II, III, and IV A-C have been released, while the Modeling and Attainment Demonstrations Appendix, Compliance with Other Clean Air Act Requirements Appendix, the Socioeconomic Analysis, and the Program Environmental Impact Report have not yet been released for public review.

Due to the lack of a complete document, OCCOG respectfully submits at this time, preliminary higher-order comments that will hopefully assist in AQMD's preparation of a revised September 2016 Draft Plan for review and comment. Please note that OCCOG reserves the right to make further refinements or revisions to these comments, in addition to submitting additional and final comments, when all 2016 Draft AQMP documents are released in a coordinated and integrated review process.

OCCOG thus reserves the right to make further comments at a future date when the full impact of the document can be analyzed, and further recommends that the South Coast AQMD please consider releasing all elements of the Plan simultaneously.

Orange County Council of Governments
1 Civic Center Plaza / P.O. Box 19575 / Irvine / California 92623-9575 / (949) 698-2856

48-1

2. Action Plan for Incentive Strategies: The Draft 2016 AQMP contains a number of measures that are designed to be implemented through incentives to accelerate the penetration of zero- and near-zero emission technologies, and to further reduce emissions from other mobile and stationary control measures. The Draft 2016 AQMP also notes that as much as \$14 billion in funding needs to be identified in order to implement "incentive strategies".

It is OCCOG's understanding that the \$14 billion in funding need represents the total funding need of all the agencies responsible for implementing the proposed measures. OCCOG recommends that the incentive funding need for each proposed measure be detailed in the 2016 AQMP Plan and Appendices, particularly Table IV-A-1 and Table IV-A-2 in Appendix IV-A, and that funding need by agency also be summarized and presented.

48-2

The Draft 2016 AQMP should include an action plan that identifies the funding source for all proposed incentive strategies. It should also include a discussion on the impact to local jurisdictions. For example, in regards to measures EEC-02 and EEC-03, there needs to be more details on who the recipient of the incentive is and who will be required to complete the bookkeeping and monitoring.

3. EGM-01: Emission Reduction from New Development and Redevelopment Projects: The purpose of this measure is to mitigate and reduce emissions from new development and redevelopment projects. The description of EGM-01 is very broad and could be interpreted to add a new fee to new development or redevelopment in the SCAQMD service area, similar to Rule 9510 adopted by the San Joaquin Valley Air Pollution Control District.

As a coalition of local governments, this prospect concerns us absent more information on how a development fee might impact local land use under our authority. To the extent that such a control measure would redistribute or constrain growth in the region, it could undermine the GHG and pollutant emission reductions that are imbedded in the Regional Transportation Plan/Sustainable Communities Strategy that OCCOG worked diligently to complete with SCAG. A fee might not be the best way to insure that new structures accommodate clean technologies, and the District should also explore other cost/effective methods.

48-3

Because of its ambiguity and potential overlap with the RTP/SCS, the OCCOG suggests that this proposed measure not be included among the AQMP's enforceable, committed measures. OCCOG further recommends that OCCOG be included in any South Coast AQMD Working Group that is established or re-convened on this measure, to allow for meaningful dialogue on this proposed measure. Further, if this measure proceeds to rule development in the future, the SCAQMD needs to assure that any proposed rule will integrate with, and enhance the California Environmental Quality Act (CEQA) process and not impede the project approval process in light of CEQA timelines.

4. Duplicative Measure: BCM-03: Further Emission Reduction from Paved Road Dust Sources: AQMD proposes that measure BCM-03 would include a review of existing NPDES mandates and that this be conducted in conjunction with any potential future rulemaking efforts. NPDES permits are administered by the local regional water quality control boards. AQMD does not have jurisdiction over the issuance and maintenance of mandates required of NPDES permits. OCCOG requests that AQMD staff remove reference to NPDES mandate review as to not confuse jurisdictional and implementation issues related to these permits.

48-4

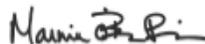
5. Unquantified Measures: There are a number of measures that have not been quantified in the Draft 2016 AQMP. These are often referred to as "to-be-determined" or "TBD" measures. Based upon the review of the initial draft 2016 AQMP, it is OCCOG's understanding that the Plan is capable of achieving federal air quality standards in absence of any of the TBD measures. OCCOG raises a concern on whether it is appropriate to include these types of measures in the 2016 AQMP, since they do not advance attainment. Inclusion of TBD measures implies some level of commitment toward delivering those measures even though it has not been determined how many emission reductions they can provide, or at what cost. An economic analysis cannot be performed without the quantified benefits. OCCOG is concerned that inclusion of TBD measures in the AQMP could allow the District to substitute a TBD measure in place of other quantified and committed measures by the SCAQMD staff after the 2016 AQMP is approved. The OCCOG understands that in the future the TBD measures may prove to be more cost effective than other committed measures. This kind of transfer should not be implemented as an administrative change, and should only be pursued through an appropriate public process. Until the time that either a backstop measure is needed or a TBD measure is identified to be more cost effective than one of the currently quantified measures, the OCCOG requests that the TBD measures either be removed from the plan, or clearly separated from the quantified measures, and called out as uncommitted measures that require further development and evaluation.

48-5

Furthermore, should the TBD measures remain in the AQMP, the OCCOG requests that the 2016 AQMP include a discussion that clearly states the purpose for including these strategies and the process required to incorporate these strategies. This process would preferably include action by the SCAQMD Governing Board and opportunities for public review and comment.

Thank you again for the opportunity to provide input on this initial Draft 2016 AQMP. We appreciate your consideration of all the comments provided in this letter and we look forward to your responses. We hope that future releases of the Draft 2016 AQMP will be coordinated to include all appendices and supporting documents to ensure we all are afforded a comprehensive review. Please do not hesitate to contact me if you have any questions.

Sincerely,



Marnie O'Brien Primmer
Executive Director
Orange County Council of Governments

Responses to Comment Letter from Orange County Council of Governments (OCCOG)
(Comment Letter 48)

Response to Comment 48-1:

Staff appreciates the interest and participation in the development of the 2016 AQMP. With regards to the timeline of the release of the Plan and related documents, please see Response to Comment 38-1.

Response to Comment 48-2:

The funding needs identified in the AQMP is based on meeting the emission reductions associated with the State Mobile Source Strategy "Further Deployment of Cleaner Technologies" measures for light-duty vehicles, on-road heavy-duty vehicles, federal and international sources, and off-road equipment. Tables 4-17 to 4-21 show a breakdown of potential funding by these sectors.

The deployment of cleaner technologies will be implemented by CARB, U.S. EPA, and the SCAQMD to incentivize cleaner vehicle and equipment. However, the specific implemented agency may depend on the source of funds or other factors.

For ECC-02, no additional costs are anticipated beyond those that would otherwise be allocated to reduce GHG emissions through State programs. This measure seeks merely to quantify criteria pollutant reductions from these GHG programs. ECC-03 is for existing residential buildings in the Basin and incentives are based on equipment, not the agency.

A Financial Incentive Funding Action Plan is being prepared to identify potential sources of funding. The Financial Incentive Funding Action Plan will be a companion document to the AQMP.

Response to Comment 48-3:

Under state law, the SCAQMD is required to assess rules and regulations adopted by other air agencies to ensure that all feasible measures are provided in the AQMP. As such, staff will be taking comments on whether adoption of a rule similar to San Joaquin Rule 9510 is appropriate for the South Coast Air Basin or whether there are other actions/mechanisms to address potential emissions associated with new or redevelopment projects. In addition, the facility-based measures will be developed in a public process and will initially seek enforceable actions to achieve emissions reductions. Please see Response to Comment 23-4 for details of the revised version of the facility-based measures in the Revised Draft Plan. Finally, staff encourages the Orange County Council of Governments to participate in the working group during the development of this measure.

Response to Comment 48-4:

Please see Response to Comment 6-2 with regard to NPDES requirements and clarification that staff did not intend the language to mean that SCAQMD would seek to change NPDES permit requirements.

Response to Comment 48-5:

As mentioned in the Draft AQMP, the SCAQMD mobile source measures are proposed to help implement the State Mobile Source Strategy "Further Deployment of Cleaner Technologies" measures. The SCAQMD is identified as an implementing agency along with CARB and U.S. EPA. As such, many of the SCAQMD

mobile source measure do not have associated emission reductions since the reductions are provided in the State Strategy (see Appendix IV-B). Please see Response to Comment 7-5 for further discussion of TBD measures.

Comment Letter from Pacific Merchant Shipping Association (Comment Letter 49)



August 19, 2016

Wayne Nastri
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765

Submitted Electronically at:
<http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/Draft2016AQMP>

Comments on the Draft 2016 Air Quality Management Plan

Dear Mr. Nastri:

The Pacific Merchant Shipping Association (PMSA), on behalf of its member ocean carriers and marine terminals operating in the South Coast Air Basin and throughout California, submits the following comments regarding the South Coast Air Quality Management District's (SCAQMD) Draft 2016 Air Quality Management Plan (AQMP).

Over the past decade, the members of PMSA have significantly reduced emissions from cargo operations at the San Pedro Bay ports. In a cooperative approach with the ports of Long Beach and Los Angeles, PMSA members have invested billions of dollars in technology and infrastructure that has made the Clean Air Action Plan both a success and a model throughout the world. Since 2005, diesel particulate matter emissions have been cut over 80%, sulfur oxides by 97%, and nitrogen oxides by 50%. This achievement could have only been achieved through the cooperation fostered by the ports with ocean carriers and terminal operators.

49-1

Moreover, the cooperative approach established through the Clean Air Action Plan allows for significant emission reductions, even with the economic shock of the Great Recession, without harming the flow of cargo through the two ports that is the lifeblood of Southern California's economy. While our members have proved resilient that does not mean that poorly considered planning will not seriously harm the ports and the businesses and communities that rely on them. With that in mind, PMSA has two areas upon which it will focus its comments: incentive-based strategies and facility-based mobile source measures.

Pacific Merchant Shipping Association
300 Oceangate, 12th Floor, Long Beach, CA 90802

Phone (562) 432-4040 Fax (562) 432-4048

Mr. Wayne Nastri
Re: Draft 2016 Air Quality Management Plan
August 19, 2016
Page 2

Incentive Funding Must Be Prioritized

Emission reduction strategies at the ports rely on expensive infrastructure improvements and significant levels of capital investment by the private sector. Over the past decade, PMSA members have spent billions modernizing terminals, installing infrastructure and upgrading vessels for shorepower, replacing cargo handling and terminal equipment, demonstrating new low-emission and zero-emission technologies, and improving efficiency. All of this has occurred despite significant losses of market share and lack of growth in container volumes.

While our members will continue investing in Southern California, the rate of improvement that the AQMP seeks is not sustainable without higher levels of container throughput long-term, and in the short-term cannot be achieved without incentive funding to accelerate turnover and invest in new technologies. Moreover, it is increasingly more difficult to reach the new goals when compared to the reductions that have already been achieved at great cost. A recent study conducted by Moffat & Nichol for PMSA estimates that terminal operators will invest roughly \$7 billion in California-based marine terminal equipment, but would incur an additional \$16-\$28 billion in order to replace the current cleaner equipment with even cleaner zero and near-zero equipment.

49-2

That investment would be a challenge based on normal fleet turnover time frames. It is near impossible on the timeframe envisioned in the AQMP without significant incentive funding. And, a further challenge, it is estimated that ocean carriers will lose \$5 billion this year due to historically low freight rates that are ravaging the industry. As a result, we urge SCAQMD to strengthen the use of incentive funding in the AQMP and identify specific funding needs, consistent with the Moffat & Nichol study, for maritime sources.

Given the importance of incentive funding to meeting the goals of the AQMP, the inclusion of any growth controls on the ports is exceptionally problematic. The inclusion of such measures puts in jeopardy the very ability for terminals and carriers to access the incentive funding necessary to achieve the AQMP's goals. While the ports have used programs like the Technology Advancement Program to spur new technologies for the maritime sector, those funds have been supplemented with other local, state, and federal funding. That funding is nearly always dependent on emission reductions being surplus over and above regulatory baselines. The inclusion in the AQMP of measures such as MOB-01 (discussed further below) will necessarily put that funding into jeopardy by calling into question whether future emission reductions are surplus.

If the goals of the AQMP cannot be achieved by 2024 and 2031 without significant incentive funding, but the very structure of the AQMP risks that incentive funding by being overly proscriptive, then the AQMP must be revised to ensure incentive funding will not be at risk in order to meet the region's goals.

Mr. Wayne Nastri
Re: Draft 2016 Air Quality Management Plan
August 19, 2016
Page 3

Facility-based Mobile Source Measures Must Be Removed

The draft AQMP includes several facility-based mobile source strategies that go well beyond SCAQMD's authority. The inclusion of MOB-01, Emission Reductions at Commercial Marine Ports, in particular, attempts to establish SCAQMD control over mobile sources that are outside its jurisdiction. SCAQMD has no authority over mobile sources, particularly port-related sources. Port-related mobile sources are under the authority of the California Air Resources Board (CARB) and U.S. Environmental Protection Agency (US EPA). Further, SCAQMD does not have the authority to limit land use or growth as contemplated in MOB-01. In California, land-use decisions are the domain of local cities and counties. Local air districts do not, and should not, dictate to local governments how they may or may not choose to organize and plan their communities.

Over the course of the public process, SCAQMD staff has described the facility-based mobile source measures, including MOB-01, in varying, contradictory ways. During one AQMP Advisory meeting, staff described the collection of facility-based mobile source measures as not necessary to demonstrate attainment with the National Ambient Air Quality Standards (NAAQS), as evidenced by the lack of an emission reduction commitment. Later, during another AQMP Advisory meeting, SCAQMD staff described the facility-based mobile source measures as the local implementation of CARB's Mobile Source Strategy, specifically the "Further Deployment of Technology" measures. But, while CARB's Mobile Source Strategy does include a reference to SCAQMD's mobile source strategies, CARB's document states that the "further deployment measures will rely on expanded incentive funding programs to accelerate deployment, as well as advocacy for additional actions at the federal and international level, along with efforts to increase system efficiencies," and, significantly, it does not describe facility-based mobile source measures. As the recently-released California Sustainable Freight Action Plan specifically reiterates, "[t]here is no direction to implement a freight facility performance targets measure in either ARB's *Mobile Source Strategy* or *Proposed 2016 State Strategy for the State Implementation Plan*."¹ In any case, staff has not adequately described these measures and, given SCAQMD's clear lack of authority, staff must remove these measures from the final AQMP.

49-3

SCAQMD's inclusion of the facility-based mobile source measures in the AQMP threatens the very basis of the success of the CAAP: voluntary cooperation among port stakeholders. The inclusion of these measures will cast a pall over the upcoming efforts at the ports. Both ports have recently announced an update to the CAAP in order to continue their successful efforts to improve air quality. In addition, the Port of Los Angeles recently announced a new effort, establishing the Sustainable Freight Advisory Committee, that seeks the support of port

¹ Sustainable Freight Action Plan, Appendix C, p. C-41,
http://www.casustainablefreight.org/files/managed/Document/282/CSFAP_AppendixC_FINAL_07272016.pdf

Mr. Wayne Natri
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Page 4

stakeholders to accelerate the introduction of electric vehicles and equipment. Both the CAAP and Sustainable Freight efforts are founded on the principle that only through voluntary cooperation can the highest levels of investment and emissions reductions be reached. This essential cooperation will be jeopardized by the vague, unenforceable threat posed by the facility-based mobile source measures.

Despite the fact that there are no emission reductions associated with the facility-based mobile source measures, SCAQMD chose to include these contentious measures in the AQMP. It makes no sense to include strategies that, based on SCAQMD staff statements, are not needed to demonstrate attainment with the NAAQS. The facility-based mobile source strategies do not further goals of the AQMP or State Implementation Plan.

49-3
Con't

For all of these reasons, SCAQMD must remove the facility-based mobile source measures from the AQMP. The inclusion of the facility-based mobile source measures will only serve to hamper the cooperation necessary to develop and deploy new technologies at our local ports. It will stifle the cooperation of port-related businesses, who will be rightfully concerned that their voluntary efforts would be transformed into command-and-control strictures that will limit their opportunity to grow and thrive. These measures will only ensure conflict among stakeholders which will ultimately prevent and impede progress.

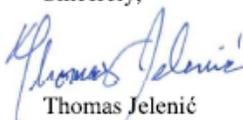
Support National and International Standards

Finally, PMSA asks SCAQMD to continue its support for national and international standards for federal sources. Improving standards at these jurisdictional levels are necessary to achieve emission reductions at the ports and for allowing the long-term growth that will support our local communities and higher levels of investment in emissions reduction technologies. PMSA supports SCAQMD in efforts that seek to control emissions from the appropriate regulatory body, including the International Maritime Organization, US EPA, or CARB.

49-4

PMSA looks forward to working with South Coast Air Quality Management District on the next draft of the 2016 Air Quality Management Plan and its eventual finalization.

Sincerely,


Thomas Jelenić
Vice President

Responses to Comment Letter from Pacific Merchants Shipping Association (PMSA)
(Comment Letter 49)

Response to Comment 49-1:

Staff appreciates the comments submitted and applauds the commenter on the efforts to assist in successful air quality improvement programs at the Ports.

Response to Comment 49-2:

Staff appreciates the support of the incentive program and agrees that it is necessary for some sources to transition to cleaner technologies due to the high cost of new equipment. With respect to future funding mechanisms, staff intends to seek funds to implement the AQMP, so that such funds would not require reduction to be surplus to the 2016 AQMP.

Response to Comment 49-3:

The proposed measure MOB-01 is not intended to limit land use or growth. The primary objective of MOB-01 is to help achieve the emission reductions associated with the State Mobile Source Strategy "Further Deployment of Cleaner Technologies" measures for on-road heavy-duty vehicles, off-road equipment, and federal and international sources. The SCAQMD is listed as an implementing agency along with CARB and U.S. EPA. While the State has not been given direction to implement a freight facility performance targets measure at the State level, the SCAQMD is proposing facility-based measures that are within the SCAQMD authority to develop and implement. As noted earlier, these measures do not have associated emission reduction targets and seeks a collaborative approach to identifying actions that potentially result in emission reductions to help implement the State SIP Strategy "Further Deployment" measures. Such actions may be a combination of voluntary and regulatory actions. Regulatory actions may be adopted by local, state, or federal governments. This may include local ordinances that have quantifiable emission reductions.

Staff believes that the public process proposed in MOB-01 provides an opportunity for the SCAQMD staff to receive comments and input from all affected stakeholders including the Ports, goods movement industry, environmental and community organizations, and interested parties. The comments and input received will be used to develop mechanisms ensure the associated emission reductions will be maintained.

Response to Comment 49-4:

Staff appreciates the comment supporting national and international standards where appropriate. SCAQMD will continue to strongly support such standards.

Comment Letter from the Ports of Long Beach and Los Angeles (Comment Letter 50)

SAN PEDRO BAY PORTS
CLEAN AIR ACTION PLAN

August 19, 2016

Mr. Wayne Nastri
Acting Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765
Electronic Submittal Via:
<https://onbase-pub.aqmd.gov/sAppNet/UnityForm.aspx?key=UFSessionIDKey>

Dear Mr. Nastri:

SUBJECT: COMMENTS ON THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT'S DRAFT 2016 AIR QUALITY MANAGEMENT PLAN (JUNE 2016)

The Ports of Long Beach and Los Angeles (Ports) appreciate the opportunity to participate in the South Coast Air Quality Management District's (District or SCAQMD) 2016 Air Quality Management Plan Advisory Committee and to comment on the *Draft 2016 Air Quality Management Plan* released on June 30, 2016 (AQMP). The Ports recognize the amount of effort that has gone into the development of the 2016 AQMP and acknowledge the efforts of the District to release a plan that seeks to balance "traditional" regulatory measures with innovative incentive-based measures.

The Ports support the development and implementation of programs to achieve the applicable and current national ambient air quality standards (NAAQS). Consistent with that effort, the Ports voluntarily developed the highly successful San Pedro Bay Ports Clean Air Action Plan (CAAP) and continue to be successful in implementing those programs. As a result of the CAAP, between 2005 and 2015, emissions from maritime goods movement sources were reduced at an accelerated rate over command and control rules; accounting for overall reductions of 84% for diesel particulate matter (DPM), 50% for nitrogen oxides, and 97% for sulfur oxides. The Ports' emissions inventories in 2015 show reductions that are in excess of the 2014 emission

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The San Pedro Bay Ports Clean Air Action Plan was developed with the participation and cooperation of the staff of the US Environmental Protection Agency, California Air Resources Board and the South Coast Air Quality Management District.

reduction goals in the CAAP. Thus, the Ports have a proven track record of developing and implementing appropriate and effective emission reduction strategies based on cooperative and voluntary measures, independent of or in advance of regulatory requirements.

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The CAAP relies upon cooperative efforts with the maritime goods movement industry to achieve healthful air for the surrounding communities. The voluntary and cooperative aspects of the CAAP are critical because the Ports set stretch goals under incentive-based programs that rely in part upon federal, state and District monetary grants. Many of these grants are only available for programs that achieve "surplus" emissions reductions (i.e., those emissions reductions that are not required by regulation) by either accelerating the air quality regulatory agency requirements, or implementing non-regulatory programs. A significant concern of the Ports is the potential loss of this grant money, which is essential to continuing the successful implementation of the CAAP, if CAAP measures are included in the 2016 AQMP, directly or indirectly.

50-2

In order to meet the NAAQS, a collaborative and concerted effort with our agency partners is also essential, with the understanding that while the Ports can voluntarily achieve significant emission reductions, the CAAP is not a suitable control measure for the 2016 AQMP. United States Environmental Protection Agency (EPA), California Air Resources Board (CARB), and the District are the air quality regulatory agencies, and as such have authority as granted by statute to regulate the emissions directly from maritime goods movement sources. The Ports do not operate, own or control the maritime goods movement emission sources, and do not have the same authority as the air quality regulatory agencies. As such, the Ports should not be the agencies designated as responsible for achieving emission reductions from the maritime goods movement industry.

50-3

Additionally, the Ports are currently in the process of developing the next update of the CAAP. Many of the existing CAAP control strategies have been adopted or superseded by state or international requirements, such as the rules for replacing drayage trucks, switching to cleaner marine fuels, and using shore power while at berth. In collaboration with the maritime goods movement industry and our regulatory partners, the Ports seek to identify additional strategies to voluntarily achieve emissions reductions from ships, trucks, locomotives, cargo-handling equipment, and harbor craft to support the state's and region's air quality attainment needs. The CAAP Update will also incorporate strategies to address near-zero and zero emission technologies, greenhouse gas emissions, energy, and operational efficiencies.

50-4

In response to the District's request, the Ports respectfully submit the following comments regarding the Draft 2016 AQMP at this time, as well as questions and concerns that must be addressed *prior to* finalization and adoption of the 2016 AQMP by the District. We note, however, that it is difficult for the Ports to specify all comments at this time as the critical Appendices V and VI, Incentive Funding Action Plan, and

50-5

socioeconomic analysis have not yet been released to the public. We urge the District to consider extending the comment date on the 2016 AQMP until all Appendices and other critical components of the AQMP (e.g., the socioeconomic analysis, Incentive Funding Action Plan, etc.) have been released to the public so that a more comprehensive analysis can be conducted and comments provided to the District prior to Board consideration. Based on the information currently available, the Ports request that the Draft 2016 AQMP be revised as follows:

- Remove Mobile Source Control Measure MOB-01, as it does not provide emission reductions for the attainment demonstration, exceeds the District's authority, and is duplicative of other proposed control measures and state, federal and international laws.
- Exclude the Ports from the growth management control measure, EGM-01.
- Revise MOB-14 so that it does not preclude the maritime goods movement industry's ability to obtain grant funding.
- Focus on attaining the applicable NAAQS and not the revoked NAAQS.
- Specifically identify which measures are contingency measures as required by the Clean Air Act.
- Include in the socioeconomic analysis prepared for the 2016 AQMP a thorough cost-benefit evaluation of all control measures, including MOB-01 if it remains in the Plan as currently proposed, and all contingency measures.
- Complete and circulate the Incentive Funding Action plan for public review and comment *before* inclusion in the Socioeconomic analysis.
- Respond with changes in the 2016 AQMP to address the Ports' concerns and questions associated with the technical analysis, including the baseline and future year emissions inventory.

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Detailed comments on each of the Ports' requested bullet items above are provided in the following Attachment.

The Ports strongly encourage the District to make the above-requested changes to the Draft 2016 AQMP, and in particular, eliminate control measure MOB-01 as it is unnecessary and exceeds the District's authority. The Ports also urge the District to complete the appropriate Incentive Funding Action Plan, as well as the appropriate socioeconomic impact analysis, and to provide the Ports and other members of the public with an adequate opportunity for comprehensive review and comment on those documents along with the (revised) Draft 2016 AQMP *prior to* submitting the Plan to the Board for consideration.

50-7

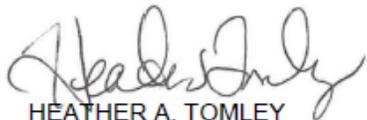
The Ports remain committed to achieving our clean air goals identified in the CAAP to help improve regional air quality. We strongly believe that the voluntary and cooperative CAAP process established by the Ports remains the most appropriate forum for the Ports and the air regulatory agencies to discuss technical and policy issues related to reducing emissions from port-related sources.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

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The Ports appreciate this opportunity to provide comments on the Draft 2016 AQMD. We look forward to continuing to work with the District on advancing our shared goals for clean air in the South Coast region.

Sincerely,



HEATHER A. TOMLEY
Director of Environmental Planning
Port of Long Beach



CHRISTOPHER CANNON
Director of Environmental Management
Port of Los Angeles

CCLW:TD:mrx
APP No.: 160818-518

cc: Jon Slangerup, Port of Long Beach, Chief Executive Officer
Gene Seroka, City of Los Angeles Harbor Department, Executive Director
Richard Corey, California Air Resources Board, Executive Officer
Alexis Strauss, Region 9, Acting Regional Administrator

Attachment: Detailed Comments on the Ports' Requested DRAFT 2016 AQMP Revisions

Attachment to Comment Letter 50:

SAN PEDRO BAY PORTS CLEAN AIR ACTION PLAN

ATTACHMENT

Detailed Comments on the Ports' Requested DRAFT 2016 AQMP Revisions

1. SCAQMD Mobile Source Control Measure: MOB-01 Emission Reductions at Commercial Marine Ports.

The Ports appreciate the discussion in this control measure that recognizes our successful efforts in implementing the CAAP since 2006 and exceeding our emission reduction goals in 2014. Yet, it appears that the District remains concerned over its ability to claim and quantify credit in the state implementation plan SIP for the emission reductions achieved by the Ports through the CAAP in the absence of District-imposed "enforceable" rules or control measures. The District continues to attempt to hold the Ports responsible for achieving their voluntary stretch goals, and for backstopping requirements that are currently being enforced by state and international regulations. Further, MOB-01 suggests that if the emission reductions occurring at the Ports are not maintained after they are reported into the SIP that this measure may be implemented in the form of a backstop regulation by the SCAQMD or by the State or federal government, or other enforceable mechanisms, notwithstanding the limitations of the federal Clean Air Act.

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The District has previously proposed to address its need for enforceable measures by various other approaches, e.g., control measure MOB-03 in the 2007 AQMP and control measure IND-01 in the 2012 AQMP, which characterized the Ports as "indirect sources" of emissions. The 2007 MOB-03 was described as "a backstop measure for indirect sources of emissions from ports and port-related facilities" and in the ensuing years, District staff proposed and sought public review of a "backstop" rule that would be enforceable and applicable to the Ports, "Proposed Rule 4001." The Ports raised many questions and objections to control measure IND-01 and Proposed Rule 4001 in numerous comment letters¹ sent to the District and EPA. EPA, in its April 2016 action

¹ Comment Letters to U.S. Environmental Protection Agency dated November 19, 2015; California Air Resources Board dated March 25, 2014; South Coast Air Quality Management



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The San Pedro Bay Ports Clean Air Action Plan was developed with the participation and cooperation of the staff of the US Environmental Protection Agency, California Air Resources Board and the South Coast Air Quality Management District.

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partially approving the 2012 SIP, excluded the commitments proposed by IND-01 from its action and stated that it would respond to that in a separate rulemaking. (See 81 FR 22025 (April 14, 2016) US EPA Partial Approval and Partial Disapproval of California Air Quality SIP.) The District has reported that Proposed Rule 4001 has been placed on hold, in light of work to develop supposedly different approaches for the pending 2016 AQMP.²

The Draft 2016 AQMP indicates, however, that the District has not abandoned those efforts to establish policies and control measures that may provide a framework or justification for the District to adopt rules or regulatory measures that may be applied to the Ports, either directly or as a backstop or contingency measures. The Draft AQMP introduces a new proposed control measure "MOB-01" which states: "The proposed measures will replace control measures MOB-03 in the 2007 AQMP and IND-01 in the 2012 AQMP." (Draft 2016 AQMP, p. 4-24.) MOB-01 is described as a control measure to achieve emission reductions at commercial marine ports and is characterized in the Draft AQMP as a "facility-based mobile source control measure." Although the nomenclature may have changed, the Ports believe that proposed new MOB-01 is no different from the District's previous Ports-related control measures, where the District invoked its purported authority to regulate the Ports as "indirect sources" of emissions. The Ports point to the Draft AQMP, which states that "mobile sources" currently contribute about 88% of the region's total NOx emissions. It then acknowledges that "[s]ince the SCAQMD has limited authority to regulate mobile sources, staff worked closely with the CARB and EPA, which have primary authority over mobile sources, to ensure mobile sources perform their fair share of pollution reduction responsibilities" (p. ES-7).

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The Ports also note that in describing the MOB-01 control measure, the Draft 2016 Plan characterizes the Ports as a "facility-based mobile source." In addition to the troublesome wording of that characterization, the description of this proposed control

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District dated January 15, 2014, January 31, 2014, October 2, 2013, August 21, 2013, October 31, 2012, and August 30, 2012

² According to the minutes of the District's "Mobile Source Committee" meeting of April 15, 2016, included in the District's Board Meeting minutes from May 6, 2016 (agenda item #21), the U.S. EPA "in its recent decision on the approval of the 2012 AQMP did not evaluate IND-01 and will evaluate the control measure at some future date. Staff has been working on Proposed Rule 4001 to implement Control Measure IND-01 and has placed the rule development on hold with the development of the 2016 AQMP."

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measure strongly indicates that the District intends to use MOB-01 as an indirect source control measure in order to quantify and lock in the emissions reductions achieved by the Ports under the CAAP. These "facility-based mobile source measure" approaches would have serious negative effects on maritime commerce and impede the State of California's freight competitiveness. Those burdensome and counter-productive approaches would be directly in conflict with the goals of Governor Brown's Executive Order to improve freight transportation efficiency and increase competitiveness of California's freight system, as well as the recently-released California Sustainable Freight Action Plan. The Ports continue to oppose any form of a "rule" that would impose SCAQMD oversight on the Ports and are strongly opposed to the District creating or relying on any concept of a "facility-based mobile source measure," whether described as an "Indirect Source Rule," "Backstop Rule" or the "freight hub," "facility cap," and/or "freight facility performance targets" approach. Neither EPA nor CARB can require the District to adopt a control measure for MOB-01 because indirect source control measures cannot be required as a condition of SIP approval. (42 U.S.C. § 7410(a)(5)(A)(ii); Health & Safety Code, § 40468.) Therefore, the Ports have serious concerns about the District making enforceable commitments to the state and federal governments that the Ports will control "indirect sources."

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The District has not identified any legislation purporting to confer authority on the SCAQMD to regulate public marine facilities as "mobile sources."³ The District itself acknowledges that it does not have "primary regulatory authority" over the Port (or other large facilities identified as major sources of emissions, e.g., rail yards, airports, and distribution centers). Nevertheless, the Draft AQMP further states: "This measure [MOB-01] may be implemented in the form of a regulation by the SCAQMD within its existing legal authority, or by the State or federal government, or other enforceable mechanisms." (p. 4-24.) This statement raises legal issues regarding the extent of the District's limited "existing legal authority;" the Ports have previously raised these issues in opposition to PR 4001. The Draft Plan is vague and ambiguous as to the source and extent of any specific "existing legal authority" that may be contemplated by the District or by MOB-01. The District has not previously cited any specific authority under the California Clean Air Act for this type of regulation (Cf., Health & Safety Code §§ 39000 et seq., and more specifically Chapter 5.5 (§§ 40400-40536) dealing with the SCAQMD).

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³ The EPA itself treats "facilities based" emission sources as distinct from "mobile sources". See, e.g., 66 FR 65208 "Database of sources of environmental releases of dioxin-like compounds in the U.S., ref year 1987-1995. December 18, 2001.

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In fact, the District has no authority to regulate mobile sources or to draw any geographic boundary or to arbitrarily characterize source categories and declare those areas or groups of sources to be an "indirect source." "Mobile sources" of emissions are beyond the limited regulatory authority conferred by the Legislature on local or regional districts (e.g., Health & Safety Code § 40001(a); *also see*, 76 Ops. Cal. Atty. Gen. 11 (1993); 75 Ops. Cal. Atty. Gen. 256 (1992); 74 Ops. Cal. Atty. Gen. 196 (1991); 73 Ops. Cal. Atty. Gen. 229, 234-35 (1990)). Congress vested the federal government with the authority to set nationwide emissions standards for mobile sources, including non-road mobile engines and vehicles. (42 U.S.C. §§ 7521, 7547.) Congress expressly and impliedly preempted states from setting standards or other requirements relating to the control of emissions for mobile sources. (42 U.S.C. § 7543, (a) & (e).) The maritime goods movement emission sources are within the express and implied preemption. The Clean Air Act allows California to seek authorization from EPA to adopt "standards and other requirements related to the control of emissions" for some, but not all, mobile sources covered by MOB-01. (42 U.S.C. §§ 7543 (b) & (e)(2)(A).) Thus, District does not have mobile source regulatory authority.

The Clean Air Act defines an indirect source as "a facility, building, structure, installation, real property, road, or highway which attracts, or may attract, mobile sources of pollution." (42 U.S.C. § 7410(a)(5)(C).) An "indirect source review program" is "the facility-by-facility review of indirect sources of air pollution, including such measures as are necessary to assure, or assist in assuring, that a new or modified indirect source will not attract mobile sources of air pollution" that would contribute to the exceedance of the NAAQS. (42 U.S.C. § 7410(a)(5)(D)(i).) "Direct emissions sources or facilities at, within, or associated with, any indirect source shall not be deemed indirect sources for the purpose" of an indirect source review program. (42 U.S.C. § 7410(a)(5)(C).) Air pollution control districts are not statutorily authorized to impose a permit system on indirect sources. (*Friends of Oceano Dunes, Inc. v. San Luis Obispo County Air Pollution Control District* (2015) 235 Cal.App.4th 957, 964, as modified on denial of reh'g (Apr. 23, 2015).)

The control measures also fail as an indirect source review program because the businesses within the geographic and source designated areas are not a "new or modified indirect emissions source." (42 U.S.C. § 7410(A)(5).) A source is new if it adds to the air basin's existing emissions baseline. (*National Ass'n of Home Builders v. San Joaquin Valley Unified Air Pollution Control Dist.* (9th Cir. 2010) 627 F.3d 730, 731-32.) The Clean Air Act defines modification as "any physical change in, or change in the method of operation, of a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of an air pollutant not previously emitted." (42 U.S.C. § 7411(a)(4).)

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Only those provisions necessary to meet the requirements of the Clean Air Act are included in the SIP. (Health & Safety Code, § 39602.) The purpose of an indirect source program is to ensure that mobile source emissions do not “cause or contribute to air pollution concentrations exceeding any national primary ambient air quality standard for a mobile-source related air pollutant.” (42 U.S.C. § 7410(a)(5)(D)(i).) MOB-01 is not necessary to meet the NAAQS requirements of Clean Air Act. The emissions reductions listed in the Draft AQMP for MOB-1 for the years 2023 and 2031 are listed as “To Be Determined” – which indicates that the reductions will be determined once the inventory and control approach are identified, and are not relied upon for attainment demonstration purposes. In reality, there would be little to no emission reduction benefit from indirect source measures because state, federal and international authorities have adopted rules and regulations to significantly reduce NOx emissions from these on- and off-road mobile sources. According to the 2016 AQMP, “[t]he effect of the rules and regulations are significant, showing reductions of over 67 percent in NOx emissions and close to 60 percent in VOC emissions between 2012 and 2023, even with increases in fleet population” (p.3-4).

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MOB-01 further violates the dormant Commerce Clause by impeding the free and efficient flow of commerce by imposing a heavy burden on ports, the shipping industry, navigation and commerce without any local environmental benefit, or an insubstantial local benefit at best.

The Draft 2016 AQMP also inappropriately refers to the Ports as an “Implementing Agency,” which the AQMP defines as “the agency(ies) responsible for implementing the control measure” (p. IV-A-20MOB-01 states that “[t]he Ports through its CAAP update can decide the most effective approaches to achieve the overall emission reductions targets” (p. IV-113). However, to the extent the AQMP singles out and mischaracterizes the Ports as “Implementing Agencies,” without including all of the other public and private partners working to achieve emission reductions, it erroneously implies that the Ports would have an assigned enforcement obligation, and improperly shifts an unwarranted burden of regulatory implementation to the Ports. While the Ports have successfully adopted voluntary efforts to reduce emissions from maritime goods movement sources, the Ports are not air agency regulators. The Ports do not have the regulatory responsibility or authority to achieve emission reductions from sources over which they do not have jurisdiction, ownership or operational control. Further, the District is well aware from the Ports’ previous comment letters on these issues, that generally the Ports lack authority to enforce as mandates the programs on all mobile sources operating in the Ports as they are preempted by state, federal and international law. This portion of the AQMP, requiring the Ports to select and implement the control measures, does not address or overcome these legal impediments.

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The Ports respectfully remind the District that the CAAP is a planning document that provides guidance on strategies and targets that are ultimately implemented through individual actions adopted by each Port's respective Board of Harbor Commissioners (Boards). The State granted to the Cities of Long Beach and Los Angeles exclusive authority to implement the Tidelands Trust under the oversight of the State Lands Commission. Each city has been appointed as a trustee and has established their respective Board of Harbor Commissions with exclusive control and management of the Tidelands and revenues and expenditures from the Tidelands. However, such discretion must be exercised in accordance with their obligations to prudently manage Tidelands assets and revenues within a nexus and proportionality to the Tidelands Trust interest, as well as in accordance with applicable laws such as the California Environmental Quality Act (CEQA) and principles of federal preemption. The District cannot mandate action by each Port's Board of Harbor Commissioners, nor can the District direct how the Ports may be obligated to spend state Tidelands money; only the appointed trustee can make discretionary actions to obligate state Tidelands funds. Specifically, any measures listed in the AQMP or the CAAP must each require the Boards to authorize the expenditure of monies and program costs, or to approve conditions of infrastructure project development in their discretion as a CEQA lead agency and as Tidelands trustees.

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Further, the District has not complied with the procedural requirements to adopt indirect source control rules that are contemplated in MOB-01. The requirements are: (1) ensure, to the extent feasible, and based upon the best available information, assumptions, and methodologies that are reviewed and adopted at a public hearing, that the proposed rule or regulation would require an indirect source to reduce vehicular emissions only to the extent that the district determines that the source contributes to air pollution by generating vehicle trips that would not otherwise occur; (2) ensure that, to the extent feasible, the proposed rule or regulation does not require an indirect source to reduce vehicular trips that are required to be reduced by other rules or regulations adopted for the same purpose; (3) take into account the feasibility of implementing the proposed rule or regulation; (4) consider the cost effectiveness of the proposed rule or regulation; (5) determine that the proposed rule or regulation would not place any requirement on public agencies or on indirect sources that would duplicate any requirement placed upon those public agencies or indirect sources as a result of another rule or regulation adopted pursuant to Health and Safety Code sections 40716 or 40717. (Health & Saf. Code, § 40717.5.)

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Instead of MOB-01, the Ports suggest that a collaborative, voluntary approach, consistent with the cooperative partnership that has been proven to be successful over the past decade, will continue to be the most effective means for controlling emissions from maritime goods movement activities within the jurisdiction of Ports. This approach,

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which could be memorialized under a cooperative agreement between the Ports and SCAQMD, CARB, and EPA, would benefit all parties because it continues the collaborative effort that has resulted in unprecedented emission reductions at the Ports, shares responsibility between Parties, provides more certainty for the local economy, avoids litigation, insures incentive funding that is tied to excess emissions will continue to be available, and will result in better air quality.

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2. SCAQMD Growth Management Control Measure: EGM-01

The Draft 2016 AQMP states: "[f]or the purposes of this measure [EGM-01], indirect sources include all facilities not covered by another 2016 AQMP Control Measure. In addition, during the rule development process, additional indirect sources may be included or excluded" (p. IV-A-169).

The Ports should not be included within this control measure in the event MOB-01 is removed from the 2016 AQMP or during the rule development process. In addition to the reasons stated above in section 1, the Ports have serious concerns about the District making a commitment to the state and federal governments that the SCAQMD will control growth or dictate land use decisions. SCAQMD has no authority to control growth or overrule local land use decisions. (Health & Saf. Code, § 40716 [air districts cannot infringe on the existing authority of counties and cities to plan or control land use]; see also Health & Saf. Code, §§ 40000, 40414, 40440.1, 40717.5(c)(1).) Land use is within the exclusive preview of local cities and counties.

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3. SCAQMD Mobile Source Control Measure: MOB-14 Emission Reductions from Incentive Programs

The Draft 2016 AQMP mobile source control measures include development of incentive funding programs and supporting infrastructure for early deployment of advanced control technologies. MOB-14 states that it seeks to develop a rule similar to the San Joaquin Valley Air Pollution Control District Rule 9610 – "State Implementation Plan Credit for Emission Reductions Generated through Incentive Programs" -- such that emissions reductions generated through incentive programs can be credited in the SIP emission inventories.

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It will be critical to prioritize and secure the necessary funding needed to implement the proposed incentive-based measures in the Draft AQMP and achieve the aggressive emission reduction targets in the South Coast Air Basin. The Ports know first-hand that the move toward zero emissions is a costly endeavor and have placed significant emphasis on efforts to advance the development of near-zero and zero emissions equipment for on-terminal and on-road applications. Through the Ports' Technology

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Advancement Program (TAP), we have been involved with funding the demonstration of clean technologies used in port operations for nearly a decade. Significant progress has been made and we expect that zero emissions operations will be feasible in the future. The scale of this effort will be significant, with cost for the equipment and fueling infrastructure in the *Billions* of dollars.

The Ports and the maritime goods movement industry will require a substantial amount of funding assistance from the local, state and federal agencies. As such, the Ports are supportive of incentive funding to accelerate advancement of technologies. The Ports continue to strongly support the implementation of funding programs such as the Proposition 1B Goods Movement Emission Reduction Program and the Carl Moyer Memorial Air Quality Attainment Program, both of which have provided funding for much needed assistance with upgrading wharves for shore power, the replacement of drayage trucks, and the replacement and repower of engines in cargo-handling equipment, harbor craft, and locomotives.

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While the Ports support funding programs and the need to credit emissions reductions generated from through incentive funding programs, the Ports strongly recommend that MOB-14, or any resulting regulatory strategy be structured in such a way that does not preclude the maritime goods movement industry's ability to secure grant funding for early actions. For example, it is not clear from the description of MOB-14 whether facility emission caps or port backstop rules could effectively disqualify companies and agencies from received grants, because typically grants funds cannot be used for regulatory compliance. The Ports believe that this unintended consequence of a control measure like MOB-14 could significantly impede early equipment replacement and transition to zero emission technologies, and also severely affect the economic competitiveness of the maritime goods movement industry. In addition, if the required emission levels for attainment are not be met in the region, the Ports must not be held accountable for attaining emission reductions that are predicated on incentive funding if the funding does not come through at the necessary and appropriate levels.

4. Inclusion of Revoked NAAQS in the 2016 AQMP

The Draft 2016 AQMP includes updates to previous plans for the revoked 1-hour (120 ppb) and 1997 8-hour (80 ppb) ozone NAAQS (p. 4-1), rather than addressing the current and controlling ozone NAAQS. For example,, the Draft 2016 AQMP attainment strategy seeks to reduce NOx emissions sufficiently to meet the revoked 1-hour ozone NAAQS of 120 ppb by 2023 and the revoked 8-hour ozone NAAQS of 80 ppb by 2024, instead of focusing on achieving the applicable ozone NAAQS of 75 ppb by 2032. This approach is inappropriate and unnecessary.

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While the SCAQMD is required to comply with the anti-backsliding provisions of the Clean Air Act [CAA sec 172(e)], which preclude the adoption of controls that are less stringent than existing controls applicable in the District, the 2012 AQMP does not contain any mandates akin to MOB-01 that are applicable to the Ports. Therefore, the removal of MOB-01 from the 2016 AQMP by the District would not be "backsliding" from any existing standards relied upon for attainment under the existing 2012 AQMP.

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Furthermore, the proposed approach of targeting the revoked standards and their associated deadlines of 2023 and 2024, which are significantly earlier than the controlling deadline of 2032 in the current regulations, puts the region at unnecessary risk that contingency measures for ozone will be required in the three years leading up to the attainment date for the revoked NAAQS.

5. Contingency Measures

The Draft 2016 AQMP states the following regarding contingency measures: "Some measures in the summary table are listed as "TBD" (to be determined) for emission inventory, emission reductions and/or cost control. The "TBD" measures are not relied upon to demonstrate attainment of the standards but have been included if potentially feasible for the integrated, comprehensive plan. "TBD" measures require future technical and/or cost assessments in order to better understand and quantify emissions from and cost impact to the anticipated affected sources for the measures. It may be determined at that time that the "TBD" measure is not feasible or cost-effective to adopt and implement, or if reductions can be achieved, those reductions would be submitted into the SIP. Thus, "TBD" measures are included in the Plan as needed for contingency or if there are any shortfalls in committed emission reductions" (p. IV-A-18).

50-17

The District needs to identify specifically which measures in the AQMP it intends to be "contingency measures." Referring to "TBD" measures does not provide sufficient identification because the measure language is not consistent with the measure being a contingency measure. The contingency measures should only be for the *applicable* NAAQS, and not for the revoked NAAQS attainment timeframes.

Further, EPA's March 6, 2015, rulemaking allows extreme nonattainment areas for ozone to develop and adopt contingency measures meeting the requirements of 182(e)(5) (black box) to satisfy the requirements for both attainment contingency measures in CAA sections 172(c)(9) and 182(c)(9). These enforceable commitments must obligate the state to submit the required contingency measures to the EPA no later

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than three years before any applicable implementation date, in accordance with CAA section 182(e)(5). (See Federal Register, Vol. 80, No. 44, 12264 Friday, March 6, 2015.) Therefore, it is premature to submit contingency measures for 2032. As for reasonable further progress (RFP) contingency measures, these are only needed to provide the incremental shortage in emission reductions and last one year.

50-17
Con't

EPA is also continuing its long term policy that allows promulgated federal measures to be used as contingency measures as long as they provide emission reductions in the relevant years in excess of those needed for attainment or RFP. The 2016 AQMP needs to be revised to reflect these allowances that EPA has made for extreme nonattainment areas.

6. State and Federal Control Measures and Incentive Funding Strategy

The Draft AQMP includes additional control measures to reduce emissions from sources that are primarily under State and Federal jurisdiction, including on-road and off-road mobile sources. As stated, these reductions are needed to achieve the remaining emission reductions necessary for the Basin's attainment. The Draft AQMP identifies 107 tons of NOx reductions in 2023 and 97 tons of NOx reductions in 2031 to help the District meet attainment. Almost all of these reductions, however, are associated with the measures calling for "further deployment of cleaner technologies," which involve accelerating the development, demonstration, and deployment of cleaner engine technologies, in whole or in part through the use of incentive programs. Achieving these substantial emission reductions "is predicated on securing the amount of funding needed" to further deploy these cleaner technologies, according to the Draft AQMP.

50-18

The AQMP estimates an approximate range of \$4 to \$11 billion in funding over a 7 to 15 year period to achieve the projected NOx emissions reductions from mobile sources (p. 4-59). "The total funding needed ranges from \$13 to \$16 billion to achieve the NOx emission reductions associated with the State Mobile Source Strategy" (p. 4-62). "A total of \$1.1 to \$1.6 billion of stationary source incentive funding programs are proposed with projected cost-effectiveness levels in the same range as the mobile source incentives" (p. 4-66). The AQMP further states:

"The amount of incentive funding needed is estimated to be approximately \$11 – 14 billion in total funding over a seven to fifteen year period. Currently, the SCAQMD receives around \$56 million per year in incentives funding to accelerate turnover of on- and off-road vehicles and equipment under SB1107, a portion of the state's Tire Fee, and AB923. AB 923 will sunset in 2024. In addition, the District has received close to \$550 million in Proposition 1B funding. The last round of Proposition 1B will be ending in

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the next couple of years. The District has also received funding under the DERA program on a competitive basis. However, the amount of funding needed to achieve the NOx emission reductions associated with the "Further Deployment" measures proposed in the State Mobile Source Strategy and the 2016 AQMP will require on the order of \$1 billion per year if funding is available beginning in 2017" (pp. ES-8 to 9). As such, the short-fall is significant.

50-18
Con't

Assuming \$16 billion is a reasonable estimate – and the accuracy of that estimate is open to question – should the District fail to secure this funding, it may be forced to adopt the "contingency" measures specified in the Draft AQMP, of which MOB-01 may be is one. The Ports are concerned the District may not secure the necessary funding, which would likely necessitate the hasty adoption of such contingency measures without a comprehensive analysis of the impacts, or possible alternatives, and without robust public input.

In addition, the Draft AQMP acknowledges that achieving the emissions reductions from the 2016 AQMP incentive-based control measures for both mobile and stationary sources will require approximately \$11 – \$14 Billion in total funding. Given this significant funding level needed to attain the ozone NAAQS over the next seven to fifteen years, the Draft AQMP refers to "an action plan [that] will be developed as part of the AQMP public adoption process" to identify the necessary actions to secure new sources of funding to implement the AQMP (p. 4-66). However, the Draft AQMP provided insufficient details on what would be contained in such an Incentive Funding Action Plan.

50-19

Furthermore, at the District's Mobile Source Committee meeting of July 22, 2016, the AQMD staff presentation indicated that a draft of the Incentive Funding Action Plan is expected as part of 2016 AQMP adoption. However, District staff has informed the Ports that an Incentive Funding Plan will not be available until *after* the AQMP has been adopted. This is not acceptable. Without a review of the Incentive Funding Action Plan concurrent with the Draft AQMP, it is not known whether the Plan is viable (i.e., activities to secure additional funding or actions are not realized), and the risk of contingency measures being triggered cannot be evaluated.

For this reason, the Ports urge the District to fully analyze the Incentive Funding Action Plan, and all contingency measures now, and to release that analysis *prior to* the close of public comment so that the public can evaluate the adequacy of the District's strategy and comment on that strategy.

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7. Socioeconomic Impact Analysis

The Draft 2016 AQMP indicates that there will be no analysis of contingency measures in the socioeconomic study. Also, it appears that several measures that do not have emissions reduction targets or other information will not be included in the socioeconomic analysis. This means there will be no comprehensive review of the impacts associated with implementation of all measures or the repercussions of the potential adoption of the "facility-based mobile source measures" discussed in the MOB-01 section above.

50-20

The Ports request a full socioeconomic analysis of all control measures, and that the socioeconomic analysis be completed and an adequate opportunity for public comment be provided *prior to* action on the Draft 2016 AQMP.

50-21

Furthermore, it appears that the socioeconomic study will only analyze the impacts associated with approximately \$16 billion in government subsidies, not including the match funding that will be required from private operators. The Ports are concerned that this amount is substantially underestimated and ignores the private capital that will be necessary to purchase thousands of pieces of costly near-zero and zero emission equipment to be deployed at the ports and throughout the region.

50-22

Finally, the description of the anticipated socioeconomic study assumes that there will be no tax increases to fund these incentives; however, the Draft AQMP contradicts this assumption as it clearly states AQMD's intent to seek local and state ballot measures, which would include taxpayer funding (p. 4-68).

50-23

The socioeconomic analysis must include an analysis of the impacts on the private sector from having to invest in significant new capital costs associated with cleaner equipment, and it must include an analysis of the impact on taxpayers as a result of higher taxes.

50-24

8. Specific Technical Comments on the 2016 Draft AQMP

a. Appendix IV-A, Table IV-A-2 SCAQMD Proposed Mobile Source 8-Hour Ozone Measures, p. IV-A-4

The title of MOB-01 is inconsistent with the description of the control measure provided starting on page IV-A-109, which lists "CO" as a target pollutant. The control measure summary for MOB-01 (pp. IV-A-109-115) indicates that the goal of the measure is to seek emission reductions of NOx, SOx, and PM2.5. Please

50-25

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clarify if the measure is also intended to address emissions of CO, otherwise CO should be removed from Table IV-A-2 and updated accordingly.

50-25
 Con't

In addition, for MOB-01, the emission reductions in tons per day (tpd) for 2023/2031 are identified as "TBD" with a corresponding footnote "b", which states "Submitted into the SIP as part of reporting or in baseline inventories for future AQMP/SIP Revisions." We request that the District provide further clarification on how the "Rate of Progress" will be calculated and compared to ensure that the emissions reductions achieved by the proposed control measure are surplus emissions.

50-26

b. Appendix IV-A, Emission Reductions at Commercial Marine Ports [All Pollutants], p. IV-A-109

The Ports each prepare annual air emissions inventories of port-related sources, and in July 2015, transmitted the San Pedro Bay Ports 2012 air emissions inventory, as well as forecasted port-related emissions for each year through 2031 for inclusion on the 2016 AQMP based on discussions with District and CARB staff.^{4,5} It is not clear whether the emissions of NOx, SOx, and PM2.5 listed in the Control Measure Summary Table (p. IV-A-109) reflect the Port's actual emissions, as they do not correspond with those transmitted to the District and CARB.

50-27

It is the Ports' understanding that the emissions from port-related sources in the 2016 AQMP would reflect the actual emissions reported by the Ports. These discrepancies should be addressed.

To provide for a meaningful and comprehensive review, the Ports request that the District identify the port-related sources (i.e., ocean-going vessels, harbor craft, locomotives, cargo-handling equipment, and heavy-duty trucks) of emissions that make up the total emissions in the Control Measure Summary (p. IV-A-109). It is

⁴ Email Communication, Subject: San Pedro Bay Ports 2012 Emissions Inventory. July 21, 2015. Allyson Teramoto (Port of Long Beach) to Henry Hogo, Joe Casmassi, Randall Pasek (AQMD); Nicole Dolney, Sylvia Vanderspek, Gabe Ruiz (CARB).

⁵ Email Communication, Subject: 2016 AQMP Emissions Forecasting Dial +1 (312) 757-3121 Access Code: 299-388-957. August 9, 2016. Archana Agrawal (Starcrest Consulting Group, LLC) to Henry Hogo, Randall Pasek (AQMD); Nicole Dolney, Sylvia Vanderspek, Russel Furey, Vernon Hughes, Gabe Ruiz (CARB).

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also important to identify the assumptions used to estimate future emissions in 2022, 2023, and 2031. For instance, it is important to understand the assumed International Maritime Organization (IMO) tier level of engines installed on ocean-going vessels calling at the Ports, as well as the fleet makeup of all other port-related source categories, including heavy-duty trucks, cargo-handling equipment, locomotives, and harbor craft. It is also important to identify the source-specific "growth" factors that were used to estimate future year emissions.

50-27
 Con't

The **table** on the next page shows a comparison of the emissions provided in the Draft 2016 AQMP and the Ports' actual 2012 emissions and forecasted emissions for 2023 and 2031. As shown, there are several inconsistencies in the emissions inventories prepared by the Ports and the inventory used for the AQMP.

Annual Average	2012	2022	2023	2031
NOx (MOB-01 Draft 2016 AQMP)	39.37	TBD	42.39	35
NOx (2012 San Pedro Bay Ports Actual Emissions)	41.95	47.80	46.35	42.03
PM2.5 (MOB-01 Draft 2016 AQMP)	1.06	TBD	0.81	0.93
PM2.5 (2012 San Pedro Bay Ports Actual Emissions)	1.03	0.83	0.84	0.93
SOx (MOB-01 Draft 2016 AQMP)	4.04	TBD	1.23	1.47
SOx (2012 San Pedro Bay Ports Actual Emissions)	3.90	0.81	0.82	0.91

50-28

As previously mentioned, we request that the control costs associated with MOB-01 (and all other control measures) be quantified and included in the 2016 AQMP.

c. Appendix IV-A, Emission Reductions at Commercial Marine Ports [All Pollutants], CARB In-Use Fleet Rules. p. IV-A-112

It is stated in this paragraph that "The majority of marine vessel emissions are created by main propulsion engines, but auxiliary engines emissions are important, in part because they occur at dock in closer proximity to persons in and around the port" (p. IV-A-112). This statement is misleading in that the contribution of auxiliary engine emissions (excluding boiler emissions) to overall ocean-going vessel emissions (including transit, maneuvering, and hoteling at-berth) is often times nearly equivalent to or higher than main propulsion engines, which are only operational during transit and maneuvering.

50-29

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d. Appendix IV-A, Format of Control Measures, Emission Reductions. p. IV-A-19

This section states that: "During the rule development, the most current inventory will be used. However, for tracking rate-of-progress for the SIP emission reduction commitment, the approved AQMP inventory will be used. More specifically, emission reductions due to mandatory or voluntary, but enforceable actions shall be credited toward SIP obligations" (p. IV-A-19).

We request that any differences between the "most current inventory" used for rule development and the "approved AQMP inventory" be clearly described and addressed prior to any mandatory or voluntary emissions being credited toward SIP obligations.

50-30

e. Appendix IV-B, Tier 4 Vessel Standards. p. IV-B-50

Under this proposed action, CARB intends to work with the EPA, U.S. Coast Guard, and international partners to urge the International Maritime Organization (IMO) to adopt a Tier 4 NOx standard for new ocean-going vessels and efficiency requirements for existing vessels (p. IV-B-50).

The Ports support the advocacy for more stringent IMO standards and efficiency targets for ships. Currently, newly built ships are required to meet IMO Tier 3 standards for NOx. The Ports have developed an IMO Tier distribution forecast based on the existing world fleet, estimated future vessel calls at the Ports, and Tier 3 order information provided by the engine manufactures. The Ports' Tier distribution forecast indicates strongly that there will be no significant (less than 5%, best case scenario) Tier 3 penetration of the ship calls by 2023. Further, the forecast indicates that the existing world fleet (Tier 0-2) could service the Ports through the mid to late 2030s to 2040s.

50-31

Recognizing that Tier 3 fleet penetration will be significantly slower than CARB is estimating and coupled with the fact that there have been no discussions at IMO Marine Environmental Protection Committee related to a Tier 4 NOx engine standard, the Ports believe that it is highly inappropriate to assume aspirational reductions related to Tier 4 fleet penetration until the standard is at least drafted if not promulgated. Taking reductions for standards that are neither in discussion nor in development is not appropriate for SIP planning purposes. Therefore, the Ports request that the estimated emissions reductions associated with Tier 3 fleet penetration this measure be reconsidered for the proposed SIP commitment and that all reductions associated with Tier 4 be removed.

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Furthermore, it is stated that: "The new standards would be allowed to enter the fleet using natural turnover and would not be accelerated by additional rules or incentives" (p. IV-B-51). While the Ports are in favor of CARB advocating for IMO Tier 4 NOx standards and efficiency targets for ships, we believe that effort should be placed on encouraging the cleanest ships to deploy to our ports now. There are currently fewer than 50 ships worldwide on order that will have IMO Tier 3 capabilities and it is unknown where they will be they deployed. We do not foresee a sizeable number of Tier 3 ships servicing our ports in the near term. As more of these ships become available for deployment, the Ports recommend the development of statewide strategies, such as incentive funding programs to attract these clean new ships to our Ports.

50-31
Con't

f. Appendix II, Chapter 2, PM10 Temporal Variation. p. II-2-57

The Ports are concerned that the narrative in this section misrepresents what is actually occurring at the Ports. In particular, we feel the following statement is misleading:

Moreover, higher port activity due to peak cargo traffic which typically occurs in the fall of each year coupled with the lower mixing height in the fall may also contribute to the higher PM10 concentrations during this time of year.

50-32

Actually, higher port activity generally occurs in the middle to late summer, however the shape of the peak has become less pronounced. And furthermore, historical data received at the Ports' Air Monitoring Stations indicates that PM10 concentrations near the Ports are no higher in the fall than any other time of the year. Since these findings do not support the assumption in the statement above, the Ports request that the statement above be removed from the document.

Responses to Comment Letter from Ports of Long Beach & Los Angeles (San Pedro Bay Ports)
(Comment Letter 50)

Response to Comment 50-1:

Staff appreciates the support for the development and implementation of the 2016 AQMP. Staff also recognizes the hard work and commitment it was taken to successfully fulfill the voluntary Clean Air Action Plan (CAAP) that has benefited the region.

Response to Comment 50-2:

The intent of the proposed facility-based measures is not to interfere with critical funding and grant monies. Staff is proposing to work to ensure that opportunities for emission reductions are realized and accomplished.

Response to Comment 50-3:

Staff agrees that a collaborative effort is the best approach in establishing a successful program, particularly in light of various regulatory authorities and interests. In addition, staff recognizes some of the limitations faced by the Ports and their terminal operators. The SCAQMD does have authority to regulate indirect sources such as the ports. Staff encourages stakeholders and interested parties to participate in the development of the facility-based programs so all interests and needs are considered. With regard to SCAQMD's regulatory authority, see Response to Comment 96-4.

Response to Comment 50-4:

SCAQMD staff will need to review the updated CAAP to understand the goals set forth and to ensure that all available emission reduction opportunities are included. As such, the voluntary program under MOB-01 could be established based on the updated CAAP.

Response to Comment 50-5:

Please see Response to Comment 38-1 regarding the timing of the release of the Plan and related documents, as well as review periods for those documents. The draft Financial Incentive Funding Action Plan was released in December and the public is provided time for review and comment before Board consideration in February 2017.

Response to Comment 50-6:

Staff continues to see value in the facility-based measures, which has garnered support from other commenters, so they will remain in the proposed 2016 AQMP. However, staff does acknowledge concerns and seeks to resolve those concerns during the working group meetings. Please see Response to Comment 49-3 for further discussion of MOB-01.

Given the comments received on the various perspectives of the SCAQMD's legal authority during the public process in implementing the 2007 AQMP MOB-3 and the 2012 AQMP IND-01 measures, staff believes that a more constructive approach to achieving additional emission reductions in the near-term is through the actions the Ports are taking in the development of the Clean Air Action Plan (CAAP) update. If such actions are voluntary in nature and the associated emission reductions are proposed to be included

in the SIP, enforceable commitments must be made to ensure the reductions are surplus and permanent. The enforceable commitment may be in the form of a rule or other enforceable mechanisms. For responses relative to the need for and authority for measure MOB-01, see Responses to Comments 96-3, 96-4, 96-11, 96-13, 96-23, and 96-29.

To the extent that MOB-01 is developed to seek additional emission reductions on a separate track from EGM-01, the Ports will not be included under EGM-01. Please also see Response to Comment 96-32.

MOB-14 recognizes emission reductions associated with funding programs and does not preclude any entities from obtaining grant funding since the funding programs are voluntary. For more details on discussion of MOB-14, see Responses to Comments 96-39 and 96-40.

The 2016 AQMP does focus on attaining the NAAQS but as described in Chapter 6, there are anti-backsliding requirements associated with revoked standards, including emission reduction commitments. Also see Response to Comment 96-7.

For a discussion of Clean Air Act contingency measures, see Chapter 4 of the AQMP and Response to Comment 96-42.

The Socioeconomic Assessment evaluates the cost impacts from both the stationary and mobile source strategies. Since MOB-01 is seeking additional emission reductions to help meet the State Strategy "Further Deployment of Cleaner Technologies" measures, the assumptions for the "Further Deployment" measures have been included. For the issue of socioeconomic analysis of MOB-01 and other facility-based measures, see Responses to Comments 50-20 through 50-24.

For a discussion of the incentive funding plan, see Responses to Comments 50-18 and 50-19.

The emission inventories will be updated to reflect the Ports emissions inventory with concurrence from CARB. More details regarding the emissions inventory can be found in Responses to Comments 50-27 through 50-30.

Response to Comment 50-7:

Please see Response to Comment 50-6 relative to the commenter's requested changes.

Control measure MOB-01 does not exceed the District's authority. See responses to Comments 96-3 and 96-4 for a more detailed discussion.

Please see Responses to Comments 50-5 and 50-19 regarding the Financial Incentive Funding Action Plan. Staff again appreciates the Ports past efforts in cleaning the air and looks forward to collaborating on future emission reduction efforts.

Please see Response to Comment 38-1 regarding the timing of the release of the Plan and related documents, as well as review periods for those documents. The draft Financial Incentive Funding Action Plan was released in December and the public is provided time for review and comment before Board consideration in February 2017.

Response to Comment 50-8:

Staff is proposing that the 2007 AQMP Measure MOB-03 and 2012 AQMP Measure IND-01 be replaced since the emission reductions associated with the two measures have already been achieved or are projected to be achieved. As such, the 2016 AQMP Measure MOB-01's intent is to help achieve a portion of the emission reductions associated with the State SIP Strategy "Further Deployment" measures. Please see Responses to Comments 96-2 and 96-3 for more details. Also, see Response to Comment 96-4 regarding the SCAQMD's regulatory authority.

Response to Comment 50-9:

With regard to the issue that neither CARB nor U.S. EPA may require the SCAQMD to adopt an indirect source rule, see Response to Comment 96-36. With regard to the assertion that measure MOB-01 would conflict with state goals to improve transportation efficiency and sustainable freight, staff disagrees. Both these goals are complementary to achieving clean air goals since they seek to reduce fuel consumption and reduce the amount of work required to move freight. Measure MOB-01 will seek to take advantage of improvements such as these that improve air quality.

Response to Comment 50-10:

With regard to SCAQMD's authority, see Responses to Comments 96-4 and 96-33. With regard to the claim that SCAQMD is attempting to regulate mobile sources in a manner prohibited by the Clean Air Act, See Response to Comment 96-11. The SCAQMD is not proposing any permit system for indirect sources. With regard to the argument that indirect source measures may only apply to new or modified sources, see Response to Comment 96-12. With regard to the argument that the facility-based measures are not necessary, see Responses to Comments 96-11 and 96-29.

Response to Comment 50-11:

With regard to identifying the Ports as "implementing agencies," see Response 96-20. With regard to the Ports' claim that they lack any authority to impose requirements on their tenants, see Response 96-16. With regard to the argument that reducing air pollution will violate the Tidelands Trust, see Responses to Comments 96-27 and 96-28.

Response to Comment 50-12:

SCAQMD will comply with Health and Safety Code §40717.5 when and if it adopts an indirect source rule. The statute applies when the agency adopts or amends a rule, not when it adopts an AQMP. See Response to Comment 96-10.

Response to Comment 50-13:

Proposed Measure MOB-01 is proposing a collaborative approach to identify actions that potentially result in emission reductions and may result in the development of enforceable mechanisms such as a cooperative agreement that the commenter is suggesting. Also, see Responses to Comments 96-2 and 96-3 regarding MOB-01.

Response to Comment 50-14:

With regard to the Ports' request to be excluded from measure EGM-01, see Response to Comment 96-32. It should be noted that measure EGM-01 does not seek to plan or control land use, establish zoning

requirements, or specify what land uses a city may allow in a given area. It would only seek to reduce emissions from indirect sources, which is clearly within SCAQMD's authority. See Response to Comment 96-4.

Response to Comment 50-15:

Please see Responses to Comments 96-38 and 96-39.

Response to Comment 50-16:

See Response to Comment 96-7.

Response to Comment 50-17:

With regard to contingency measures, see Chapter 4 of the AQMP and Response to Comment 96-42.

Response to Comment 50-18:

The emission reductions associated with the State SIP Strategy mobile source measures are commitments that CARB has made to achieve in order for the region to attain federal air quality standards by their applicable dates. CARB has indicated that they plan to provide additional discussion on actions to be taken to make up for any emissions reduction shortfall (this includes having sufficient incentives funding) in meeting the state's emission reduction commitments. Any actions that CARB proposes will be vetted through a public process. See also Response to Comment 50-17.

Response to Comment 50-19:

A Draft Financial Incentives Funding Action Plan was released on December 16, 2016 for a 30-day written comment period. In addition, the funding levels that are being sought have been analyzed as part of the socioeconomic analysis released in December 2016 for public comments.

Response to Comment 50-20:

The Draft Socioeconomic Report quantifies costs for control measures with quantified emission reductions only. The costs and emission reductions were analyzed for contingency measures BCM-01 (Further Emission Reductions from commercial cooking) and BCM-04 (Manure Management strategies). As stated in Chapter 4 of the Draft Final 2016 AQMP and reiterated in Appendix 2-A of the Draft Socioeconomic Report, the "facility-based" SCAQMD mobile source measures—MOB-01, MOB-02, and MOB-03—are being proposed to facilitate local implementation of the state's State Implementation Plan (SIP) Strategy "Further Deployment of Cleaner Technologies" measures. The SCAQMD measures propose a process to also identify voluntary actions that could potentially result in additional NOx emission reductions beyond the state's emission reduction commitments. Since these actions are not specifically identified at this time and may be voluntary in nature, staff does not presume that the affected industries and businesses would voluntarily incur any costs in addition to what has been quantified for CARB's "Further Deployment" measures.

Response to Comment 50-21:

The Draft Socioeconomic Report was released on November 19, 2016, with an additional public review and comment period of 30 days that ended on December 19, 2016. The Preliminary Draft Socioeconomic Report was released on August 31, 2016 with a comment period of 60 days. The preliminary draft covered the estimates of costs and benefits of the plan and were released earlier to maximize the review time for public and stakeholders. See Response to Comment 50-20 regarding the request to include all control measures in the socio-economic analysis.

Response to Comment 50-22:

The Draft Socioeconomic Report analyzes macroeconomic impacts associated with the total incremental cost of implementing the Draft 2016 AQMP. The total incremental cost includes matching funds required from affected businesses and consumers to purchase and maintain near-zero and zero emission equipment as well as different levels of government incentive funding. Please see Chapter 2 of the Draft Socioeconomic Report for more details on incremental costs.

Response to Comment 50-23:

The Draft Financial Incentives Action Plan for the 2016 AQMP, released in December 2016, provides a set of proposed actions that will be taken by the SCAQMD along with public and private sector stakeholders and the public at large to secure additional financial incentive funding. This includes estimates of potential revenues from each source. Taxpayer funding from local and state ballot measures represents a potential funding source outlined in the Plan. To be conservative about the prospect of securing additional public revenue from new sources, the Draft Socioeconomic Report has analyzed a worst-case scenario under which all incentive funding is assumed to be financed from existing state revenues with no health benefits included. This worst-case scenario is expected to have minimal impact on projected job growth in the region.

Response to Comment 50-24:

Please see Responses to Comments 50-22 and 50-23.

Response to Comment 50-25:

The reference to “CO” has been corrected in the Draft Final 2016 AQMP released in December 2016.

Response to Comment 50-26:

Please see Response to Comment 96-54.

Response to Comment 50-27:

Please see Response to Comment 96-56.

Response to Comment 50-28:

Please see Response to Comment 96-56.

Response to Comment 50-29:

The comment has been noted and discussion on auxiliary engine emissions has been revised (see Draft Final 2016 AQMP Appendix IV-A, page IV-A-129).

Response to Comment 50-30:

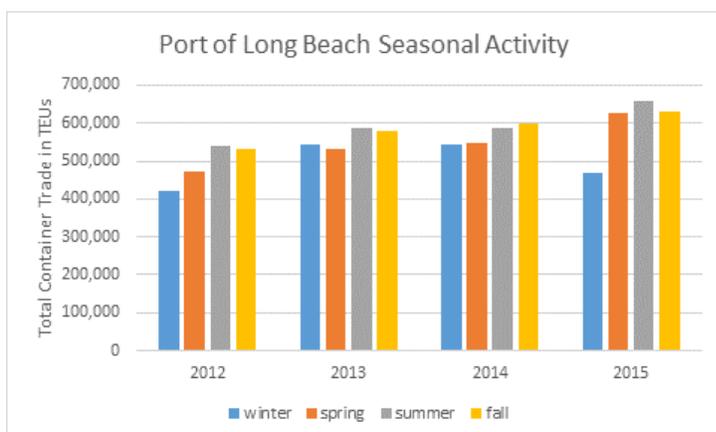
As implementation of MOB-01 moves forward, the most current emissions inventories will be used in developing potential emission reductions from the identified actions. For SIP accounting and reporting purposes, the percent change in emissions will be based on actual emissions reported by the ports and the historic base year (2012) will be used to calculate rate-of-progress.

Response to Comment 50-31:

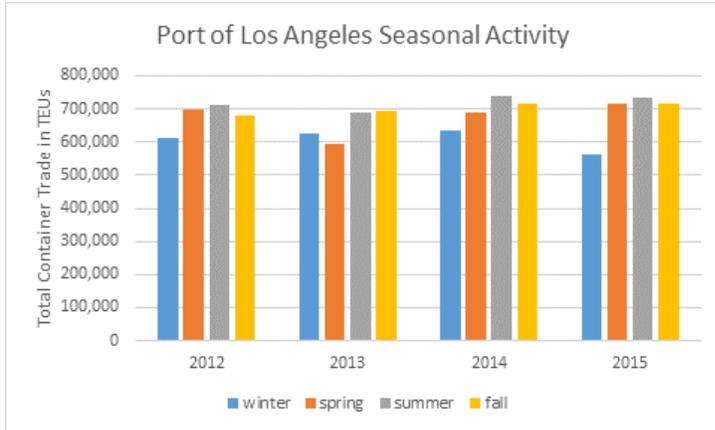
Staff appreciates the efforts the ports are making to incentivize deployment of the cleanest ocean-going vessels entering the ports. The future year estimates of the number of Tier 3 vessels provided by the ports are being considered by CARB in its update to the ocean-going vessel emissions inventory. While it is important to reflect the most accurate emissions inventory, it is also important to propose the development of cleaner emission standards and reflect the potential emission reductions associated with implementation of such standards. Any emission reductions associated with such standards are commitments that CARB has made. If no Tier 4 standards are established by IMO, CARB has committed to achieving the associated emission reductions nevertheless.

Response to Comment 50-32:

As noted in the comment, the monthly PM10 near the coast has relatively low variability throughout the year, with less than 8 µg/m³ between the lowest and highest monthly averages as shown in Figure 2-39. The inland stations are relatively higher from June through October. Also, as noted in the comment, it does appear likely that monthly cargo traffic counts have become more consistent in recent years. The seasonal activity at the Ports of Long Beach and Los Angeles, as illustrated in the plots below using data from the POLB/LA website, generally peaked in the summer season between 2012 and 2015, with the fall months typically second. Each of the ports did have activity peaks in the fall for one of the years shown. Nonetheless, it is likely that lower mixing heights associated with cooling fall temperatures and the increase in offshore Santa Ana wind events in the fall months are likely more significant to the PM10 monthly variability than the differences and activities associated.



(Data Source: Port of Long Beach: http://www.polb.com/economics/stats/teus_archive.asp)



(Data Source: Port of Los Angeles: <https://www.portoflosangeles.org/maritime/stats.asp>)

Comment Letter from RadTech (Comment Letter 51)



August 19, 2016

Mr. Philip Fine
Deputy Executive Officer, SCAQMD
21865 Copley Drive
Diamond Bar, CA 91765

Re: Public Comments on the Draft 2016 Air Quality Management Plan

Dear Mr. Fine:

RadTech is pleased to submit public comments on behalf of our over 800 members, regarding the Draft 2016 Air Quality Management Plan. RadTech is honored to have been selected to serve on the Air Quality Management Plan (AQMP) advisory committee and in that capacity have commented on many of the proposals brought forth by staff. The plan's focus on incentives based approaches fits well with UV/EB/LED technology and can help the district achieve its air quality goals without sacrificing the economy. In addition to reductions in Volatile Organic Compounds (VOCs) that go above and beyond current limits specified in the District's source specific rules, UV/EB/LED technology can produce co-benefits such as reduction in combustion contaminants (PM 2.5, NOx, Greenhouse Gases) that would normally be generated by add-on control devices. Some additional thoughts follow:

Control Strategy and Implementation (Page 4-4)

We request that an analysis of UV/EB/LED technology be included in the plan, similar to that included for Solar Energy Technology. This would go a long way to inform businesses of their compliance options and fit well with the district's goal of increasing public outreach. The District's 2003 plan (Chapter 4, page 4-55) included a detailed discussion of energy curable technology which is missing from the current draft. The specific language follows for quick reference:

"Radiation-Curing Technologies Radiation-curing products are liquids with low viscosity that are 100 percent solids. The main difference between traditional solvent-based products and radiation-curing products is the curing mechanism. Radiation-curing products do not dry in the sense of losing solvents to the atmosphere as is the case with solvent-based products. Instead, when radiation-curing products are exposed to radiation, a polymerization reaction starts which converts the liquid to a hard, tough, cured solid film in a fraction of a second. This process typically results in significantly lower VOC emissions compared to solvent-based products. The most common radiations used to cure the products are ultraviolet light (UV) and electron beam (EB). The UV-curing products need a chemical called photoinitiator, which initiates the polymerization (curing) process when exposed to UV light.

51-1

The EB-cured products do not contain photoinitiators and are cured when the electrons generated with the EB equipment react directly with monomers and polymers in the liquid product. Due to almost instant curing of these products, the concept of drying time is eliminated which allows any post-application operation to commence immediately or in-line. Other advantages include the attainment of very high gloss levels, reduction of VOC emissions and solvent odors, and reduced energy consumption. UV and EB-curing products can be used on virtually all substrates, from metal and wood to glass and plastic. Applications of UV and EB-curing products are numerous and proliferating rapidly. Examples include: paper, furniture, automotive components, no-wax flooring, credit cards, packaging, lottery tickets, golf balls, eye glass lenses, CDs, baseball bats, beer cans and hundred of other items. However, these technologies have registered significant progress toward alleviating previous limitations in technology for field applications. UV applications are also making headway in automotive field repair, and efforts are underway for applying this technology for aerospace and military field uses.”

51-1
Cont

We strongly urge the district to include the above analysis it in the 2016 plan. Additionally, since the 2003 document was authored, LED technology has become more prevalent in our industry. We request that the language be modified to UV/EB/LED.

ECC-01 - Co-Benefit Emission Reductions from GHG Programs, Policies and Incentives [All Pollutants] (Page 4-12)

Add-on controls which are combustion sources that emit Green House Gases (GHGs) and are typically sources of criteria pollutants, UV/EB/LED technology does not generate GHGs. We support the concept of “promoting implementation and development of new technologies” and evaluating them for “reduction of emissions of both GHGs and criteria pollutants.”

51-2

ECC-03 - Additional Enhancements in Building Energy Efficiency and Smart Grid Technology [NOx, VOC] (Page 4-14)

This control measure appears to be limited to incentive programs for existing residences that includes weatherization, upgrading older appliances with highly efficient technologies and renewable energy sources to reduce energy use for water heating, lighting, cooking and other large residential energy sources. UV/EB/LED technology works at ambient temperature and is good for temperature sensitive substrates like paper, wood, and some plastics. The “low bake” concept is aimed to reduce the cure temperatures and yields energy savings. There are now other 100% solids ambient curable technologies but UV/EB/visible cure remains to be the only viable single component, ambient, on demand cure technology today. We urge the district to extend the incentives to commercial buildings where stationary sources may be operating.

51-3

FLX-01 Improved Education and Public Outreach (Page 4-16)

We appreciate the inclusion of “super-compliant” coatings, which would include UV/EB/LED products, in this section.

51-4

FLX-02 Stationary Source VOC Incentives (Page 4-19)

We are supportive of the incentives concept for facilities who utilize equipment which result in cost effective emission reductions that are beyond existing requirements. However, instead of imposing permit conditions, relaxing permitting requirements, in the form of 219 exemptions, would be a better r incentive for facilities to voluntarily convert to lower emitting processes.

51-5

Clean Air Investment and Cleanup Fund (Page 4-66)

RadTech commends the district for considering the creation of a national clean air investment fund for contaminated air. Stationary sources who reduce their emissions above and beyond existing district rule requirements, should be eligible to access funds in order to invest in technologies such as UV/EB/LED.

51-6

Appendix IV-A-29

The district has identified various negative impacts associated with the use of control equipment such as: “the potential to create secondary adverse air quality impacts”increased ammonia emissions” and, since ammonia is a precursor to particulate formation, increased particulate emissions. The district has further found that “in the event of an accidental release of ammonia, sensitive receptors in the vicinity of the release may be exposed to harmful concentrations of ammonia vapor.” These statements further validate the environmental viability of reformulation to UV/EB/LED technology and make a case for the district to encourage the use of said technology. We urge recognition of the technology for the category of “Commercial Natural Gas External Combustion-Other” as conversion to UV/EB processes can eliminate the need for add-on control devices that use natural gas and generate combustion contaminants.

51-7

Appendix IV-A-43

We urge inclusion of UV/EB/LED technology as a strategy that reduces emissions, improves energy efficiency, reduces fuel and creates new job opportunity. It is not clear whether or not emissions from afterburners and similar combustion control devices have been included in the analysis.

51-8

Appendix IV-A-46

RadTech concurs with the district’s statement that “. . .incentivizing the use of much cleaner, less polluting, products and equipment will require additional efforts to broaden the scope of stationary source incentives.” We urge the district to consider Board Member Judy Mitchell’s comment to staff to provide an exemption for UV/EB processes from permitting requirements under Rule 219.

51-9

Appendix IV-A-47

We commend the district for including the provision of incentives for existing businesses to implement zero and near-zero emission technologies and encouraging new businesses that use and/or manufacture near-zero and zero emission technologies to site in the Basin. Users of UV/EB/LED technology should have access to the incentives. 51-10

Appendix IV-A-48

We urge the inclusion of permitting exemptions in the “Permitting and Fee Incentives and Enhancements” section. As it currently stands, this section only mentions the expansion of the certification program but does not mention permit exemptions for equipment that goes above and beyond rule requirements such as UV/EB. We support the “Branding Incentives” and the “Recordkeeping and Reporting Incentives”. 51-11

Appendix IV-A-50

It is unclear whether or not the “Incinerators” category in Table 1, includes emissions from add-on control devices. 51-12

Appendix IV-A-85

UV/EB/LED technology can play a role in the market sectors (Rule 1106, Rule 1124, Rule 1128, Rule 1107) mentioned on this page. The technology can create the “win-win business case” the section contemplates. 51-13

Appendix IV-A-86

Please refer to comment on Control Strategy and Implementation (Page 4-4), above.

Appendix IV-A-99

We support the district’s efforts to improve education and public outreach. To this end, including industry resources on the district’s website (such as a link to the RadTech webpage) would be beneficial to business owners who seek near-zero or zero technologies. 51-14

Appendix IV-A-100

We support outreach programs for consumers to increase awareness of the benefits of purchasing low emitting products and encourage the district to extend the same outreach to business owners who may be looking for compliance options.

Appendix IV-A-103

We agree with incentivizing lower polluting and less toxic alternative processes and materials for industrial modernization. UV/EB/LED processes can help the district achieve this goal.

51-15

Appendix IV-A-104

UV/EB/LED processes should be eligible for any funding provided through the mechanisms outlined in this section.

Appendix IV-A-105

We urge the inclusion of permitting exemptions in the "Permitting and Fee Incentives and Enhancements" section. As it currently stands, this section only mentions the expansion of the certification program but does not mention permit exemptions for equipment that goes above and beyond rule requirements such as UV/EB.

51-16

Appendix IV-A-106

Please refer to comment on Control Strategy and Implementation (Page 4-4), above.

We appreciate the opportunity to work with you and your staff. Please do not hesitate to contact me at 909-240-0866 or via email: rita@radtech.org.

Regards,

Rita M. Loof
Director Regional Environmental Affairs

Responses to Comment Letter from RadTech
(Comment Letter 51)

Response to Comment 51-1:

A description of energy curable technology is now included in Appendix IV A to inform businesses of a compliance option.

Response to Comment 51-2:

Control measure ECC-01 includes the concept of promoting implementation of new technologies that reduce both GHG and criteria pollutant emissions. Incentives, programs, and partnerships will be evaluated for reduction of emissions of both GHGs and criteria pollutants. As facilities seek to reduce GHG emissions by adopting lower-GHG technologies such as UV/EB/LED, the criteria pollutant benefits will be analyzed.

Response to Comment 51-3:

ECC-03 is aimed at implementing efficiency improvements at residential buildings. Combustion sources at residential buildings, including stoves, heaters, fireplaces, etc., would be targeted to reduce NOx emissions. As UV/EB/LED technology is designed for manufacturing applications, it is not appropriate to include these technologies when seeking emission reductions at residential buildings. Process efficiencies for commercial buildings are covered within other control measures.

Response to Comment 51-4:

Your support is acknowledged.

Response to Comment 51-5:

Rule 219 is currently under review to consider further exemptions for low emission UV/EB/LED technologies. However, in some cases, it is necessary to have a permit with associated conditions in order to verify that the operations have low overall emissions. For example, high production UV/EB/LED printing equipment may utilize low-VOC inks but may use such large quantities that overall emissions exceed offset, BACT, BARCT or emission reporting thresholds.

Response to Comment 51-6:

Your support is acknowledged.

Response to Comment 51-7:

Control measure ECC-02 proposes improvements to commercial building efficiency measures to reduce energy use for heating, cooling, lighting, cooking, and other needs. The control measure does not address the use of control equipment used during manufacturing operations. UV/EB/LED technologies are designed for manufacturing applications and are not appropriate to include in this measure. However, if UV/EB/LED technologies are developed that address heating, cooling, lighting, cooking and other building energy needs, they would be available for inclusion as alternatives.

Afterburners and similar combustion related control equipment are included in the emission inventory of the control measure. The measure does not directly quantify a process change, such as replacing a VOC emission source requiring combustion control equipment with a low emission technology like UV/EB/LED that does not require control equipment, as it is difficult to predict where pollution prevention opportunities might occur. Where possible however, the control measure should incentivize process changes that eliminate the need for combustion equipment.

Response to Comment 51-8:

Please see Response to Comment 51-7 with regard to the inclusion of UV/EB/LED technology.

Response to Comment 51-9:

Staff encourages the commenter to participate in the development of the incentive programs to ensure all options are considered particularly with regards to possible future rulemaking and potential exemptions. Please also see Response to Comment 51-5 regarding Rule 219.

Response to Comment 51-10:

Your support is acknowledged.

Response to Comment 51-11:

Your support for incentives is acknowledged but as noted in Response to Comment 51-9, any proposed action regarding access to incentives would take place during program and/or rule development.

Response to Comment 51-12:

The “Incinerators” category in CMB-01, Table 1 – “NO_x Combustion Sources” does not include add-on control devices.

Response to Comment 51-13:

Comment noted.

Response to Comment 51-14:

Your support is acknowledged. Control measure FLX-01 (Appendix IV-A-99 in Draft 2016 AQMP) contains a component to conduct outreach to business owners to help implement projects that have emission benefits and short payback periods. Including industry resources, such as links to super-compliant technology providers, will be part of the outreach efforts.

Response to Comment 51-15:

Super-compliant technologies such as UV/EB/LED may be eligible for incentive funding.

Response to Comment 51-16:

Please see Response to Comment 51-5 and 51-9 regarding exemption for UV/EB processes from permitting requirements.

Comment Letter from Ramboll Environ (Comment Letter 52)

**COMMENTS ON THE DRAFT 2016 AQMP ATTAINMENT
DEMONSTRATION MODELING FOR THE SOUTH COAST AIR BASIN**

August 19, 2016

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INTRODUCTION

This document represents comments from an initial review of the attainment demonstration modeling component of the draft 2016 Air Quality Management Plan (AQMP) for the South Coast Air Basin (SoCAB) released by the South Coast Air Quality Management District (SCAQMD) on June 30, 2016. The draft 2016 AQMP did not include the critical Appendix V that documents the air quality modeling, which severely limited my ability to review the draft AQMP attainment demonstration modeling. The draft 2016 AQMP on the website¹ originally stated that Appendix V would be released by the end of July 2016 with comments due by August 19, 2016. Since then, the website has been updated to state that Appendix V would be released in early August but comments are still due August 19. As of the August 19, 2016 comment deadline, Appendix V has still not been released. After the release of Appendix V, a review period of at least 30 days is needed to allow the scientific community to review and comment on the modeling that is the key technical component of the draft 2016 AQMP.

52-1

Qualifications

I, Ralph E. Morris, am a Managing Principal at the Novato, California office of Ramboll Environ US Corporation (Ramboll Environ). Ramboll Environ is a > 1,000 person environment and health consulting firm that was formed in 1982. I have over 36 years of experience in air quality modeling and in particular with the development and application of advanced photochemical grid models (PGMs) as used in the draft 2016 AQMP ozone and PM_{2.5} attainment demonstration modeling. I have served on, and been an active member of, the SCAQMD's Scientific Technical Modeling Peer Review Modeling Advisory Group (STMPRAG) for over a decade. The last meeting of the STMPRAG was held on March 16, 2016² before the final draft AQMP attainment demonstration modeling was performed. I have performed PGM attainment demonstration modeling for numerous State Implementation Plans (SIPs), such as the current

¹ <http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/Draft2016AQMP>

² http://www.aqmd.gov/home/library/meeting-agendas-minutes/agenda?title=STMPRMod_031616

Denver 2017 ozone SIP and past Denver 2008 ozone SIP³, so I am very familiar with the procedures, guidance and tools needed to conduct a SIP attainment demonstration modeling. I was a member of EPA's first ozone SIP modeling guidance workgroup in 1990 that led to the initial EPA ozone SIP guidance document (EPA, 1991⁴). Although I have been employed by Ramboll Environ for over 20 years, the views expressed in this document are my own and may not represent those of Ramboll Environ or other staff of Ramboll Environ.

Documents Considered

The main documents considered were those in the draft 2016 AQMP released on June 30, 2016 and the Appendix III released at a later date. As noted above, the Appendix V modeling component of the draft 2016 AQMP was not released before the August 19 comment deadline, so I reserve the right to submit additional comments after its release.

On July 8, 2016, I requested the draft 2016 AQMP CMAQ⁵ air quality modeling files that were used in the attainment demonstration modeling. The SCAQMD responded promptly to this request with the transfer of all of the ozone attainment demonstration modeling files by July 29, 2016. However, I am still waiting for the PM_{2.5} attainment demonstration modeling files and have not had sufficient time to analyze the files prior to the August 19, 2016 comment review deadline.

My comments are also relying on information presented by SCAQMD during the development of the draft 2016 AQMP at the STMPRAG and AQMP Advisory Group meetings and my involvement in previous AQMPs, including the 2012 and 2007 AQMPs and dating back to the 1989 AQMP. I am also relying on my over 30 years of experience in air quality modeling within the U.S. and throughout the world and experience in conducting attainment demonstration SIP modeling.

More recently, I have been involved in a study for the Truck and Engine Manufacturers Association (EMA) that, among other things, assessed the ability of the 2012 AQMP 2008 CMAQ modeling database to reproduce the observed ozone trends over time in the SoCAB. This on-going work will also perform a similar analysis using the draft 2016 AQMP 2012 CMAQ modeling database. However, since that database was only received approximately two weeks before the August 19, 2016 comment period end date, those results are not included in my comments. Although I am relying on work we performed for EMA for some of my comments, my comments do not necessarily represent the opinions of EMA.

³ <http://www.colorado.gov/airquality/documents/deno308/>

⁴ <https://www3.epa.gov/ttn/scram/guidance/guide/uamreg.pdf>

⁵ CMAQ stands for Community Multiscale Air Quality (CMAQ) modeling system that is a Photochemical Grid Model (PGM) developed by U.S. EPA and distributed through the CMAS Center (<https://www.cmascenter.org/>).

52-1
Con't

COMMENTS ON THE DRAFT 2016 AQMP ATTAINMENT DEMONSTRATION MODELING

The SCAQMD should be commended on their draft 2016 AQMP modeling efforts. This is a large body of work applying complex and complicated models to arguably the most difficult air quality problem in the U.S. As with any air quality modeling effort, there are uncertainties and areas for improvements. Hopefully my comments will help improve the modeling results.

52-2

Below I present two over-arching comments on the draft AQMP attainment demonstration modeling followed by specific comments on Chapter 5 “Future Air Quality” of the draft 2016 AQMP.

Over-Arching Comments

Draft 2016 AQMP Documentation is Insufficient to Provide Informed Review and Comments on the Attainment Demonstration Modeling: As noted above, the draft 2016 AQMP documentation failed to include Appendix V “Modeling and Attainment Demonstrations” that was still not available by the August 19, 2016 comment deadline. At the end of July, the SCAQMD also provided the ozone modeling attainment demonstration database. But there is insufficient documentation and time to provide informed comments on the modeling by the August 19, 2016 comment due date. I am requesting an extension of the comment period until after the release of the modeling documentation and receipt of data files and request that the SCAQMD hold a meeting of the STMPRAG where the details of the modeling can be discussed and a more thorough peer-review conducted.

52-3

AQMP Modeling Databases Fail to Reproduce Observed Ozone Trends Resulting in Incorrect Future Year Ozone Projections and Assessment of the SoCAB’s Emissions Carrying Capacity for Ozone Attainment: The CMAQ modeling in the 2012 AQMP failed to accurately reproduce the observed ozone reductions in the SoCAB resulting in higher future year ozone levels than observed and therefore a higher amount of NOx emission reduction needed to attain the ozone NAAQS. This issue became very obvious in 2015 due to the following facts:

52-4

- The 2012 AQMP modeling using a 2008 CMAQ modeling database projected that the 5-year (5Y) ozone Design Value (5Y-DV⁶) at Crestline would be reduced from 116 ppb in 2008 to 107 ppb in 2023 without any additional controls for an ozone reduction rate of 0.60 ppb/year.

⁶ An Ozone Design Value (DV) is defined as the three-year average of the fourth highest Maximum Daily Average 8-hour (MDA8) ozone concentration and is compared to the ozone NAAQS to determine attainment/nonattainment. We also refer to the ozone DV as a 3-year DV (3Y-DV). To make future year ozone projections a 5-year DV (5Y-DV) is used that is an average of three years of ozone DVs centered on the year in question (e.g., for the 2012 year, DV₂₀₁₀₋₂₀₁₂, DV₂₀₁₁₋₂₀₁₃ and DV₂₀₁₂₋₂₀₁₄).

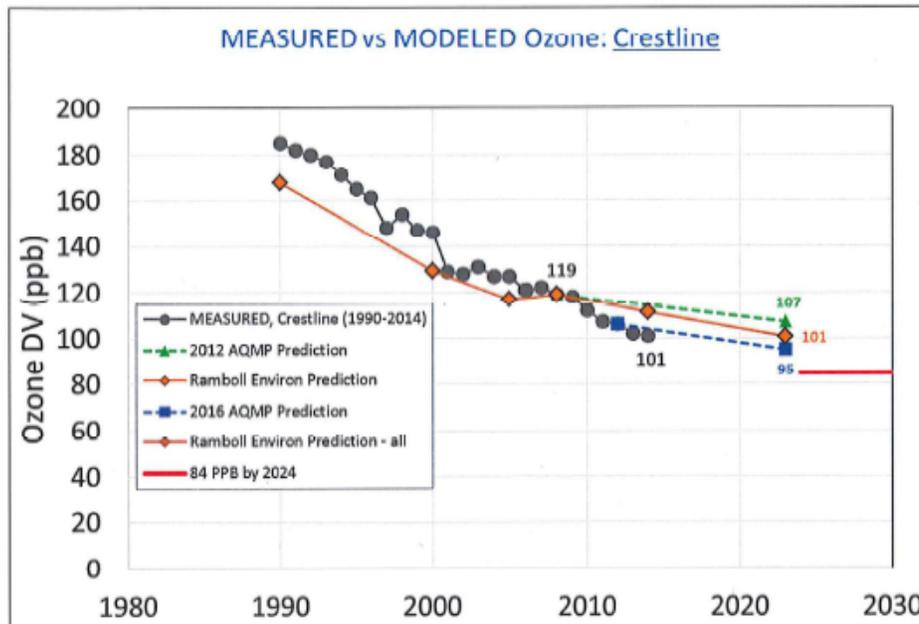


Figure 1. Comparison of observed ozone (black), results of dynamic evaluation of the 2012 AQMP 2008 CMAQ database (orange), 2012 AQMP projected ozone (green) and draft 2016 AQMP projected ozone (blue) rate of change (ppb/year).

52-4
Con't

Tables 1 and 2 compare the observed and CMAQ predicted ozone DV concentrations and rate of ozone reduction at the Crestline, Redlands and Fontana monitoring sites for the 2012 AQMP and draft 2016 AQMP, respectively. These comparisons use a simple arithmetic trend approach using the differences in ozone between the first and last year of a period to clearly and simply illustrate the differences in the observed and AQMP modeled ozone trends. A better approach would be to use regression equations, as used in the draft 2016 AQMP to derive their observed 2.3 ppb/year reduction (pages 5-4) that compare well with the simple arithmetic observed ozone trends in Table 1 below (2.14-2.43 ppb/year). Comments on the draft 2016 AQMP submitted by EMA use the regression trend approach and come to the same conclusions as shown in Tables 1 and 2 that the trend in AQMP modeled ozone reductions is much slower than observed.

The three monitoring sites in Tables 1 and 2 were selected because they have the highest current year (2012) and projected 2023 future year ozone DVs in the SoCAB. For the 2012

AQMP, the observed rate of ozone reduction (2.14 to 2.43 ppb/year) is 4 to 10 times greater than the modeled rate (0.20 to 0.60 ppb/year, Table 1). The observed rate of ozone reduction is also greater than the modeled rate from the draft 2016 AQMP. However, for the draft 2016 AQMP comparisons, there is only a three year overlap between the observed (2012-2015) and modeled (2012-2023) ozone trend period so the observed trend is more uncertain than in the 2012 AQMP comparison. We will have longer-term comparisons of the observed and modeled 2016 AQMP ozone trend comparisons when the dynamic evaluation of the draft 2016 AQMP 2012 CMAQ database is completed.

Table 1. Comparison of observed and predicted rate of ozone reductions for the 2012 AQMP 2008 CMAQ modeling database.

Monitoring Site	Observed Ozone			2012 AQMP 2008 CMAQ Ozone		
	2008 3Y-DV (ppb)	2015 3Y-DV (ppb)	Reduction Rate (ppb/yr)	Reduction Rate (ppb/yr)	2008 5Y-DV (ppb)	2023 5Y-DV (ppb)
Crestline	119.0	102.0	2.43	0.60	116.0	107.0
Redlands	116.0	101.0	2.14	0.40	109.0	103.0
Fontana	112.0	97.0	2.14	0.20	107.0	104.0

52-4
Con't

Table 2. Comparison of observed and predicted rate of ozone reductions for the draft 2016 AQMP 2012 CMAQ modeling database.

Monitoring Site	Observed Ozone			Draft 2016 AQMP 2012 CMAQ Ozone		
	2012 3Y-DV (ppb)	2015 3Y-DV (ppb)	Reduction Rate (ppb/yr)	Reduction Rate (ppb/yr)	2012 5Y-DV (ppb)	2023 5Y-DV (ppb)
Crestline	106.0	102.0	1.33	0.73	103.0	95.0
Redlands	105.0	101.0	1.33	0.79	104.7	96.0
Fontana	101.0	97.0	1.33	0.45	101.0	96.0

Specific Comments

The following are specific comments on Chapter 5 of the draft 2016 AQMP (note that other portions of the draft AQMP also use the same information as in Chapter 5).

Page 5-2: Both WRF v3.6 and WRF v3.6.1 are stated as having been used, which can't both be correct. The WRF model performance evaluation should also be included as part of the draft AQMP. Limited results have been presented at the STMPRAG meetings, but given the importance of the meteorological inputs, the full evaluation of WRF meteorological model should be made available.

52-5

Page 5-2: The document states that CMAQ v5.0.2 was used in the draft 2016 AQMP. However, we tried to run EPA's CMAQ v5.0.2⁹ using the draft 2016 AQMP 2012 CMAQ database and it could not run. It appears the SCAQMD has modified the CMAQ v5.0.2 so that it is no longer the EPA version. The draft 2016 AQMP should state that a modified version of CMAQ v5.0.2 was used, what the modifications were, and how those modifications affect the modeling results.

52-6

Page 5-3: Draft AQMP states that "Gridded daily biogenic VOC emissions were provided by CARB using the MEGAN biogenic emissions model." However, MEGAN also produces biogenic NOx emissions. We confirmed that there are NOx emissions in the biogenic emissions input file so assume that those are from MEGAN. This is an issue because some of the past AQMPs have neglected biogenic NOx emissions.

52-7

Page 5-3: Draft AQMP states that "Detailed information on the modeling approach, data retrieval, model development and interpretation of results is presented in Appendix V." No Appendix V was included with the draft 2016 AQMP.

52-8

Page 5-3: Draft AQMP states that "U.S. EPA guidance has recommended the use of relative reduction factors (RRFs)" for projecting future year ozone Design Values implying that EPA's guidance was followed. However, this statement is ambiguous as EPA released guidance in 2007 (EPA, 2007) and draft guidance in December 2014 (EPA, 2014), which has not been finalized. Technically the 2007 guidance is the current guidance, although most groups are using the draft 2014 guidance. This brings up several questions/comments:

52-9

1. Which EPA guidance is the SCAQMD following in their draft 2016 AQMP (2007 or 2014)?
2. As it is, the SCAQMD has added an extra criterion in their future year ozone projection procedures that is not included in either of the EPA guidance documents so they are not exactly following EPA guidance. This extra requirement is that days used in calculating the model-derived RRFs must satisfy a model performance evaluation (MPE) criteria

⁹ EPA's official version of CMAQ v5.0.2 as downloaded from the CMAS Center was used (<https://www.cmascenter.org/>).

that the modeled and observed MDA8 ozone on the day is within 20% of each other. Although I don't object to this MPE requirement, the draft AQMP should discuss the implications of adding this extra MPE requirement beyond EPA guidance. In general, the CMAQ model tends to be more responsive (i.e., higher ozone reductions) under higher modeled ozone concentrations and by adding this extra MPE requirement the RRFs will be based on lower modeled ozone days, which could make the modeled ozone concentration reductions less responsive and predict higher future year ozone DVs than if EPA guidance was followed exactly.

52-9
Con't

Pages 5-3 to 5-4: The draft AQMP notes that the observed maximum ozone DV in the SoCAB has been reduced at a rate of 2.3 ppb/year over the last 14-year period (2001-2014), with the current maximum 2014 ozone DV of 102 ppb being 28% above the 1997 8-hour ozone NAAQS (0.08 ppm) and 36% above the 2008 8-hour ozone NAAQS (0.075 ppm). Two comments on these statements are as follows:

1. Attainment of the 1997 8-hour ozone NAAQS occurs when the maximum ozone DV is below 85 ppb, so 84.9 ppb would attain the NAAQS. Thus, 102 ppb is 20% not 28% above the 1997 NAAQS. Similarly, attainment of the 2008 ozone NAAQS occurs when the maximum ozone DV is below 76 ppb, so 75.9 ppb is attainment, and 102 ppb is 34% not 36% above the 2008 NAAQS.
2. More importantly, the draft 2016 AQMP makes no comparisons between the 2.3 ppb/year rate of reduction of the observed ozone DV and the AQMP's CMAQ estimated 0.79 ppb/year rate of reduction out to 2023 and 0.62 ppb/year rate of reduction out to 2031. The fact that the draft 2016 AQMP understates the observed rate of ozone reduction by approximately a factor of 3 raises serious questions about the accuracy and reliability of the draft 2016 AQMP CMAQ-derived future year ozone projections and NOx carrying capacity. Those questions need to be studied and explained.

52-10

Pages 5-6 and 5-7: In Table 5-1 the number of days that the 75 ppb is exceeded on weekend versus weekdays is presented and explained as "*A strong 'weekend effect', typically experienced in urban areas, results from reduced NOx emissions on weekends leading to higher ozone and consequently more weekend days exceeding the standard.*" However, no explanation is provided for what this means and why this is important to the AQMP. The observed "weekend effect" is a clear indication that the SoCAB is still currently on the VOC-limited side of the ridgeline where NOx reductions will increase ozone concentrations. As the draft 2016 AQMP is following a NOx emissions control strategy, this raises several questions:

52-11

1. What are the consequences of the NOx control in the near-term and on the path toward attainment? What if the control plan falls short of its goal (as they have in the past, for

example the 2010 1-hour ozone NAAQS attainment date); will ozone levels end up being worse than they are? More explanation on what these results mean is warranted.

2. Is the model able to reproduce the observed “weekend effect” in the CMAQ 2012 base case simulation? This is an important diagnostic evaluation component and gives an indication of whether the CMAQ 2012 modeling database is capturing some of the atmospheric chemistry features in the SoCAB.

52-11
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Page 5-9: Table 5-2 in the draft 2016 AQMP presents the projected 2023 and 2031 ozone DVFs for the base and control scenario (i.e., the attainment demonstration modeling). The 2023 ozone DV results under the 2023 base and control case for the three highest ozone monitors in the SoCAB are reproduced in Table 3, along with the efficiency of ozone DV reductions in 2023 for the base and control scenario in tons per day NOx emissions reduced over ppb ozone reduced (TPD/ppb). The 2023 ozone DVs for the control scenario at these three sites are 79, 82 and 80 ppb. However, attainment of the 1997 0.08 ppm ozone NAAQS just requires that all ozone DVs be below 85 ppb, so the 2023 control plan is over-controlling NOx emissions to achieve a 2023 ozone DV level (82 ppb) that is lower than it needs to be (84.9 ppb). The last column in Table 1 shows what the ozone attainment NOx carrying capacity would be without this over-control, which increases the 2023 NOx carrying capacity from 150 TPD to 174 TPD. That is, the draft 2016 AQMP estimates that in 2023 115 TPD of NOx emissions are needed to attain the 1997 ozone NAAQS at all monitors. This calculation suggests that the necessary NOx controls for attainment can be reduced by ~20% (91 TPD reductions) and still demonstrate ozone attainment. The costs of the NOx controls are quite high, so the SCAQMD should pursue the scenario of reducing NOx emissions to the level needed to demonstrate ozone attainment without over-controlling.

52-12

In addition, we ran EPA’s latest Modeled Attainment Test Software (MATS¹⁰) projection tool on the draft AQMP 2012 base case and the 2023 control case CMAQ output files provided by the SCAQMD and obtained projected future year 2023 DVs at all monitoring sites. We used the 7x7¹¹ approach as recommended in EPA’s current modeling guidance (EPA, 2007). The projected 2023 ozone DV at Crestline, Fontana and Redlands (the three highest ozone sites) using the MATS 7x7 approach are in the 76-77 ppb range, which is 5 ppb lower than the maximum 82 ppb 2023 DV from the draft 2016 AQMP. This suggests that the 2023 ozone attainment could be demonstrated using an even higher 2023 NOx carrying capacity than the ~174 TPD discussed above and in Table 3 if the ozone projection approach in EPA’s current modeling guidance is used.

¹⁰ https://www3.epa.gov/ttn/scram/modelingapps_mats.htm

¹¹ MATS uses the maximum modeled MDA8 ozone concentrations in an array of grid cells centered on the ozone monitoring site. EPA’s current guidance (EPA, 2007) recommends using a 7x7 array of 4 km grid cells, while EPA’s draft guidance (EPA, 2014) recommends using a 3x3 array of grid cells.

Table 3. Observed current year (DVC) and 2023 projected future year (DVF) ozone DVs from the draft 2016 AQMP at three sites for the 2023 base (264.84 TPD NOx emissions) and 2023 control (150 TPD NOx emissions) scenarios with ozone reduction efficiency (TPD/ppb) and the revised ozone attainment carry capacity to demonstrate attainment of the 0.08 ppm 1997 ozone NAAQS.

Site Name	Site ID	Observed 2012 Ozone DVC (ppb)	2016 AQMP 2023 Base DVF (ppb)	2016 AQMP 2023 Control DVF (ppb)	Ozone Reduction Efficiency (TPD per ppb)	Revised 2023 NOx Carrying Capacity (TPD)
Crestline	60710005	103.0	95.0	79.0	7.178	192.3
Fontana	60712002	101.0	96.0	82.0	8.203	173.8
Redlands	60714003	104.7	96.0	80.0	7.178	185.2

52-12
Con't

Page 5-10: The draft 2016 AQMP states *“Appendix V also provides base year model performance statistics and grid-level CMAQ predictions for the base and future milestone years as well as weight of evidence discussion to support the modeling attainment demonstration.”* Although some interim model performance evaluation (MPE) results have been presented at STMPRAG meetings, they were not final and incomplete. The draft 2016 AQMP was released without Appendix V so we have very little to no information on how well the CMAQ 2012 base case reproduced the observed ozone in 2012, which is the first step in the MPE process (i.e., the operational evaluation).

52-13

Page 5-19: The PM_{2.5} attainment demonstration modeling discussion starts on page 5-19 of Chapter 5 of the draft 2016 AQMP. Again, details on the PM_{2.5} attainment demonstration modeling are left to Appendix V, which is not yet available. Furthermore, when we requested the draft 2016 AQMP CMAQ modeling databases, complete inputs and outputs were only provided for the May-Sep ozone season so we cannot even try to analyze the PM_{2.5} attainment demonstration modeling. Additional time should be provided to comment on the modeled attainment demonstration after the release of Appendix V and transfer of the PM_{2.5} modeling database.

52-14

Page 5-28: This section discusses the potential ramifications of attaining the Oct 2015 0.070 ppm ozone NAAQS with an anticipated 2037 attainment date, 21 years from now. Over the last three AQMPs (2007, 2012 and 2023), the 2023 baseline NOx emissions have changed by almost a factor of two: 506, 319 and 263 TPD NOx, respectively. Given these uncertainties from past AQMPs in making NOx emissions projections 7-16 years in the future, making them 21 years in

52-15

the future is even more uncertain and such uncertainties and caveats need to be discussed in this section.

52-15
Con't

RECOMMENDED NEXT STEPS

The dynamic model performance evaluation of the draft 2016 AQMP 2012 CMAQ modeling database and modeled/measured ambient concentration and ratio analysis with comparison with emissions funded by the EMA is currently underway. The intent is to collaborate and share the results with the SCAQMD and others when they are available. When Appendix V of the draft 2016 AMQP is released, the scientific community should be allowed to review it and provide comments on the draft 2016 AQMP attainment demonstration modeling.

After the release of Appendix V and after the receipt of comments on the draft 2016 AQMP attainment demonstration modeling, we recommend that the SCAQMD should hold a STMPRAG meeting where the draft 2016 AQMP modeling, dynamic evaluation results, and comments can be discussed by the peer-review group in an open forum.

52-16

CLOSING

Thank you for the opportunity to provide comments on the draft 2016 AQMP modeling. The amount of work and effort put into the draft 2016 AQMP attainment demonstration modeling is quite impressive. Please feel free to contact me if you have any questions.



Ralph E. Morris
Managing Principal
Ramboll Environ
rmorris@ramboll.com

Responses to Comment Letter from Ramboll Environ
(Comment Letter 52)

Response to Comment 52-1:

Please see Response to Comments 38-1 with regard to the timing of the release of the Plan, appendices, and various related documents, and the ability to review and comment on those documents with appropriate time. Specifically, Appendix V and associated modeling database were released to public in September 2016 and comments were due in November, providing more than 45 days for public review.

Response to Comment 52-2:

Comment noted.

Response to Comment 52-3:

SCAQMD hosted a Science Technology Modeling Peer Review committee (STMPR) meeting on Oct 26, 2016 to discuss the revised attainment scenarios and the approaches that Ramboll-Environ/EMA suggest. The presentations and minutes describing the discussions among the committee members and public are available at [http://www.aqmd.gov/home/library/meeting-agendas-minutes/agenda?title=STMPR\(Mod\)_102616](http://www.aqmd.gov/home/library/meeting-agendas-minutes/agenda?title=STMPR(Mod)_102616).

Response to Comment 52-4:

Photochemical reactions involved in ozone formation are complex and ozone levels exhibit a non-linear response to ozone precursor emissions. Ozone isopleths presented in the AQMP and VOC white paper present the complexity and non-linear nature clearly. Therefore, the improvement of ambient ozone concentration is not expected to follow a linear trend with time, as presented in the comment letter. For example, if the high ozone concentrations measured in 2016 are included in the graph presented in the comment letter, the rate of ozone improvement over time agrees reasonably well with the model prediction. More importantly, staff were unable to reproduce the measurement data presented in Figure 1. The design values in the figure did not match with U.S. EPA Air Quality System (AQS) data.

Secondly, the modeling attainment demonstration was conducted based on state-of-the art numerical models and U.S. EPA's newest guidance. The new RRF approach is more responsive to emission reductions than the methodology used in the 2012 AQMP. Namely, the 2016 AQMP is able to demonstrate attainment with less NOx emission reduction compared to the reductions assumed in the 2012 AQMP.

Thirdly, the dynamic evaluation needs to be performed cautiously since spatial and temporal allocations as well as speciation and reactivity change over time. The dynamic evaluation conducted by Ramboll-Environ did not include changes in spatial and temporal distribution of emissions that occurred over the years, therefore cannot be used to draw definitive conclusion on model performance.

In all, linear regression cannot be used to evaluate ozone trend or ozone prediction performance, given the non-linearity and complexity of ozone chemistry, therefore a comprehensive numerical modeling approach is used in the AQMP and the state-of-art modeling technique and U.S. EPA recommendation are employed in the AQMP analysis.

Response to Comment 52-5:

It is WRF v3.6.1. The full WRF performance evaluation is provided in Appendix V.

Response to Comment 52-6:

The CMAQ version used for 2016 AQMP included a modification in the subroutine “rdbcon.F”, which reads lateral boundary values from the boundary conditions file. The original “rdbcon.F” repeatedly accesses boundary files at every chemical sync step, even though the boundary values stay constant during an hour window. The updated version reads the boundary values only once in every hour, which is the frequency interval of both the MCIP meteorological input file and the boundary conditions file. This modification reduces CPU time substantially by decreasing the input read time, while results do not change because the boundary values read by CMAQ are the same. The update was reported to Community Modeling and Analysis System (CMAS) center who is in charge of CMAQ update and maintenance.

An additional modification was included in the AERO_DATA.F subroutine to by-pass the reading of PH2O emissions. Emissions of PH2O is not included in the AQMP inventory. The default AERO6 subroutine in CMAQ requires PH2O emission, and if these species are not present in the emission files, CMAQ does not run. This subroutine was modified so that these species are no longer required to continue with the simulation.

Response to Comment 52-7:

The biogenic emissions used for 2016 AQMP contains biogenic NOx emissions.

Response to Comment 52-8:

Please see Response to Comment 52-1 regarding Appendix V.

Response to Comment 52-9:

The 2014 guidance, which the 2016 AQMP was based on, recommends use of the 20 percent performance criteria (U.S. EPA 2014, p.102). In addition, most of high ozone days are included in the top 10 RRF calculation days, therefore no significant bias is expected even with the MPE condition.

Response to Comment 52-10-1:

Comment noted and reflected in the draft final.

Response to Comment 52-10-2:

Ozone trend cannot be fit into a linear line due to its complexity and non-linear nature of photochemistry.

One should use great caution in drawing a straight line to project ozone trends, since the ozone progress slope will vary depending on the length and the timing of the period that the trend is retrieved from. For example, if ozone ambient data measured in 2016 is included in the trend analysis, the AQMP projected ozone progress agrees well with the measured progress. The linear regression is an overly simplified approach that is not recommended by U.S. EPA or science community.

In addition, staff were unable to reproduce the numbers provided in the table. U.S. EPA recommends to use 5-year weighted average design values, but the ozone concentrations in the table do not agree with U.S. EPA recommended 5-year design value.

Response to Comment 52-11:

CMAQ shows slightly better performance for weekends, while the model has reasonably good performance for both weekdays and weekends.

Ozone concentration goes up with reduced NO_x emission under the presence of excessive NO_x. The weekend effect – higher ozone during weekends when NO_x emissions are lower than in weekdays – is still obvious in the Basin. This indicates a NO_x reduction disbenefit, a condition that ozone concentrations increase as a result of reductions of NO_x emissions. The progress in reducing ambient ozone concentrations may be slow until NO_x levels become sufficiently low to overcome the NO_x disbenefit. During the course to attainment, VOC reductions resulted from concurrent reduction from NO_x strategy and limited strategic VOC strategies FUG-01 and CTS-01 are expected to minimize the inadvertent temporary ozone increase.

Response to Comment 52-12:

The attainment scenarios and NO_x reductions required to meet the standards have been revised.

The District followed the 2014 U.S. EPA guidance to show attainment. The methodology in the 2014 guidance allows up to ~20 TPD more remaining NO_x, depending on station, than the 1997 guidance.

Response to Comments 52-13:

Please see Response to Comment 52-8 regarding Appendix V of the 2016 AQMP.

Response to Comment 52-14:

Appendix V was released in September 2016 and its associate modeling input and output for the entire 2012 modeling year including PM_{2.5} were made available in August 2016.

Response to Comment 52-15:

The baseline emissions inventory changes over time. This reflects updated databases, improved methodology as well as regulations implemented after the release of prior AQMPs (in this case 2012 AQMP). The STMPR meeting was held on October 26th, per the request from Ramboll-Environ. Details of the modeling approaches and performance evaluation were discussed in the meeting (http://www.aqmd.gov/home/library/meeting-agendas-minutes/agenda?title=STMPR%28Mod%29_102616) and described in Appendix V.

Response to Comment 52-16:

Please see Response to Comment 52-1. Per the request, a STMPR was held on October 26, 2016.

Comment Letter from Riverside County Transportation Commission (Comment Letter 53)



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(951) 787-7141 • Fax (951) 787-7920 • www.rctc.org

August 19, 2016

Dr. Phillip Fine
Deputy Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Subject: Riverside County Transportation Commission – Comments on Draft 2016 AQMP

Dear Dr. Fine:

The Riverside County Transportation Commission (Commission) appreciates the opportunity to comment on the Draft 2016 Air Quality Management Plan (AQMP). The Commission is one of six county transportation commissions in the Southern California Association of Governments (SCAG) region, and administers a half-cent sales tax for transportation improvements and programs in addition to allocating federal and state transportation funds. Our program of projects consists of improvements on the multimodal system, which are consistent with the SCAG Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). Riverside County is one of the fastest growing counties in the country and improvements needed to support an integrated transportation system that can accommodate a large population and employment growth are critical to the health and well-being of Riverside County residents. Therefore, the 2016 AQMP should reflect the various needs of this diverse region in relation to jobs/housing balance and disadvantaged communities. The 2016 AQMP should also avoid a one-size fits all approach and provide as much flexibility in meeting air quality goals that are fair and equitable to all sectors.

53-1

The California Air Resources Board established the Advanced Clean Transit Regulation requiring heavy-duty vehicles to meet the 2010 heavy-duty engine emission standard. Given the high costs of electric and hydrogen fuel-cell buses this requirement will put a heavy burden on transit operators that have fully converted its fleets to Compressed Natural Gas (CNG). Efforts are underway to move towards hydrogen fuel-cell fleet conversion, but the high costs will prevent a full fleet conversion by 2023. We hope funding and/or incentives are made available to convert fleets; however, given the present limitation of funding, fleet turnover will be extremely difficult to achieve by 2023. Therefore, we suggest the Advanced Clean Transit regulation can be performance based and technology neutral.

53-2

In regards to EGM-01 – Emissions Reductions from New Development and Redevelopment, It is unclear how this measure will be implemented. There seems to be some overlap and conflict with local land use authority. Local agencies in the SCAG region implement, and are consistent with, land use strategies included in the 2016 RTP/SCS. In addition, CEQA guidelines are currently being updated to reflect SB 743 requirements, which may deem this measure duplicative or unnecessary. We recommend removal of this measure or referencing the upcoming CEQA guidance on implementing SB 743.

53-3

Incentive strategies are necessary to achieve air quality goals and objectives. However, these incentives are not well defined and the funding needed to implement the incentive strategies should be clarified as "new" funding. Current funding is scarce and at its limits, therefore, new funding must be identified to reach the \$14 billion identified for implementing the incentive strategies. New funding should be sought from the federal government, or current programs that the SCAQMD administers could also be reviewed for efficiencies and possible redirection towards incentive strategies.

53-4

Dr. Philip Fine
Page 2
August 19, 2016

Any new fees or increases to fees should be fully vetted by the public before adopting and enacting such increases to ensure public/private agencies and the general public are not economically burdened or disadvantaged. 53-5

We agree with the objective to develop a strategy with fair-share emission reductions at the federal, state, and local levels. Participation at the federal level in terms of reducing emissions from federal sources has not been exercised leaving the entire region disadvantaged with the difficult task of reducing emissions from sources it has no control over. Participation and support at the federal level is critical in helping the region attain its air quality goals especially with Southern California being the major gateway for commerce and logistics warehousing for the entire country. 53-6

There are many TBD measures identified, which is confusing. We recommend clarifying the inclusion of 1BU measures, explaining purpose, and separating them from the rest of the measures. 53-7

Thank you for allowing us the opportunity to comment. Please contact me at (951) 787-7141 if you have any questions.

Sincerely,


Shirley Medina
Planning and Programming Director

Responses to Comment Letter from Riverside County Transportation Commission
(Comment Letter 53)

Response to Comment 53-1:

Staff appreciates the support for flexibility and recognizes that the job/housing needs vary from region to region. Much of the underlying demographic assumptions are provided by SCAG as reflected in the 2016 RTP/SCS.

Response to Comment 53-2:

Your comments will be forward to CARB. SCAQMD staff believes that funding incentives will be needed to assist transit fleets to convert over to near-zero and zero-emission bus technologies. Funding is already available to transit agencies to help fund natural gas engine repowers to ultra-low NOx engines.

Response to Comment 53-3:

Under state law, the SCAQMD is required to assess rules and regulations adopted by other air agencies to ensure that all feasible measures are provided in the AQMP. As such, staff will be taking comments on whether adoption of a rule similar to San Joaquin Rule 9510, indirect source review, which seeks to achieve emissions reductions from the construction of and use of development projects through design features and on-site measures, is appropriate for the South Coast Air Basin or whether there are other actions/mechanisms to address potential emissions associated with new or redevelopment projects. The District may not dictate what land use can occur in what area but it may impose additional requirements on a source to ensure attainment to air quality standards.

During the public rulemaking process, SCAQMD staff will evaluate whether the measure is a duplicative of the SB 743 requirements.

Response to Comment 53-4:

A draft Financial Incentive Funding Action Plan is being prepared as a companion document to the 2016 AQMP. The plan will provide an analysis of potential funding opportunities and proposed actions to be taken to secure the funding identified in the AQMP. The Financial Incentive Funding Action Plan will also provide funding levels from existing programs.

Given the significant amount of funding identified, there is a need to not only seek funding from the federal government, but also at the state and local levels.

Response to Comment 53-5:

Staff agrees that any new potential funding opportunities should be discussed in a public process.

Response to Comment 53-6:

Staff agrees that participation and support at the federal level is critical in attaining the standards. CARB's SIP Strategy includes NOx and VOC reductions from federal sources that were included in the modeling and are assisting in meeting the federal air quality standards.

Response to Comment 53-7:

Please see Response to Comment 38-5 regarding the proposed SCAQMD mobile source measures. Please see Response to Comment 7-5 regarding TBD measures.

**Comment Letter from Southern California Alliance of Publicly Owned Treatment Works
(Comment Letter 54)**



August 18, 2016

Mr. Wayne Nastri, Acting Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765

Dear Mr. Nastri:

Re: Comments on the Draft 2016 Air Quality Management Plan

The Southern California Alliance of Publicly Owned Treatment Works (SCAP) appreciates this opportunity to provide comments on the Draft 2016 Air Quality Management Plan (Draft AQMP). SCAP represents 83 public agencies that provide essential water supply and wastewater treatment to nearly 19 million people in Los Angeles, Orange, San Diego, Santa Barbara, Riverside, San Bernardino and Ventura counties. SCAP's wastewater members provide environmentally sound, cost-effective management of more than two billion gallons of wastewater each day and, in the process, convert wastes into resources such as recycled water and biogas.

54-1

This transmittal is a follow-up to SCAP's June 2, 2016 letter regarding the Preliminary Draft of SCAQMD 2016 AQMP Stationary Source Measures. Our members remain concerned that some of the proposed control measures could negatively impact the beneficial use of biogas produced from municipal wastewater treatment plants and landfills. We would greatly appreciate modifications to the Draft AQMP to address our concerns pertaining to biogas as discussed below.

As stationary sources in the South Coast Air Basin, our members appreciate the challenge posed by this AQMP. SCAQMD is required to determine how to achieve clean air without the ability to control mobile or federal sources, which constitute the vast majority of the emissions to be controlled. SCAP objects to the proposed "fair share" concept where SCAQMD, CARB and EPA would each reduce emission sources under their control by 50 percent. We believe that stationary sources are already well-controlled and achieving our "fair share" is not feasible without a significant infusion of incentive funding. In the event that funding cannot be guaranteed, SCAP requests that CARB and EPA be assigned a greater share of the reductions required to achieve attainment.

54-2

The following outlines our specific comments on the draft stationary source control measures contained in Appendix IV-A:



CMB-01 Transition to Zero and Near-Zero Emission Technologies for Stationary Sources:

This draft control measure seeks to replace traditional combustion sources with zero and near-zero emission technologies including electrification or fuel cells. The background section for this control measure continues to emphasize that biogas from wastewater treatment plants and landfills can be processed and cleaned for the use in fuel cells or transportation fuels. While our SCAP membership embraces these goals, we would again like to respectfully remind staff that biogas cleanup is not usually cost-effective and fuel cells have consistently failed prematurely due to stack failures, which then requires flaring in order to continue providing necessary management of the biogas. At minimum, to provide a realistic characterization, these challenges should be discussed in the AQMP. Clearly, without substantial funding incentives and performance guarantees, our members will be unable to justify biogas fuel cell or transportation fuel projects.

54-3

Table 4 provides a listing of incentive effectiveness by category, where wastewater treatment plants and landfills are identified. While this table was developed to provide “...an estimate based on the specific equipment and facilities identified”, no supporting calculations or assumptions are included. We request that the methodology used to identify these units and quantify the required monetary incentive be provided for review and comment.

While we seek SCAQMD’s support in incentivizing zero and near-zero biogas technologies, we do not believe these biogas technologies are truly commercially available, reliable or cost-effective yet. Due to these inherent challenges, we again request that biogas not be specifically included in this control measure.

CMB-03 Emission Reductions from Non-Refinery Flares:

While we appreciate the acknowledgement that flares are needed for emergency or backup capacity, we are concerned that our previous comments regarding the wastewater sector inventory were not addressed. Our comments outlined that SCAQMD staff provided a detailed summer planning inventory that clarified that the wastewater sector contributes only 0.01 tons per day of NOx. Considering wastewater flares are an insignificant source of NOx and they are normally used for emergency or backup purposes, SCAP requested that the wastewater sector be excluded from this control measure. Moreover, we are troubled by the inclusion of the proposed World Bank Zero Routine Flaring initiative, which is applicable to the oil and gas industry. Such a reference should be either removed or qualified as only pertaining to the oil and gas industry. We again respectfully request that such an insignificant source, composed entirely of essential public services, be excluded from this control measure.

54-4

We are also concerned that the draft control measure discussion omits a discussion of technological and financial challenges associated with biogas pipeline injection or vehicle fuel projects. The following briefly outlines some of our concerns regarding the language contained in this draft control measure: (1) wastewater treatment plants and landfills do not extract biogas



from the ground, so reinjection is not applicable, (2) our members strive to utilize biogas as a renewable resource. Nevertheless, flaring capacity at wastewater treatment plants is needed for emergency and backup purposes. Unlike wastewater treatment plants, landfill biogas continually declines in flow and methane concentration after landfill closure. The heating value of such dilute biogas cannot support most energy production applications, so facilities will need to maintain the ability to flare. Consequently, this control measure should not suggest that flared biogas can easily be used as a renewable fuel, (3) our members have installed fuel cells with advanced biogas gas cleanup systems, but premature breakthrough has significantly impacted the viability of this technology. The discussion excludes any mention of these actual operational limitations, so we request that such limitations be included and assessed by SCAQMD staff, (4) the discussion suggests that flared biogas can be used cost-effectively as transportation fuel, but in reality such projects are not financially viable, and (5) considering most biogas flares are used for emergency and backup purposes, we have difficulty understanding SCAQMD's estimated cost-effectiveness assumptions. We would like to review and comment on SCAQMD's cost-effectiveness calculations.

54-4
Con't

We respectfully request that this control measure exclude the wastewater sector, include an updated emissions inventory for landfills and wastewater treatment plants, SCAP be provided an opportunity to review and comment on SCAQMD's cost-effectiveness calculations and include a meaningful discussion regarding the technological and financial barriers limiting our ability to pursue pipeline injection and vehicle fuel projects.

MCS-01 Improved Breakdown Procedures and Process Re-Design:

Considering no SIP-creditable reductions would be obtained, SCAP does not understand the value of this proposed control measure. We acknowledge that EPA has expressed concerns regarding Rule 430 due to Startup Shutdown Malfunction (SSM) litigation and the resulting SIP Call [Federal Register / Vol. 80, No. 113 / June 12, 2015]. However, Rule 430 has yet to be disapproved by EPA and litigation challenging the SIP Call is ongoing.

54-5

Based upon our conversations with EPA, we believe that there are various approaches to address EPA's new SSM policy. In fact, EPA's SIP Call indicates that states and local agencies are allowed to issue their own enforcement discretion criteria, but such criteria cannot be binding on the United States or any citizens group. We respectfully request that SCAQMD staff review responses from individual states, which illustrates the nebulous nature of EPA's SIP Call (see <http://www.arnoldporter.com/en/perspectives/publications/2016/07/how-states-are-reacting-to-epas-caa-mandate>). These responses clearly justify a need for public vetting of any change to SCAQMD's SSM policy. We again recommend that this proposed control measure be excluded from the AQMP and allow legal proceedings to conclude prior to any SCAQMD rulemaking.

BCM-10 Emission Reductions from Greenwaste Composting:

While we understand that this proposed control measure is intended to reduce VOC and NH₃

54-6



emissions from chipping and grinding, we are concerned about specifically identifying vendors with non-commercial technology. In the past, our members have retained vendors with this type of technology, which were unable to achieve claimed emission levels in real-world practice. SCAP again requests that developing technology not be specifically discussed in the AQMP unless the actual performance can be demonstrated and validated in commercial and sector specific applications.

54-6
Con't

As described in our previous comment letter, we remain confused by the focus on food waste digestion in association with a greenwaste composting control measure. This draft control measure indicates that increased anaerobic digestion capacity "...at Sanitation Districts could lower emissions of NH₃ and VOC for certain waste streams..." We agree that wastewater treatment plants can reduce emissions associated with food waste, but we are unaware of any technology that would allow wastewater treatment plant digesters to process greenwaste. Please revise this control measure to exclude the discussion of greenwaste digestion at wastewater treatment plants.

BCM-05 Ammonia Emission Reductions from NO_x Controls:

While we appreciate staff's verbal clarification that this proposed control measure is only intended for large-scale projects, we respectfully request that this clarification be memorialized in the control measure. Moreover, to avoid potential confusion, SCAP recommended that this control measure be revised to indicate biogas and other small-scale projects would not be subject to ammonia emission reductions.

54-7

We would like to take this opportunity to thank you for meeting with our biogas coalition on August 9th. We look forward to working with you supporting for legislation and policies that provide financial incentives encouraging the use of biogas as a resource. Please do not hesitate to contact Mr. David Rothbart of the Los Angeles County Sanitation Districts, SCAP Air Quality Committee Chair, should you have any questions regarding our comments on the draft AQMP at (562) 908-4288, extension 2412.

Sincerely,

A handwritten signature in black ink that reads 'John Pastore'. The signature is written in a cursive style.

John Pastore, Executive Director

cc:

Dr. Philip Fine, SCAQM

Responses to Comment Letter from Southern California Alliance of Publicly Owned Treatment Works (SCAP) (Comment Letter 54)

Response to Comment 54-1:

The control measures CMB-01 and CMB-03 do not negatively impact the beneficial use of biogas, they encourage it. Under CMB-01, incentives for infrastructure and biogas cleanup would help biogas sources find beneficial uses with co-benefits for these waste streams. CMB-03 is a regulatory measure and would require emission reductions from non-refinery flares if flaring is used, but biogas operators would still be encouraged to explore beneficial uses of biogas first.

Response to Comment 54-2:

Staff appreciates the support for the incentive programs. The SCAQMD, CARB and U.S. EPA recognize the need for emission reductions from local, state and federal sources. As such, a “fair share” of reductions needs to take place. The percent emission reductions needed to meet the 8-hour ozone standards by 2023 and 2031 at 45 and 55 percent, respectively, from NO_x emissions would be a guide although not a definitive endpoint. Stationary sources are already “well controlled.” However, staff recognizes opportunities to transition to cleaner technologies with commercially available, cost-effective equipment. In addition, incentives could assist in accelerating deployment of advanced technologies in some cases faster than a regulatory approach. It is important to recognize the responsibility of the SCAQMD to ensure attainment of the standards in a timely manner and the District’s authority over the stationary sources that could assist in meeting those required deadlines. As noted numerous times during the development of the Plan, eliminating all stationary source emissions would still not result in the standards being met, but that does not remove the responsibility of those sources, when cost-effective and feasible, to contribute to reductions.

Response to Comment 54-3:

Staff notes the challenges of transitioning to zero and near-zero technologies. The incentive measure strives to help facilities transition to zero and near-zero technologies that may not currently be the cost-effective. Incentives for infrastructure and biogas cleanup would help these sources find beneficial uses with co-benefits for these waste streams. Facilities are targeted for the long-term reduction target (2031). It is expected advancements in technology will continue and become more cost-effective once it is established. Staff also anticipates technology will evolve to address waste streams for facilities that produce low levels of biogas and market based programs like the low carbon fuel standard and renewable portfolio standard can help encourage biogas utilization. Staff has noted some of the challenges in CMB-01 such as costs for pipeline infrastructure and biogas cleanup. A working group will be formed to further discuss the challenges, including reliability, availability, and cost-effectiveness, for specific sectors on biogas. This may include a technology assessment. Biogas operators are encouraged to explore beneficial use of biogas whenever and wherever technologically feasible and cost-effective. Table 4 (formerly), currently in the Draft Final in CMB-01 as Table 5 – “Incentive Effectiveness by Category,” is only a demonstration of source categories staff identified for potential emission reductions through incentive funding and costs for replacement or control equipment currently available. Upon implementation and formation of a working group, new zero and near-zero emitting technologies could be identified as well as other sources for potential NO_x reductions. Staff used the permitting database and Annual Emissions Reporting (AER) database to determine specific equipment and facilities that may provide a pathway for the emission reductions using incentive funding. Staff identified all combustion source categories and the

respective emissions from the permitting and AER database to determine where emission reductions can be achieved. Staff anticipates many facilities and stakeholders will come forth and participate in the incentive program and once a working group is established it will determine the most cost-effective means for distribution of funds to achieve emission reductions.

Response to Comment 54-4:

Staff will include wastewater treatment facilities in the control measure as a possible source of emission reductions from non-refinery flares. Using the permitting and Annual Emissions Reporting (AER) system, it was determined non-refinery flares at wastewater treatment systems have low overall emissions. Once the rulemaking process begins, working group meetings will be formed to discuss the wastewater treatment facilities in detail and determine whether they should be considered an insignificant source. Staff notes the World Bank Zero Routing Flaring initiative applies to oil and gas facilities; however, it will be taken into consideration during rule development. Consideration may be made for circumstances where there is a need for an emergency or backup handling of the gas. A technology assessment may be conducted to validate the feasibility of the technology for different source categories and exemptions may be considered during the rulemaking process. Staff has included language acknowledging wastewater treatment plants may have lower waste gas streams and the options for pipeline injection may be limited. Staff has also included the emission inventory for sewage treatment, which is 0.01 tpd of NO_x and is expected to remain so for 2023 and 2031. The emissions inventory will be further refined during the rulemaking process as will the cost effectiveness and technical feasibility of emission reductions from wastewater treatment facilities.

Also, please see Response to Comment 54-3 regarding challenges with biogas pipeline, reinjection, and vehicle fuels (CMB-03).

Staff acknowledges the need for emergency flaring and is not proposing a ban on flaring. Emission limits will be set on flaring. Beneficial use of biogas will be incentivized over routine flaring.

Response to Comment 54-5:

Please see Response to Comment 35-10 regarding the control measure MCS-01.

Response to Comment 54-6:

The 2016 AQMP control measure BCM-10 explores emerging technologies as a potential control method, which would be considered during the rulemaking process following a demonstration of the commercial viability and performance of this technology, as with any other emerging technology. BCM-10 proposes emission reductions from processing organic waste including foodwaste and greenwaste. While anaerobic digesters focus on foodwaste, BMP composting focuses on greenwaste.

Response to Comment 54-7:

The applicability of this control measure cannot exclude small scale projects at this point in time. Until such time where a rulemaking is conducted, a proper analysis of all sources will be able to signify which types of sources will be directly affected along with the associated emission reductions.

Comment Letter from Southern California Edison (Comment Letter 55)



August 19, 2016

Dr. Philip Fine
Deputy Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

RE: 2016 Air Quality Management Plan

Dear Dr. Fine:

Southern California Edison (SCE) appreciates the opportunity to comment on the South Coast Air Quality Management District's (District) proposed 2016 Air Quality Management Plan. Moving the District's air basins into attainment is a step toward improved air quality and improved economic growth by increasing the ability of businesses to operate in this region. The District's proposed Plan is an effective set of control measures that, if adopted into rules by the District and other agencies, will lead the region toward attainment with the National Ambient Air Quality Standards (NAAQS) through cleaner transportation and stationary source technologies. SCE recognizes that adopting the control measures in the AQMP is the first step in the process where the District, CARB, and other agencies will develop the control measures into proposed rules, and that the rulemaking process is where the detailed examination of issues such as cost-effectiveness, feasibility, total cost, environmental impacts and "upstream" energy sectors impacts will occur. SCE also recognizes that many control measures will not become rules but instead require the District and the stakeholder community to secure additional funding sources to enable research, development and demonstrations, as well as education programs and incentive based commercialization programs. SCE supports this overall direction and effort to bring the region into attainment with the NAAQS.

55-1

SCE recommends that the Plan specifically include a long-term, large-scale, and comprehensive role for utilities to implement the transportation-electrification provisions of Senate Bill 350 (2015). Both investor-owned utilities and publicly-owned utilities have a role in increasing transportation electrification within California. Publicly-owned utilities are currently investing in transportation electrification, and seeking new ways to be involved across all transportation segments. SB 350 directs investor-owned utilities to propose and implement programs and investments to accelerate widespread transportation electrification in order to help meet several long-term state goals and federal air-quality standards. Further, SB 350 defines transportation electrification in a very broad manner. Many of the interagency partners are and should continue to work with the Public Utilities Commission to implement SB 350 in the most effective fashion, and to extend limited state funds.

P. O. Box 800
2244 Walnut Grove Ave.
Rosemead, CA 91770

To the extent utilities are providing and will provide transportation-electrification infrastructure and investments, state agencies should seek to avoid duplicating or boxing-out utility investment. The Plan should specifically call for a utility public-private partnership regarding, for example: investments in charging and propulsion infrastructure, market-education and outreach programs, incentive programs, pilot projects, and electric rates designed with transportation electrification in mind. Also, the District should work with the CPUC and the Utilities as utility applications for infrastructure projects are developed and licensed. Achieving the infrastructure needed to deploy zero-emission technologies is a significant challenge; utility participation is needed to aid both the private and public sector in deploying these technologies.

55-1
Con't

SCE also recognizes that, occasionally, past control measures have not been successfully developed into rules because of issues discovered in the rulemaking process, and that the result was other rules on different source categories or new incentive programs were developed to replace the missing reductions in air pollution. Given this challenging situation, it is in all our interests to work with the District and other agencies to determine the most cost-effective, least impact rules resulting from the control measures in this AQMP and to secure funding for cost-effective pollution reductions from incentive programs.

Comments on Specific Stationary Source Control Measures

ECC-01 Co-Benefit Emission Reductions From GHG Programs, Policies, And Incentives

The concept of taking advantage of existing efforts to reduce GHG emissions through reduced reliance on combustion technologies certainly can be used to reduce criteria pollutant emissions. But there are situations where sources with low criteria pollutant emissions can have higher GHG emissions. An example is the Mountain View Generating Station which SCE operates. Mountain View GS is one of the lowest emitting generating stations in the United States. It achieves the low emissions because of the extremely high efficiency of the combined cycle technology. But this high efficiency also results in frequent dispatch by the California Independent System Operator. So while the generating station has low emissions of criteria pollutants, it does have relatively higher GHG emissions. As the District looks to realize and document the reductions of criteria pollutants from the GHG programs, there must be the recognition of what might appear to be conflicting outcomes in some situations.

55-2

When looking across the entire electric generation sector, there has been seen a continued reduction in GHG emissions and criteria pollutants as a result of the state mandated Renewable Portfolio Standard, and the SCE Preferred Resources Pilot. Both programs look to achieve cleaner energy generation through the adoption and procurement of renewable energy. As is pointed out in your discussion of Proposed Method of Control, there will be continued expansion of regulations which will increase zero emission renewable resources.

ECC-2 Co-Benefits From Existing Residential And Commercial Building Energy Efficiency Measures

55-3

Southern California Edison, as authorized by the Public Utilities Commission, has an existing energy efficiency program. As noted in your description of this control measure, SB 350 require the CPUC to establish efficiency targets for the utilities. This will require regulatory action at the Commission which will allow the District the opportunity for input into that process and to work jointly with SCE and other stakeholders as the regulations are developed at the PUC.

55-3
Con't

The focus on energy efficiency measures should also be a coordinated effort where existing utility sponsored programs are jointly offered to disadvantaged communities along with any programs the District may develop. This will allow for greater outreach and for the opportunity to have community members pick a program that best suits their needs and for which they are qualified.

ECC-03 Additional Enhancements In Reducing Existing Residential Building Energy Use

Southern California Edison has experience in smart grid technology and, through our energy education programs, we have assisted customers in the selection of appropriate smart technology to reduce energy use. While costs for conversion of household energy usage through solar and storage are still expensive, use of electric water heaters as an energy storage device that can be cycled to use non-peak energy can be a very efficient first step for consumers. The major concern with this control measure is the funding for the incentives. Without the incentives, much of this proposal will be unachievable. The District will need to partner with all stakeholders to develop the strategy to obtain the needed funds.

55-4

CMB-01 Transition To Zero And Near-Zero Technologies For Stationary Sources

This is one of the more complex and aggressive control measures with many different facets. To incorporate combined heat and power, changes in flaring technologies, process heating and steam production, along with smart grid and new storage technologies is a major undertaking. Developing rules that will satisfy the Clean Air Act Requirements just adds to the complexity. The implementation of the smart grid and storage technologies will require very close coordination with Southern California Edison at the front end of any projects associated with this control measure.

55-5

When an entity contemplates the use of additional electric generation through CHP which could feed back into the grid or the addition of possible storage technologies, there first must be an engineering analysis regarding the local electric circuits. The assertion that grid based energy storage systems can reduce the need for additional peaker generation is correct for short term energy needs. But the local circuits must be capable of handling the two way power flows for charging the battery and feeding power back into the grid. The determination of these capabilities requires complex and time consuming analysis as required by CPUC regulations. SCE can support the concepts articulated in this proposal, but we need to highlight the technical realities associated with implementation.

SB 350 mandates the CPUC to have regulated energy companies develop plans for increased use of renewable resources. This requirement, along with Edison’s existing energy storage development programs, should provide useful information that will assist in the implementation of these concepts. But there are still regulatory actions related to SB 350 at the CPUC. The District should work closely with Edison to inform that regulatory process and ensure the final result is achievable and compliments the goals of this control measure.

55-5
Con't

CTS-01 Further Reductions From Coatings, Solvents, Adhesives, and Sealants

In the electric utility industry, there are many pieces of equipment that must be maintained on a regular basis to ensure grid reliability. This includes switching equipment, and generation equipment. In many cases the manufacturers of this equipment specify the use of denatured alcohol as the only approved cleaning solvent; the use of an unapproved solvent will void the warranty of the equipment and will possibly result in an unsafe condition if any residue remains on the equipment following cleaning or maintenance. Southern California Edison, Los Angeles Department of Water and Power and San Diego Gas and Electric have had several conversations with the Air Resources Board to raise some concerns with their Consumer Products Regulations. The ARB is working with the utilities to determine how to address the issue.

55-6

This raises concerns with any proposed changes to SCAQMD Rule 1171. SCE performs maintenance activities under the provisions of Rule 1171 (g) (4). While we do not use a large amount of the solvent, it is a necessary product for appropriate maintenance of critical electrical equipment. The District will need to work closely with the utilities and ensure that, while we focus on a shift to zero emission technology, we do not have unintended results that will affect the fuel source for that technology.

Comments on Specific Mobile Source Control Measures

MOB-05 Accelerated Penetration Of Partial Zero-Emission And Zero Emission Vehicles

Southern California Edison supports the proposals in MOB-05. Making incentives available for the purchase of zero emission electric vehicles is a timely move that will mesh nicely with the SCE Charge Ready Pilot. This pilot program is moving forward with the goal of putting in infrastructure and helping with the costs for the installation of 1500 charging stations, many in disadvantaged communities. The program can greatly increase the number of workplace charging stations that can add additional incentives for the use of electric vehicles. The development of a funding mechanism which will make the purchase of these zero emission vehicles more economical, with additional incentives for low income purchasers, compliments the Edison Charge Ready pilot.

55-7

MOB-07 Accelerated Penetration Of Partial Zero-Emission And Zero-Emission Light-Heavy Duty And Medium-Heavy Duty Vehicles

Southern California Edison supports control measure MOB-07. The emphasis on zero emission technology holds the most potential for reducing NOx emissions in the basin and it also has the advantage of proving the technology to other fleet operators. The analysis which will determine what types of trucks and engines can be used for this control measure must be a high priority. But this measure will help to move towards cleaner fleets.

55-8

MOB-09 On-Road-Mobile Source Emission Reduction Credit Generation

Southern California Edison supports control measure MOB-09. While this will have some limitations as a result of the necessary quantification protocol in Rule 1612, it still adds to the improved deployment of zero emission technology. It is one more option that either a project proponent in need of credits, or someone wishing to sell the credits might use.

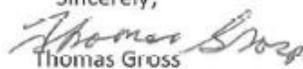
55-9

MOB-11 Extended Exchange Program

Southern California Supports AQMP Control Measure MOB-011 Extended Exchange Program. The ubiquitous use of gasoline powered lawn equipment makes this control measure one that can realize efficient emission reductions particularly in areas, such as parks and recreation areas, where they are in close proximity to human activity. This control measure may offer an area for collaboration with SCE in assisting with the logistics and program publicity.

55-10

Southern California Edison appreciates the work that has been put into the AQMP and we look forward to working closely with the District during the rulemaking process.

Sincerely,

Thomas Gross

Responses to Comment Letter from Southern California Edison
(Comment Letter 55)

Response to Comment 55-1:

Staff appreciates the participation in the development of the 2016 AQMP and support for the overall direction of the Plan. Transportation electrification will play an important role in the future for our region and SCAQMD will certainly be interested in the impacts from the implementation of SB 350.

The commenter recommends that the 2016 AQMP “include a long-term, large-scale, and comprehensive role for utilities to implement the transportation-electrification provisions of Senate Bill 350”. To develop a large-scale and comprehensive role as part of the 2016 AQMP is beyond the scope of the AQMP. However, Chapter 10 of the Draft Final 2016 AQMP includes an overall discussion of the role utilities will play in helping the region meet federal air quality standards. Several activities are proposed for the SCAQMD to engage in, including “coordinating planning, technology demonstration, and incentive program efforts”; “schedule for infrastructure and technology needs”; and “provide technical and project assistance”, which staff believes will address the long-term role of the utilities will have. As part of this activity, the role utilities will have can be further defined.

Response to Comment 55-2:

Staff will be cognizant of any potential conflicting outcomes when tracking co-benefits from ECC-01 and appreciates the comment.

Response to Comment 55-3:

As the SCAQMD has done in the past, staff will work collaboratively with Southern California Edison and all stakeholders to address implementation of the incentive and co-benefit measures.

Response to Comment 55-4:

Please see Response to Comment 55-3 with regard to partnering with stakeholders. Please see Response to Comment 26-3 regarding the Financial Incentive Funding Action Plan.

Response to Comment 55-5:

Staff agrees that implementation of control measure CMB-01 will not be an easy task and there will be technical hurdles to overcome to be successful. Chapter 10 in the Revised Draft Plan now includes a statement on using electric water heaters as a form of energy storage during excess renewable generation and a grid resource when load reductions are needed. Staff appreciates the need for engineering analysis to ensure compatibility with the grid.

Response to Comment 55-6:

SCAQMD staff will work closely with stakeholders when considering VOC reductions to ensure safe and effective alternatives exist.

Response to Comment 55-7:

SCAQMD staff appreciates the comments and support for District Measure MOB-05 and looks forward to working with the commenter on expanding the infrastructure in support of the greater number of zero-emission vehicles.

Response to Comment 55-8:

SCAQMD staff appreciates the comments and support for District Measure MOB-07 and looks forward to working with the commenter on expanding the infrastructure in support of the greater number of zero-emission vehicles.

Response to Comment 55-9:

SCAQMD staff appreciates the comments and support for District Measure MOB-09 and looks forward to working with the commenter on expanding the infrastructure in support of the greater number of zero-emission vehicles.

Response to Comment 55-10:

SCAQMD staff appreciates the comments and support for District Measure MOB-11 and looks forward to working with the commenter on expanding the infrastructure in support of the greater number of zero-emission equipment.

Comment Letter from Southern California Gas Company (Comment Letter 56)



George I. Minter
Regional Vice President
External Affairs & Environmental Strategy
Southern California Gas Company
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August 19, 2016

Philip Fine, Ph.D.
Deputy Executive Officer
Planning, Rule Development & Area Sources
21865 Copley Drive
Diamond Bar, CA 91765

Submitted via OnBase Comment Form

RE: Comments on the Draft 2016 Air Quality Management Plan

Dear Dr. Fine:

Southern California Gas Company (SoCalGas) appreciates the opportunity to provide comments on the South Coast Air Quality Management District's (SCAQMD) Draft 2016 Air Quality Management Plan (AQMP). SoCalGas strongly supports SCAQMD's efforts to develop an integrated AQMP to demonstrate attainment of the ozone and fine particulate matter (PM_{2.5}) National Ambient Air Quality Standards (NAAQS). The attainment of the Clean Air Act standards is vitally important to those communities in which SoCalGas operates and provides natural gas service.

Throughout the AQMP process we have offered our support, technical expertise, and partnership to SCAQMD on the development of control measures and inventories. Going forward, we welcome continued collaboration through participation in working groups, efforts to co-fund research and development for advanced technology solutions, and partnership on incentives programs. SoCalGas respectfully submits the following comments on the Draft 2016 AQMP.

56-1

I. A Robust Mobile Source Strategy is Key to Demonstrating Attainment

This AQMP poses unique and daunting challenges as attainment of the 1997 and 2008 8-hour ozone standards (80 parts per billion and 75 parts per billion, respectively) require a 43 percent reduction in nitrous oxides (NO_x) by 2023 and a 55 percent reduction in NO_x by 2031. The challenge in achieving emissions reductions on this scale in the next seven to fifteen years is compounded by the fact that SCAQMD has limited authority, if any, to control the majority of

56-2

Page 2

the emission sources in the South Coast Air Basin (Basin). Mobile sources emit over 80 percent of regional NOx emissions, with heavy-duty trucks as the single largest contributor.¹

Accordingly, SCAQMD's fair-share approach properly assigns responsibility to those sources that are the most significant contributors to NOx emissions in the Basin, and provides a clear path to attainment. SoCalGas strongly supports this approach that allocates mobile source emission reduction commitments to the California Air Resources Board (ARB) and to the U.S. Environmental Protection Agency (EPA), while still committing to a partnership with ARB and EPA to seek emissions reductions from these mobile sources locally. However, all emission reduction commitments in the AQMP (from SCAQMD, ARB, and EPA) must be supported by adequate inventory data, as well as cost-effectiveness and feasibility analyses. Anything less could result in an over-commitment by SCAQMD, ARB, and/or EPA to emissions reductions, which will then have to be reconciled from the already heavily regulated stationary source sector.

56-2
Con't

Near-Zero Emission Trucks Are Necessary to Reach Air Quality Goals. SCAQMD and ARB are aligned in their recognition that dramatic reductions in NOx emissions from heavy-duty trucks must be achieved by 2023. To do so, California needs an accelerated transition to near-zero heavy-duty trucks for those trucks based in California, and a complimentary new federal heavy-duty truck emission standard to address trucks that operate in the state but are not registered here. As ARB's Mobile Source Strategy notes, "[a]bout 60 percent of total heavy-duty truck [vehicle miles traveled] in the South Coast on any given day is accrued by trucks purchased outside of California, and are exempt from California standards."² SoCalGas is supportive of ARB's proposed federal low NOx standard and submitted letters supporting both SCAQMD's and San Joaquin Valley Air Pollution Control District's (SJVAPCD) Petitions to EPA requesting such a standard.³

56-3

As SCAQMD well knows, in 2015, Cummins Westport Inc. certified the world's first heavy-duty engine at near-zero emission levels – 90 percent below the existing federal NOx standard, and certified to meet ARB's lowest-tier optional near-zero emission standard (0.02 g/bhp-hr NOx), while also reducing greenhouse gases (GHGs) by 15 percent. This "next generation" heavy-duty natural gas engine is now commercially available for transit bus, refuse, school bus, and medium-duty truck applications. And, the commercialization of additional near-

¹ The top six NOx emissions source categories are: heavy-duty trucks (45 tons per day NOx), off-road mobile equipment (43 tons per day NOx), ships and commercial boats (34 tons per day NOx), locomotives (23 tons per day NOx), cars and light duty vehicles (22 tons per day NOx), and aircraft (16 tons per day NOx). Draft 2016 AQMP, Chapter 4, p. 4-7.

² ARB, "Mobile Source Strategy," p. 46 (May 2016), available at: <http://www.arb.ca.gov/planning/sip/2016sip/2016mobsrc.pdf>.

³ South Coast Air Quality Management District, "Petition to EPA for Rulemaking to Adopt Ultra-Low NOx Exhaust Emission Standards for On-Road Heavy-Duty Trucks and Engines," (June 3, 2016), available at: <http://www.aqmd.gov/docs/default-source/default-document-library/news-docs/nox-petition-to-epa-june-2016.pdf?Status=Temp&sfvrsn=2>; San Joaquin Valley Air Pollution Control District, "Petition Requesting that EPA Adopt New National Standards for On-Road Heavy-Duty Trucks and Locomotives Under Federal Jurisdiction" (June 22, 2016), available at: http://www.valleyair.org/recent_news/Media_releases/2016/PR-District-Petitions-Federal-Government-06-22-16.pdf. SoCalGas' Letters of Support are included as Attachments A and B.

Page 3

zero emission heavy-duty natural gas engines are expected to follow by 2018, addressing a wider array of medium- and heavy-duty on-road applications.

56-3
Con't

The technology to achieve the massive and necessary NOx emissions reductions is at our fingertips. This is truly the case in the heavy-duty trucking sector. SoCalGas strongly supports SCAQMD's efforts to accelerate the deployment and market penetration of these vehicles through incentive programs.

II. Stationary Sources Have Substantially Reduced Their Emissions, But Require Incentives to Spur Advanced Technology Solutions

While the vast majority of the emissions reductions needed for attainment must come from mobile sources, reductions from stationary point and area sources within the Basin are a necessary corollary. SoCalGas is committed to help facilitate the development, commercialization, and deployment of near-zero emission equipment that is cost-effective and technologically feasible.

Industrial Modernization Requires Accurate Inventories and Facility-Specific Solutions. After decades of regulation and ratcheting down emissions limits, the major stationary sources simply cannot achieve the scale of emissions reductions needed for attainment with currently available cost-effective technologies. The industrial modernization measure (CMB-01) proposes incentive programs to spur the replacement of combustion equipment (e.g. boilers, turbines, and engines) at facilities as well as identifying the 66 largest, non-RECLAIM NOx emitting facilities as candidates for incentives and modernization protocols.⁴ The breadth of this control measure is quite large, and an accurate emissions inventory is a critical first step to ensure the success of programs derived from the measure (see Attachment 1 for more detailed comments). However, with work on inventories and refinement of strategy, SoCalGas believes that the incentives contemplated in this measure could successfully encourage more rapid turnover of antiquated equipment, and the use of advanced, near-zero emission control technology that is not yet cost-effective.

56-4

Controlling Small, Area Sources Can Be Costly and Difficult to Implement.

The majority of the other stationary source control measures focus on smaller emissions sources scattered throughout the Basin. For example, the measures addressing emissions from space and water heating equipment (CMB-02) as well as cooking equipment (CMB-04) reach beyond commercial facilities and into the home. These measures deserve special scrutiny if for no other reason than the fact that CMB-04 has the highest Amortized Annual Average cost, and CMB-02 has the third highest Amortized Annual Average cost.⁵ The measures propose a mix of incentives-based and traditional command and control approaches and seek a combined three tons per day of NOx reductions from thousands of area sources by 2023. The emission limits and technological advancements contemplated by these measures may not be market-ready for

56-5

⁴ Appendix IV-A, p. IV-A-51.

⁵ Preliminary Cost Summary Handout, Agenda Item 2, SCAQMD Scientific, Technical & Modeling Peer Review Advisory Group (July 28, 2016), available at: http://www.aqmd.gov/home/library/meeting-agendas-minutes/agenda?title=STMPRSocio_072816.

several years. SoCalGas has been actively engaged with SCAQMD on these measures and while we reiterate our support for near-zero, cost-effective and feasible technological solutions, we also emphasize the importance of pursuing the deployment of high efficiency equipment and energy conservation initiatives, particularly in the residential sector.

56-5
Con't

Energy Efficiency Should Build on Past Successes. With regard to the AQMP measures specifically addressing energy efficiency, SoCalGas encourages the use of incentives for equipment upgrades, comprehensive conservation and performance assessments, and weatherization services. The proposed control measure addressing residential building energy use (ECC-03) has the second highest Amortized Annual Average cost.⁶ We offer our support to SCAQMD so as to maximize and leverage existing energy efficiency programs. And, when developing energy efficiency initiatives, we emphasize the importance of flexible strategies, not singularly focused approaches (e.g. merely weatherization), and offering a range of fuel neutral solutions to optimize savings.

56-6

Renewable Natural Gas Use Can Reduce NOx, As Well As GHG Emissions. Additionally, SoCalGas has been enthusiastically engaged in conversations with SCAQMD staff about the further development of control measures that focus on the beneficial use of biogas to achieve NOx reductions from flares and other combustion sources. We offer our strong support for a control measure that delineates a pathway for conditioning and utilizing waste gas as a transportation fuel or for pipeline injection. By developing such a measure, SCAQMD has a unique opportunity to promote emissions reductions from both stationary and mobile sources. Pipeline injection is a win-win scenario as it not only diverts gas from being combusted in a flare, but also decarbonizes the natural gas supply. Then, when the biogas is utilized as renewable natural gas (RNG), the lowest carbon intensity transportation fuel, in an ultra-low NOx engine, we can achieve significant criteria pollutant as well as GHG reductions.

56-7

The Renewable Transportation Fuel Industry Must Grow Quickly, Aided By Fuel Neutral Policies. SoCalGas also notes that ARB has a proposed “Low-Emission Diesel Requirement” in the Mobile Source Strategy that intersects with SCAQMD’s proposed biogas control measure and incentive programs for near-zero heavy-duty trucks. The objective of ARB’s measure is to replace 50 percent of diesel demand with low emission diesel by 2031, thereby establishing a state policy that could significantly bias the growth of the biofuels industry and limit innovation in the alternative fuels markets.⁷ As we all know, this industry needs support to grow, especially to reach production levels anticipated in these plans for both renewable diesel and RNG. Because there is a finite amount of investment funding available, it is critical to consider the implications of these policies on the growth and innovation of the nascent biofuels industry. We seek clarification on the role of biogas and renewable diesel within the appropriate transportation markets. To inform a policy assessment on the growth of the renewable fuels industry, we urge SCAQMD and policymakers to examine the respective

56-8

⁶*Id.*

⁷ “Mobile Source Strategy,” California Air Resources Board (May 2016), p. 153, available at: <http://www.arb.ca.gov/planning/sip/2016sip/2016mobsrc.pdf>.

Page 5

renewable biofuels technologies, costs, energy consumption, feedstock impacts, and near- and long-term environmental benefits.

56-8
Con't

III. Identifying Revenue Sources for Incentive Funding is Critical to the Success of the Attainment Strategy

SCAQMD has made it clear that traditional command and control regulations simply cannot achieve the emissions reductions necessary to attain the federal ozone and particulate matter standards by the legally mandated attainment dates. Historical heavy-duty vehicle turnover rates must be accelerated, and advanced emission control equipment, which is not yet cost-effective, must be deployed to achieve the scale of emissions reductions required by 2023. SoCalGas agrees that an incentive-based approach is the only way to obtain the necessary emissions reductions in the timeframe required without putting a significant and disproportionate economic burden on residential, commercial, and industrial sources in the Basin. Without incentives to defer the costs of advanced technology when equipment is replaced, the cost-effective control technology options available to replace older equipment will likely not result in sufficient emissions reductions by 2023. Thus, SCAQMD is appropriately looking beyond traditional regulatory approaches to demonstrate attainment.

56-9

The incentives plan delineated in this AQMP comes with a price-tag of one billion dollars per year for 15 years. SoCalGas acknowledges that securing funding at that level will be no small feat. And, incentives that benefit all residents of the Basin should be funded by all citizens. To that end, we offer our support for SCAQMD's efforts to identify incentive dollars at the federal, state, and local levels to address the Basin's unique air quality challenge and look forward to Staff's development of a more specific funding framework. SoCalGas recognizes that it is incumbent upon industry to step up to help identify revenue sources, facilitate equipment turnover, maximize efficiencies, and support the development of the next generation of advanced technology solutions.

The AQMP Incentive Program Should Encourage Local Manufacture of Low Emission Equipment. SCAQMD and the State of California are national and global leaders in trying to develop an economy that will continue to provide an attractive standard of living, while reducing the pollution and associated health impacts upon our residents. Incentives are needed to do this. And, these incentive programs can be structured to attract new, clean manufacturing and new jobs to our area. We encourage SCAQMD, ARB, and EPA to broaden their efforts to seek new funding and leverage these financial incentives to develop clean industries for our region.

56-10

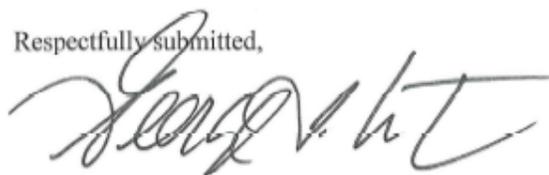
IV. Comments on Individual Control Measures

Our comments, presented in the following attachments, are organized by control measure and AQMP chapter. To facilitate further discussion and mutually beneficial coordination, we have included a SoCalGas subject matter expert's name and email address for each of the individual comments. Please do not hesitate to also reach out to Noel Muyco, Environmental Affairs Program Manager, at (213) 215-3397 or NMuyco@semprautilities.com, with any questions.

Comments are provided on the following control measures and AQMP chapters:

Appendix	Control Measure / Chapter	SoCalGas Contact
1	CMB-01: Transition to Zero & Near-Zero Emission Technologies for Stationary Sources	Daniel McGivney DMcGivney@semprautilities.com
2	CMB-02: Emission Reductions From Commercial And Residential Space And Water Heating	Steve Simons SSimons@semprautilities.com
3	CMB-03: Emission Reductions From Non-Refinery Flares	Daniel McGivney DMcGivney@semprautilities.com
4	CMB-04: Emission Reductions From Restaurant Burners and Residential Cooking	Steve Simons SSimons@semprautilities.com
5	FUG-01: Improved Leak Detection and Repair	Charles Humphrey CHumphrey@semprautilities.com
6	BCM-01: Further Emission Reductions from Commercial Cooking	Steve Simons SSimons@semprautilities.com
7	MOD-7: Accelerated Penetration of Partial Zero-Emission and Zero-Emission of Light-Heavy and Medium-Heavy-Duty Vehicles MOB-8: Accelerated Retirement of Older On-Road Heavy-Duty Vehicles	Jerilyn Mendoza JMendoza5@semprautilities.com
8	Chapter 10: Climate and Energy	Geoff Danker GDanker@semprautilities.com

Respectfully submitted,



George I. Minter
Regional Vice President, External Affairs & Environmental Strategy

SoCalGas Comments on the Draft 2016 AQMP

Appendix 1

CMB-01: Transition to Zero & Near-Zero Emission Technologies for Stationary Sources

I. Summary of the Control Measure

This measure seeks NOx and VOC emissions reductions from replacement of traditional combustion sources, including internal combustion engines (stationary and emergency), turbines, boilers, furnaces, ovens, and flares with zero and near-zero emission technologies. Replacement technologies are identified as including fuel cells, electrification, beneficial use of waste gas, energy storage, as well as maximizing existing energy efficiency measures.

II. Proposed Method of Control

Two pathways for emission reductions are contemplated:

(1) Implementation Schedule for Zero and Near-Zero Emission Technologies.

SCAQMD will develop and adopt an implementation schedule for non-power plant combustion sources that generate power for electricity either through distributed generation, facility power, process heating, and/or steam generation. Equipment such as engines, turbines, and boilers will be identified based on age in an “implementation schedule.” Incentives will be provided to allow early retirement and advanced replacement with zero and near-zero emission technologies.

(2) Incentivizing Facility Modernization.

SCAQMD will incentivize emission reductions from various stationary and area sources through Voluntary Incentive Programs (VIPs). Facilities would qualify for incentive funding if they install zero or near-zero equipment or accept permit conditions resulting in cost-effective emissions reductions that are beyond existing requirements. Landfills and municipal solid waste facilities are examples of facilities where such modernization could occur.

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III. Comments

A. Distinguishing Between the Methods of Control

SoCalGas supports the incentives-based approach as the most efficient, cost-effective method to spur equipment turnover and facility modernization. However, we are not clear on the distinction between the Zero and Near-Zero Technologies Implementation Schedule and the Facility Modernization methods of control.

Is it SCAQMD’s intent that an Implementation Schedule be developed as a first step towards incentivizing early retirement and advanced replacement of equipment? Would the equipment identified in the Implementation Schedule be eligible for incentives by equipment type? Or would incentives be limited to the VIPs identified for facilities subject to the Facility Modernization pathway? Both pathways appear to use equipment age as a trigger for targeting equipment and sources for replacement or modification, and both discuss the use of incentives. We would appreciate clarity on how SCAQMD intends to prioritize categories of equipment and facilities targeted by this control measure.

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As noted in our earlier comment letter (May 20, 2016), SoCalGas recommends that the development of any Implementation Schedule or VIP should consider “an additional filtering analysis that considers feasibility and cost-effectiveness before committing to an across-the-board percentage reduction.” These are important criteria needed for development and implementation of any SIP-creditable mechanism.

B. Emissions Inventories

We commend SCAQMD for revising the top-down approach initially included in this draft control measure and constructing a bottom-up emissions inventory of non-RECLAIM, combustion sources in the Annual Emission Reporting (AER) program. Working from actual inventory profiles provides an important starting point for identifying feasible, cost-effective emissions reductions.

However, SoCalGas is troubled by the large inventory numbers included in this measure. Based on information provided in Table 1, there are 12,928 Stationary Internal Combustion Engines (ICEs) emitting 22.5 tons per day of NO_x in the South Coast Air Basin.¹ Over 9,000 of those ICEs were permitted on or before 2010, emit 11 tons per day of NO_x, and are identified as eligible for VIPs.² Additionally, Table 1 identifies boilers as an equipment category that emits 8.3 tons per day of NO_x. And, all of the equipment categories in Table 1 total out to 38 tons per day of NO_x. But, the CMB-01 Control Measure Summary states that the entire Summer Planning NO_x Inventory in 2012 for all non-RECLAIM combustion sources included in this measure is 22.3 tons per day of NO_x.³ This is far less than the tonnage included in Table 1. Moreover, the total fuel combustion in the 2012 Summer Planning Emissions inventory listed in Appendix 3 is 29.18 tons per day of NO_x.⁴ These inventory numbers are inconsistent and point to the fact that the AER-derived data appears to overstate emissions.

C. Emission Reductions Solutions Should Be Technology Neutral

Opportunities to reduce emissions should be analyzed on a technology neutral basis. For example, advancements in engine control technology could reduce emissions well below current standards. While combined heat and power (CHP) applications were mentioned in previous drafts of this measure, the current draft appears to choose fuel cells and battery storage as winning technologies.

SoCalGas strongly recommends that energy efficiency improvements and increased deployment of CHP and micro-CHP be considered as part of the suite of technology solutions. Conventional generation technologies (e.g. engines, turbines, micro-turbines) that are configured for CHP feature the exact same benefits being attributed to fuel cells. Additionally, CHP offers numerous other advantages including higher overall energy efficiency metrics due to increased waste heat utilization from higher quality waste heat, higher reliability and durability, and vastly lower fixed and variable costs. The U.S. Environmental Protection Agency (EPA) recognizes that CHP systems generally have a system efficiency greater than 60 percent, and can be as high

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¹ Table 1 - NO_x Combustion Sources, Draft 2016 AQMP Appendix IV-A, p. IV-A-50.

² Table 2 – Breakdown of ICEs, Draft 2016 AQMP Appendix IV-A, p. IV-A-50.

³ Control Measure Summary, Draft 2016 AQMP Appendix IV-A, p. IV-A-42.

⁴ Attachment B – 2012 Summer Planning Emissions by Source Category in South Coast Air Basin (Tons/Day), Draft 2016 AQMP Appendix 3.

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as 90 percent.⁵ Further, CHP systems provide a unique capability to produce high pressure steam (in excess of 320 degrees Fahrenheit) that is necessary for many industrial applications (whereas the current fuel cell technologies have waste streams achieving a maximum of 250 degrees Fahrenheit). Thus, the environmental, economic, and operational benefits of current CHP technology should be considered.

Although we continue to discourage mandating a specific technological pathway, as discussed in our prior comment letter (May 20, 2016), SoCalGas supports incentivizing fuel cells as advanced technology solutions. Fuel cells may emit less on a megawatt-hour basis than a CHP system and, at first glance, may appear to be less costly to operate. But, when boiler fuel costs are taken into account, they are actually more expensive. While natural gas prices fluctuate, at a fully bundled price of \$0.50/therm (commodity plus transportation), fuel cells can cost an additional \$1.50/hr to \$7.50/hr to operate compared to a natural gas engine. This would be in addition to the \$7,000/kW price a customer would have to pay for a new system. Incentives could help overcome these cost barriers.

Additionally, while replacing CHP with fuel cells may cost a customer additional money, new fuel cells and CHP projects will provide a customer savings on their utility bills all while emitting no more than 0.07lbs NOx/MWh. This would provide a cost-effective solution, while lowering NOx emissions from the grid.⁶

Further, providing incentives for fuel cells and new CHP systems will create a more robust marketplace. Currently, there are several examples of ultra-clean CHP and fuel cells ready for commercial application. SCAQMD has permitted ICEs that meet the rigorous Rule 1110.2 electric generation emissions standard, and there are at least two ultra-clean, commercially available ICE systems for CHP applications (e.g. Tecogen and Jenbacher). There are also three fuel cell manufacturers that have several installations in Southern California: Bloom, Fuel Cell Energy, and Doosan (previously United Technology).

With regard to the discussion about energy storage, SCAQMD seems to assume that energy storage systems will be charged by renewable energy generation when available. However, there is currently no requirement that energy storage be used in this manner and we caution against making that emissions assumption. In actual practice, energy storage systems are frequently charged at a time when renewable generators are not producing power, which means that the storage system is charging from the grid and NOx emissions are simply being shifted to electric generating units. California's Self Generation Incentive Program (SGIP) data shows that in Southern California Edison and SoCalGas territory, out of 98 non-residential, Advanced Energy Storage systems installed, only three have been paired with a renewable resource. In addition, less than 25 percent of over 500 pending projects are projected to be attached to a renewable resource.⁷

⁵ "CHP Benefits," U.S. Environmental Protection Agency, available at: <https://www.epa.gov/chp/chp-benefits>.

⁶ Southern California Edison's utility owned generation had a NOx emission factor of 0.1 lbs/MWh in 2014. See "Corporate Responsibility Report," Southern California Edison (2014), p. 52, available at: https://www.sce.com/wps/wcm/connect/c0fcef5-e04a-4287-8301-8e66e3e5fbac/2014_Corporate+Responsibility+Report_FINAL+single-page.pdf?MOD=AJPERES&ContentCache=NONE.

⁷ "SGIP Weekly Projects & Budget Reports," Self-Generation Incentive Program, California Public Utilities Commission, available at: <http://www.cpuc.ca.gov/sgip/>.

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D. Incentive Programs

In order to bring fuel cells and other emerging technology to market, incentives that provide actual dollars towards capital costs would be most beneficial. Additionally, we encourage SCAQMD to consider including equipment retrofits as part of its incentives program. Retrofits of existing equipment could avoid stranded investment and provide cost-effective, feasible, emission reduction solutions. This measure carries an incentives price tag of \$450 million, and SoCalGas supports the development of VIPs that are SIP-creditable and meet the quantifiable, surplus, enforceable, and permanent criteria.⁸ We also support SCAQMD's efforts to explore additional solutions for incentives, including reduced permitting fees, New Source Review and Emission Reduction Credit Incentives, as well as expedited California Environmental Quality Act review and other concepts.

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⁸ However, we note here that based on the "Preliminary Cost Summary of Draft 1016 AQMP Control Measures" provided at the Scientific, Technical and Modeling Peer Review Advisory Group Meeting on July 28, 2016, the VIP cost of CMB-01 is listed at \$337.3 million. Has SCAQMD reconsidered the level of incentive funding available for this measure? What accounts for the more than \$100 million fluctuation? See "Preliminary Cost Summary of Draft 1016 AQMP Control Measures," Agenda Item 2, SCAQMD Scientific, Technical & Modeling Peer Review Advisory Group (July 28, 2016), available at: http://www.aqmd.gov/home/library/meeting-agendas-minutes/agenda?title=STMPRSocio_072816.

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Appendix 2

CMB-02: Emission Reductions from Commercial and Residential Space and Water Heating

I. Summary of the Control Measure

This measure seeks NO_x emissions reductions from unregulated commercial space heating furnaces and reductions from incentive programs to replace older boilers, water heaters, space heating furnaces, and pool heaters with new low emission and more efficient units.

II. Proposed Method of Control

This measure includes a mix of regulatory and incentive-based methods of control. SCAQMD is proposing to continue to implement the existing Rule 1111 emission limit of NO_x for residential space-heaters and to consider adopting a similar rule to regulate commercial heating units. Another component of this measure may be to require residential water heaters to meet the heat input based emission limits in Rules 1121 and 1146.2 to ensure that energy efficiency incentive programs for these residential appliances achieve NO_x emission reductions. Additionally, this measure proposes to incentivize the voluntary replacement of older boilers, water heaters, space heaters, and pool heaters with currently available low NO_x technologies.

III. Comments

A. Proposed Regulatory Measures

SoCalGas supports the development and deployment of low NO_x residential and commercial space heaters, and residential water heaters. However, we urge caution when pursuing new commercial space heating emissions limits based on the existing Rule 1111 NO_x emissions limits. Though the Rule 1111 NO_x emissions limit (14 ng/J (20ppm)) for residential space heaters went into effect in 2015, manufacturers have yet to bring a product to market. Citing reliability, durability, and serious safety concerns, the Air-Conditioning, Heating, and Refrigeration Institute and furnace manufacturers have asked for reconsideration and leniency from the Rule 1111 limits and mitigation fee program. SoCalGas strongly recommends that SCAQMD work closely with industry to resolve these design and safety issues before proposing similar mandatory emission limits on commercial-size space heating equipment. To that end, we would welcome the opportunity to partner with SCAQMD to provide funding support for the research, development, and longer-term field demonstration of viable, low NO_x space heating products.

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Further, SoCalGas cautions that, before eliminating the heat output based emission limits for water and space heating equipment, SCAQMD should consult with manufacturers to gain a better understanding of the costs for equipment redesign and safety recertification. Such a change in regulatory direction could impose a significant burden on manufacturers who have been subject to constantly changing emissions limits.

B. Incentives Programs

SoCalGas supports the development of an incentive program that is designed to take advantage of existing energy efficiency programs targeting higher efficiency water and condensing gas space-heating products. Any incentive program developed by SCAQMD should

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provide funding for both high efficiency, low emission gas and solar technologies and should be fuel neutral without emphasizing electric alternatives over gas options. We are committed to introducing new, low NOx water and space heaters into the marketplace and would offer our assistance to SCAQMD on how to best use incentive funding to augment existing energy efficiency programs. We also would welcome partnerships to create new programs to incentivize the replacement of older, higher-emitting units.

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Appendix 3

CMB-03: Emission Reductions from Non-Refinery Flares

I. Summary of the Control Measure

This proposed control measure seeks reductions of NOx and VOC from gas handling at non-refinery sources including organic liquid loading stations, tank farms, oil and gas production facilities, landfills, and wastewater treatment facilities.

II. Proposed Method of Control

CMB-03 consists of two levels of control: 1) beneficial use of waste gas that would typically be flared by directing it to equipment that can convert or clean the gas into an acceptable renewable energy source; 2) the installation of new low NOx flares implementing Best Available Control Technology (BACT).

III. Comments

A. Beneficial Use of Waste Gas Provides a Pathway to Reduce Both Stationary and Mobile Source Emissions

SoCalGas strongly supports SCAQMD's proposal to develop a pathway for the beneficial use of waste gas. By diverting biogas from flares, and then conditioning and utilizing the waste gas as a transportation fuel or injecting into a natural gas pipeline, SCAQMD has a unique opportunity to reduce emissions from both stationary and mobile sources. Pipeline injection is a win-win scenario as it both minimizes combustion emissions and decarbonizes the natural gas supply, thereby realizing greenhouse gas (GHG) reduction co-benefits and contributing to the Low Carbon Fuel Standard (LCFS) and Renewable Fuel Standard (RFS) goals.

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Currently, the allowable emission rate from biogas engine-driven electrical generation is much higher than the allowable rate from power plants and other engines, especially new engine-driven electric generation.¹ Rather than being disposed via combustion, this waste gas would be much better utilized in the transportation sector as a source of Renewable Natural Gas (RNG). As SCAQMD is well-aware, in 2015, Cummins Westport Inc. certified the world's first heavy-duty engine at near-zero emission levels – 90 percent below the existing federal standard, and certified to meet ARB's lowest-tier optional low-NOx emission standard at 0.02 g/bhp-hr NOx. The tailpipe emissions of heavy-duty vehicles running on these engines are as low as emissions associated with generating the electricity used to charge heavy-duty battery-electric vehicles (BEVs) with a state of the art generation plant. And, when fueled with RNG, the lowest carbon

¹ Current (and future) allowable emission rates for biogas fueled engine-driven electrical generation in the South Coast Air Basin can be found in SCAQMD Rule 1110.2(d)(1)(C). Currently, most biogas engines must meet 36 ppmvd NOx and 40 (landfill gas) or 250 (digester gas) ppmvd VOCs. On January 1, 2017, the emission limits for all biogas engines become 11 ppmvd NOx and 30 ppmvd VOC. Existing engine systems already must meet the 2017 biogas emission standards and new engine-driven electric generation must meet much more stringent emission limits. See SCAQMD Rule 1110.2(d)(1)(L).

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intensity transportation fuel, near-zero emission natural gas trucks can provide a pathway to meet both the federal ozone standard and the State's climate change goals.²

ARB is currently requiring RNG use for all near-zero emission natural gas trucks under the incentive programs being proposed, a commendable and attainable goal under today's market conditions, and consistent with the integrated planning approach for GHG and criteria pollutant reductions. Because of the linkage created by these interconnected State and local incentive programs (i.e. near-zero emission natural gas trucks receiving incentives must use RNG), there will be significantly more demand for RNG production. The approach proposed in this control measure will directly support the State's other objectives, while identifying another NOx reduction benefit associated with the use of biogas or RNG. Further, this control measure has the potential to complement SCAQMD's "Petition to EPA for Rulemaking to Adopt Ultra-Low NOx Exhaust Emission Standards for On-Road Heavy-Duty Trucks and Engines" and would provide a clear pathway to support the development of the RNG market for use in low NOx heavy-duty trucks throughout the South Coast Air Basin.

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B. Further Information is Needed to Accurately Represent Control Costs

The draft proposed control measure currently approximates a control cost of \$20,000 per ton of NOx reduced. SoCalGas is concerned that this does not adequately account for the costs of pipeline interconnects. In order for this technology to be successfully demonstrated and deployed, we encourage SCAQMD to consider incentivizing facility upgrades to allow the waste water treatment and landfill industries to overcome cost barriers currently inhibiting pipeline interconnects. To that end, SoCalGas looks forward to continued discussions and participation in a working group to further explore biogas opportunities.

² RNG-fueled near-zero emissions heavy-duty engines provide 80 percent or greater significant GHG emissions reductions. "Game Changer Technical White Paper: Next Generation Heavy-Duty Natural Gas Engines Fueled by Renewable Natural Gas" (May 3, 2016), Figure 4, available at: http://ngvgamechanger.com/pdfs/GameChanger_FullReport.pdf

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Appendix 4

CMB-04: Emission Reductions from Restaurant Burners and Residential Cooking

I. Summary of the Control Measure

This measure seeks NOx emissions reductions from residences, retail restaurants, and quick service restaurants utilizing commercial cooking ovens, ranges, fryers, and charbroilers through the development, installation, and use of low NOx burner technologies.

II. Proposed Method of Control

SCAQMD proposes to achieve a 50 percent reduction in NOx emissions by 2031 from residential and commercial cooking operations through existing energy efficiency programs, new incentives programs, and potential regulatory approaches.

III. Comments

SoCalGas appreciates the opportunity to partner with the SCAQMD to promote the development, commercialization, and installation of high-efficiency, low-emissions gas-fired cooking equipment. We have committed to co-fund a study profiling the NOx emissions of various types of cooking equipment so as to provide an informed pathway for identifying and targeting the highest-emitting equipment that will be the most cost-effective and feasible to replace. An accurate equipment emissions inventory is a critical first step for this control measure.

While we are supportive of a pragmatic, incentives-based approach to achieve emissions reductions in the cooking sector, we caution that there will be significant hurdles to overcome. Residential and commercial cooking equipment (other than certain types of charbroilers) have never been regulated – neither in the South Coast Air Basin, nor in any other jurisdiction. There are numerous challenges to reducing NOx emissions from cooking equipment and we encourage the SCAQMD to work closely with the North American Association of Food Equipment Manufacturers, equipment manufacturers, and the commercial food service industry.

Redesigning cooking equipment will be a significant undertaking for manufacturers as this control measure could potentially impact many models and types of highly specialized cooking equipment with unique applications, processes, and product requirements. Manufacturers have limited resources to redesign different types of equipment for a myriad of uses. And, there is currently no known technical burner solution to reduce NOx from residential or commercial ranges. Developing more efficient burners that combust less fuel, with correspondingly lower NOx emissions should be also considered. SoCalGas recommends that incentive programs and potential future regulations should focus on equipment with the highest NOx reduction potential from point of sale to provide business certainty and direction so that manufacturers can invest their limited resources effectively.

Moreover, targeting residential cooking equipment is likely not cost-effective. This equipment is very low-use, with an hour or less of active burner use per day.¹ Further, many of

¹ Only seven percent of residential fuel use is for cooking (about 31 therms per year or about 0.086 therms per day – 8,630 Btu per day). Range tops commonly have multiple burners with varying inputs. Small burners for simmer-type cooking are rated at around 5,000 Btu per hr, standard burners are rated at about 9,000 to 12,000 Btu per hr, and

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SoCalGas' residential customers are economically challenged and would likely not be able to afford increased equipment costs without significant financial assistance. Alternatively, initiatives to encourage home energy conservation could effectively reduce residential cooking emissions.

We are also concerned that, per SCAQMD's "Preliminary Cost Summary of Draft 2016 Control Measures," this measure has the highest Annual Amortized Average cost (\$118.9 million) of all of the stationary source measures. Based on the table provided at the Scientific, Technical and Modeling Peer Review Advisory Group Meeting on July 28, 2016, nearly 80 percent of the costs associated with CMB-04 are attributed to compliance costs, not incentive costs.² This directly conflicts with Staff's statements that the control strategy will focus on incentive programs, not command and control regulations. SoCalGas strongly encourages SCAQMD to reconsider shifting the allocation of costs towards incentives for this measure.

Preliminary Cost Summary of Draft 2016 AQMP Control Measures						
	Present Value of Compliance Cost (2017)		Present Value of Incentives (2017)		Present Worth Value (2017)	Amortized Annual Average (2017-2031)
	\$MM	\$MM	\$MM	\$MM	\$MM	\$MM
SCAQMD Stationary Source Measures						
BCM-01 (Commercial Cooking)	\$163.0	+	\$0.0	=	\$163.0	\$17.0
BCM-10 (Greenwaste Composting)	\$18.4	+	\$0.0	=	\$18.4	\$1.7
CMB-03 (Non-Refinery Flares)	\$36.3	+	\$0.0	=	\$36.3	\$2.2
CMB-02 (Space and Water Heating)	\$1,891.4	+	\$327.7	=	\$2,219.1	\$99.0
CMB-04 (Restaurant Burners and Residential Cooking)	\$1,552.7	+	\$388.2	=	\$1,940.9	\$118.9
CTS-01 (Coatings, Solvents, Adhesives, and Lubricants)	\$59.0	+	\$0.0	=	\$59.0	\$5.4
ECC-03 (Building Energy Efficiency)	\$1,553.4	+	\$313.5	=	\$1,866.9	\$103.4
CMB-01 (Transition to Zero & Near-Zero Emission Technologies)	\$515.8	+	\$337.3	=	\$853.1	\$34.8
CMB-05 (RECLAIM)	\$837.8	+	\$0.0	=	\$837.8	\$19.3
FUG-01 (Leak Detection and Repair)	\$11.5	+	\$0.0	=	\$11.5	\$1.0
Total for SCAQMD Stationary Source Measures	\$6,639.3	+	\$1,366.6	=	\$8,005.9	\$402.6

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SoCalGas remains hopeful that with further study, inventory refinement, and funding initiatives, the South Coast Air Basin will benefit from emissions reductions from the cooking sector. SoCalGas welcomes the opportunity to continue to participate in a cooking industry working group, to co-fund an emissions inventory study, to co-fund an equipment research and development program, and to maximize funding for existing energy efficiency programs. We also recommend that this group be expanded to include cooking operators that are non-profits, or run by local governments, such as cafeterias at hospitals, schools, and universities. We look forward to continued collaboration with SCAQMD on this measure and to study, develop, and demonstrate new, low NOx burner technologies for commercial applications in restaurant operations.

large high input burners are rated at about 15,000 to 20,000 Btu per hr. See "California Statewide Residential Appliance Saturation Study," California Energy Commission, Energy Commission Publication No. CEC-400-04-009 (June 2004), available at: http://www.energy.ca.gov/HERS/rulemaking/documents/docs_relied_upon.html
² "Preliminary Cost Summary of Draft 2016 AQMP Control Measures," Agenda Item 2, SCAQMD Scientific, Technical & Modeling Peer Review Advisory Group (July 28, 2016), available at: http://www.aqmd.gov/home/library/meeting-agendas-minutes/agenda?title=STMPRSocio_072816.

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Appendix 5

FUG-01: Improved Leak Detection and Repair

I. Summary of the Control Measure

This proposed control measure would reduce VOC emissions from a variety of emission sources, including but not limited to, oil and gas production facilities, storage and transfer facilities, and other sources where fugitive emissions occur from piping components, wastewater system components, and process and storage equipment.

II. Proposed Method of Control

Phase I: Pilot Smart LDAR Program

The Pilot Program will demonstrate feasibility of new Smart leak detection and repair (LDAR) technology and establish implementation protocols. The goal of the Pilot Program will be to identify facilities and industries already subject to LDAR programs and to assess whether Smart LDAR could be utilized.

Phase II: Amend Fugitive VOC Rules

Based on the results of Phase I, SCAQMD fugitive VOC rules including Rules 462, 463, 1142, 1148.1, 1173, 1176, and 1178 may be amended to include the use of new detection technology.

III. Comments

A. Cost-Effectiveness

SoCalGas supports the use of optical gas imaging technology where cost-effective and feasible. For example, using Smart LDAR during Rule 463 inspections on tanks could be an effective use of the technology. During the Phase I Pilot Program, SoCalGas could share information regarding our on-the-ground experience with Smart LDAR, including certain limitations of the gas-imaging technology, and difficulties implementing in the field.

This control strategy relies upon adding new Smart LDAR requirements, as well as self-inspection programs, additional work practices, and record-keeping and reporting requirements. All of these new mandates will require new capital investments, maintenance costs, and increased labor costs. The proposed measure approximates a cost-effectiveness figure of \$11,000 per ton of VOC reduced, but provides no detail as to how this figure was derived, and what data was used to support the cost analysis. SoCalGas requests an explanation for the current cost analysis and that a more robust analysis including labor and ancillary costs be conducted.

SoCalGas estimates that the LDAR provisions in the California Air Resources Board's (ARB's) Proposed Regulation on Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities (Proposed Regulation) will cost upwards of \$36 million annually statewide (using a global warming potential (GWP) 72 for methane). During our review of the Proposed Regulation, SoCalGas found that ARB appeared to under-estimate the costs of the LDAR provisions by a factor of three or more due to omitted costs such as labor and ancillary

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equipment.¹ A summary comparing the ARB and SoCalGas economic analysis of LDAR is provided below, and a detailed description of the calculations are provided in Attachment 5A.²

Table 1. Summary of ARB Economic Analysis (EA) and SoCalGas EA Cost-Effectiveness Calculations for the Proposed Rule LDAR Provisions.

Parameter	ARB EA (Quarterly, GWP = 72)	ARB EA (Quarterly, GWP = 72) Corrected	SCGas EA (Quarterly, GWP = 72)	SCGas EA (Quarterly, GWP = 21)	SCGas EA (Annual, GWP = 72)	SCGas EA (Annual, GWP = 21)
Cost of LDAR Program [\$ / yr]	\$10,182,299	\$9,646,628	\$36,870,175	\$36,870,175	\$9,485,109	\$9,485,109
Baseline (Uncontrolled) Methane Emissions [mt CH ₄ / yr]	13,650	13,805	11,351	11,351	11,351	11,351
Global Warming Potential [mt CO ₂ e / mt CH ₄]	72	72	72	21	72	21
Annual Emissions Reductions from LDAR	60%	60%	90%	90%	80%	80%
Estimated Emission Reductions (mt CO ₂ e / yr)	589,680	596,376	735,545	214,534	653,818	190,697
Annual Value of Gas Saved [\$ / yr]	\$1,547,683	\$1,565,257	\$889,045	\$889,045	\$790,262	\$790,262
Cost per Metric Ton [\$/mt CO ₂ e]	\$17.27	\$16.18	\$50.13	\$171.86	\$14.51	\$49.74
Cost per Metric Ton with Gas Savings [\$ /mt CO ₂ e]	\$14.64	\$13.55	\$48.92	\$167.72	\$13.30	\$45.60

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While SoCalGas welcomes the use of advanced technology, especially when it is more efficient than Method 21, SCAQMD must carefully consider the entire range of costs – capital investment, labor, and maintenance – before promulgating regulatory mandates.

¹ “SoCalGas and SDG&E Comments on Proposed Regulation for Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities,” (July 18, 2016), p.3, available at: <http://www.arb.ca.gov/lists/com-attach/20-oilandgas2016-B3RUMVOyBOIRJFUx.pdf>.

² While comparing the cost-effectiveness of ARB’s Proposed Regulation seeking methane emission reductions to SCAQMD’s control measure focused on VOC reductions is not an apples-to-apples comparison, we provide our economic analysis of the Proposed Regulation as included in our July 18, 2016 comment letter to ARB to illustrate the need to comprehensively evaluate cost-effectiveness with consideration of labor and ancillary equipment costs. See Attachment 5A.

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B. Avoiding Regulatory Duplication

ARB's Proposed Regulation is focused on reducing methane emissions; however, it also has VOC reduction co-benefits. ARB estimates a reduction of 1,152,000 metric tons of carbon dioxide equivalent (using GWP 72 for methane), which equates to about 320 metric tons of VOC per year. ARB also estimates a fugitive emission savings of about 220,000 metric tons of carbon dioxide equivalent, or 44 metric tons of VOC per year (0.12 tons per day). These fugitive emissions reductions estimated by ARB are very minimal. In contrast, this proposed control measure estimates a savings of 2 tons per day of VOC through Smart LDAR and other regulatory requirements. SoCalGas seeks clarification as to how SCAQMD plans to achieve these emissions reductions. Also, are these reductions mainly attributed to the petroleum industry?

Additionally, SoCalGas respectfully requests that as the SCAQMD seeks to amend its Rules to require Smart LDAR and associated maintenance and recordkeeping requirements, it also carefully balances the need for additional, duplicative regulation. ARB's Oil & Gas Rule will likely be adopted in February 2017, with implementation beginning in 2018. SCAQMD should work to minimize regulatory duplication and align any future rule amendments with existing state and federal requirements.

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ATTACHMENT 5A

Excerpt from July 18, 2016 SoCalGas and SDG&E Comment Letter to CARB

Attachment B: Review of Appendix B “Economic Analysis” to the CARB Staff Report

Overview

Appendix B of the Economic Analysis of the Proposed Regulation significantly underestimates the costs of implementing the Proposed Rule storage facility monitoring provisions. This appears to be the result of flaws in some of the data and assumptions that form the basis of the Economic Analysis. As set forth in the attached cover letter, SoCalGas and SDG&E recommend that ARB delay the adoption of these rules to give stakeholders and experts more time to provide necessary input—particularly with respect to costs and technical feasibility.

SoCalGas offers our assistance in providing information to improve the basic understanding of the affected emission sources. As an introduction, a brief review of the CARB EA of the proposed rule Well Stimulation provision is illustrative

Well Stimulation Provision

The Economic Analysis estimates that six separator/incinerator control systems will be sufficient to control emissions from 1,200 well stimulation activities per year. This equates to 200 well stimulations per year (or about four per week) for each control system. The Economic Analysis does not cite a specific source for the underlying data or assumptions to support this estimation. SoCalGas encourages ARB to consider adjusting the Economic Analysis to take into account the following:

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First, discussion with production personnel estimates full compliance with this rule provision would likely require at least twelve full-time control systems. Well stimulation treatments typically require one to three days to complete. Assuming an average of two days per well stimulation treatment, and considering real-world scheduling delays (*e.g.*, schedule changes due to mechanical and other problems, unexpected well issues, inclement weather, control equipment downtime for maintenance, etc.), a minimum of twelve, as opposed to six, full-time control systems would be required.

Second, the Economic Analysis should be revised to take into account the following anticipated costs, which currently are missing from the estimate:

- transporting the separator/incinerator control systems from site to site. At a minimum, a heavy duty trailer and large towing (*e.g.*, tractor-trailer) truck would need to be purchased and dedicated to each control system;
- ancillary equipment including pipes, hoses, connectors, tools, etc.;
- operating labor. At least one full time person would be required to drive each truck and operate each control system. Additional personnel would be required to set up and break-down the equipment at each site (*e.g.*, connect pipes and hoses);
- travel costs including per diem for the operator and truck fuel;
- disruption / delay of well stimulation activities due to implementation of the control requirements;
- control system maintenance labor and spare parts; and
- management and scheduling.

Moreover, the cost estimate assumes the control systems will have ten-year lifetimes, but do not cite the basis for the underlying assumption that equipment that is in continuous use and transported on a trailer over oil-field roads for ten years will remain functional for at least ten years. SoCalGas does not believe this is a realistic assumption.

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In addition, the cost estimate does not consider the GHG and other pollutant emissions from operating the control equipment (*e.g.*, combustion emissions from the incinerator and separator heater, gas leaks from separator components) and driving the tractor-trailer truck.

In sum, the ARB analysis assumed that the control equipment is purchased and that this transaction is all that is required. There were no costs for any labor or transportation or ancillary equipment, and a lack of accounting for the facility labor and ancillary equipment required to implement the proposed rule control practices and technologies is a consistent trend throughout the ARB economic analyses.

Additional assistance and feedback can be provided, but the comment schedule does not allow the ability to develop detailed comments and alternatives for all affected sources. Similar examples of erroneous or questionable assumptions and analysis are available for other sources affected by the proposed rule. For these reasons, SoCalGas urges ARB to delay implementation in order to obtain additional input from stakeholders and experts.

The following review of the ARB proposed rule LDAR provisions demonstrates that ARB has overestimated the cost-effectiveness of the LDAR provisions by a factor of three or more.

Leak Detection and Repair Estimates

The Economic Analysis for the proposed rule LDAR provisions appears to under-estimate the cost-per-metric-ton of CO₂e emissions controlled by a factor of about three, as summarized in Table 1. In addition to a direct comparison with the CARB LDAR costs, Table 1 presents SoCalGas LDAR cost-effectiveness estimates based on several assumptions, as discussed below.

- The second column lists the CARB Economic Analysis cost and emissions data for quarterly LDAR as presented in Appendix B “Economic Analysis” to the CARB Staff Report: Initial Statement of Reasons (ISOR).
- The third column lists the CARB Economic Analysis cost and emissions data for quarterly LDAR with identified corrections to the CARB calculations (identified in Attachment A and Attachment B)
- The fourth column lists the SoCalGas Economic Analysis cost and emissions data for quarterly LDAR, and the SoCalGas cost per metric ton reduction estimates are about three times greater than the CARB cost per metric ton reduction estimates. Note that SoCalGas estimates higher annual emissions reductions from LDAR than CARB (90% vs. 60%). This reduction estimate is based on measured leak reduction data and is discussed in Comment 10 of Attachment A.
 - For comparison, the fifth column lists the SoCalGas Economic Analysis cost and emissions data for quarterly LDAR using the 100-year Global Warming Potential (GWP) for methane of 21, and these SoCalGas cost per metric ton reduction estimates are about an order of magnitude greater than the CARB cost per metric ton reduction estimates. The CARB EA used a 20-year GWP for methane of 72 whereas SoCalGas believes the standard 100-year GWP for methane of 21 is more appropriate. The many reasons that the 100-year GWP is more appropriate for this analysis are presented in SoCalGas and SDG&E Comments on Revised Draft Regulation for Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities.¹

¹ SoCalGas and SDG&E Comments on Revised Draft Regulation for Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities, February 18, 2016.

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- The sixth column lists the SoCalGas Economic Analysis cost and emissions data for annual LDAR, and these are about the same magnitude as the CARB cost per metric ton reduction estimates. Note that SoCalGas estimates higher annual emissions reductions from annual LDAR than CARB estimates from quarterly LDAR (80% vs. 60%). This reduction estimate is based on measured leak reduction data and is discussed in Comment 10 of Attachment A.
 - For comparison, the seventh column lists the SoCalGas Economic Analysis cost and emissions data for annual LDAR using the more appropriate 100-year GWP for methane of 21 as discussed above, and the SoCalGas cost per metric ton estimates are about 3 times greater than the CARB cost per metric ton reduction estimates.

The data in Table 1 demonstrate that annual, rather than quarterly, LDAR is expected to exceed the target Estimated Emission Reductions at a cost-effectiveness level deemed acceptable by the CARB Economic Analysis.

Table 1. Summary of CARB EA and SoCalGas EA Cost-Effectiveness Calculations for the Proposed Rule LDAR Provisions.*

Parameter	CARB EA (Quarterly, GWP = 72)	CARB EA (Quarterly, GWP = 72) Corrected	SCGas EA (Quarterly, GWP = 72)	SCGas EA (Quarterly, GWP = 21)	SCGas EA (Annual, GWP = 72)	SCGas EA (Annual, GWP = 21)
Cost of LDAR Program [\$ / yr]	\$10,182,299	\$9,646,628	\$36,870,175	\$36,870,175	\$9,485,109	\$9,485,109
Baseline (Uncontrolled) Methane Emissions [mt CH ₄ / yr]	13,650	13,805	11,351	11,351	11,351	11,351
Global Warming Potential [mt CO ₂ e / mt CH ₄]	72	72	72	21	72	21
Annual Emissions Reductions from LDAR	60%	60%	90%	90%	80%	80%
Estimated Emission Reductions (mt CO ₂ e / yr)	589,680	596,376	735,545	214,534	653,818	190,697
Annual Value of Gas Saved [\$ / yr]	\$1,547,683	\$1,565,257	\$889,045	\$889,045	\$790,262	\$790,262
Cost per Metric Ton [\$ / mt CO ₂ e]	\$17.27	\$16.18	\$50.13	\$171.86	\$14.51	\$49.74
Cost per Metric Ton with Gas Savings [\$ / mt CO ₂ e]	\$14.64	\$13.55	\$48.92	\$167.72	\$13.30	\$45.60

* Attachment A and Attachment B detail the calculations and data used to develop Table 1.

As summarized in Table 1, the CARB EA severely under-estimates the cost per metric ton of CO₂e emission reductions. The primary reasons for the under-estimation include:

- CARB over-estimated the baseline/uncontrolled methane leak emissions. The uncontrolled methane leak emissions listed in Table B-9 of the CARB EA are based on total hydrocarbon (THC) emission

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factors from a CAPCOA document², and CARB assumed that 100% of the THC was methane rather than considering that transmission and storage natural gas contains about 95% methane by volume (about 93% methane by weight) and production and processing natural gas contains about 78.8% methane by volume (about 60% methane by weight). In addition, several of the emission factors in Table B-9 were incorrectly copied from the CAPCOA document. These errors combined to over-estimate methane emissions by about 20%.

- CARB relied upon discussions with LDAR contractors for LDAR surveys cost information, and these contractors have a very strong incentive to provide lowest possible implementation costs because promulgation of quarterly LDAR requirements would be very beneficial to their business. LDAR implementation costs provided in the most recent economic analysis published by ICF International (ICF 2016)³ are more than twice the average rate provided by the LDAR contractors, and these were used for the SoCalGas EA. Based on the text on page B-36 of the CARB EA and discussion of “person year”, it is not clear that CARB staff understand that the industry standard practice is two person survey teams, both for safety reasons and to record data including number of components inspected as required by the proposed rule.
- The CARB EA did not include any costs for facility personnel to support the LDAR surveys including training, scheduling, safety orientation, survey team escort and support, leak repair, etc. SoCalGas experience is that that one FTE will be required to support the LDAR project per year.
- SoCalGas experience is that the CARB EA recordkeeping and reporting estimates are about an order of magnitude too low. These tasks include collecting and tracking daily LDAR data (including leaks found and follow-up repair and verification measurements), audio-visual inspection requirements at unmanned sites, data QA checks (e.g., compare daily LDAR data to final reports), and report assembly and review.
- The CARB EA assumed that the facilities financially benefit from the gas savings; however, transmission and storage facilities do not own the gas they transport and storage and do not benefit economically from LDAR gas savings. This is commonly acknowledged in literature on methane reduction programs from EPA and others.
- The CARB EA valued gas savings at \$3.44 per Mcf which is considerably higher than current spot prices for natural gas.
- The CARB EA used a 5% discount rate based on Cal/EPA guidelines and the rationale that “five percent is the average of what the US Office of Management and Budget recommends (7 percent) and what US Environmental Protection Agency has used historically for regulatory analysis.” However, EPA used a 7% discount rate for the technical support document for the recently promulgated New Source Performance Standards for the oil and gas industry (40 CFR 60, subpart OOOOa)⁴ and the CARB EA-cited ICF document (ICF 2014) employs a 10% discount rate. Thus, the CARB EA 5 percent discount rate is not supported by pertinent documents and the SoCalGas EA used a conservative discount rate of 7%.

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Other deficiencies and flaws noted in the CARB EA include:

² CAPCOA, ARB. 1999. The California Air Resources Board Staff California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities.

³ ICF 2016. “Economic Analysis of Methane Reduction Potential from Natural Gas Systems,” ICF International, May 2016

⁴ EPA-HQ-OAR-2010-0505-5120. Background Technical Support Document for the Proposed New Source Performance Standards 40 CFR 60, subpart OOOOa, August 2015.

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- The calculation of "Cost per Ton with Savings" on page B-41 is incorrect.
- Engineering units are frequently incorrect (e.g., the units for the Conversion Factor of 836.2 should be scf/kg-mole rather than kg/kg-mole as listed on page B-40).
- Table B-9 of the CARB EA lists 1,318,700 components to survey, but page B-35 calculates a total of 1,339,185 that includes 20,485 well casings at heavy oil facilities and 939 compressors * 11 components per compressor, and this total is used to calculate the survey team years. Thus, the CARB EA total component basis for compliance costs (1,339,185) differs from the CARB EA total component basis for emission estimates (1,318,700) and is a flaw in the analysis. Further, the 1,339,185 component total is flawed because:
 - The 20,485 well casings at heavy oil facilities do not require quarterly LDAR, they require measurement of "the natural gas flow rate from the well casing vent annually by direct measurement" [§95668(h)(1)]; thus, the well casings should not be included in the LDAR components total.
 - An additional deficiency in the CARB EA is that an economic analysis for the proposed rule well casings provision is not provided.
 - Compressors (and the associated drivers) typically have many more than 11 components. Table W-1B to Subpart W of Part 98 lists a total of 259 components per compressor in the production segment to be used for GHG emissions reporting. Larger compressors employed in transmission and storage would be expected to have a higher total component count.

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Finally, it is notable that the CARB EA states,

"the capital cost of larger repairs is not included based upon the assumption that these repairs would need to be made regardless of an LDAR program; because *the operator would repair these parts regardless of the LDAR program [emphasis added]*"

And

"Emissions were estimated using emission factors from CAPCOA guidelines (CAPCOA, 1999), which also accounted for 'super leaker' components. These are components that leak at a rate several times the rate of what is expected from a typical component, and make up the majority of emissions. Several studies that have reported measurements of CH₄ emissions from natural gas production sites share a common observation-the existence of skewed emissions distributions, where a small number of sites or facilities account for a large proportion of emissions."

These two statements suggest that the majority of gas leak emissions would be controlled regardless of the implementation of an LDAR program. This simple assumption is very compelling and casts doubt on the need for and viability of the proposed rule LDAR provision.

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Appendix 6

BCM-01: Further Emission Reductions From Commercial Cooking

I. Summary of the Control Measure and Proposed Method of Control

BCM-01 seeks particulate matter (PM) reductions from commercial under-fired charbroilers. The intent of the measure is to establish a tiered program targeting higher efficiency controls for under-fired charbroilers at large volume restaurants and more affordable, lower efficiency controls at smaller restaurants.

II. Comments

SCAQMD has proposed charbroiler control measures in the past and concluded that such measures would be infeasible due to an inability to identify cost-effective controls. Accordingly, SoCalGas supports SCAQMD's efforts to conduct the requisite testing and studies before promulgating requirements to address under-fired charbroiler emissions. We encourage SCAQMD to identify the total costs for control systems by not only taking into account the cost of control devices, but also by considering the costs of installation, operation, maintenance, and labor. The Center for Environmental Research and Technology (CE-CERT) at the University of California, Riverside is currently compiling a technical and cost feasibility analysis to guide future regulation of PM emissions from under-fired charbroilers. SoCalGas urges SCAQMD to narrowly tailor any future proposed regulations using such cost and feasibility analyses.

SoCalGas also notes that the Draft AQMP states that "the NOx strategy to meet ozone standards will still ensure achieving the annual [PM2.5] standard by 2025."¹ Therefore, this measure may not even be necessary to attain the 2012 annual PM2.5 standard. And even if SCAQMD must pursue regulatory action to reduce direct PM emissions, the control of PM2.5 from wood-burning fireplaces has been demonstrated to be much more effective in the PM2.5 plan. SoCalGas' natural gas log replacement program has been very effective in reducing PM from fireplaces, and we offer our support to SCAQMD to continue our partnership on the firewood exchange program.

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¹ Draft 2016 AQMP, Chapter 4, p. 4-38.

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Appendix 7

Mobile Source Measures

MOB-7: Accelerated Penetration of Partial Zero-Emission and Zero-Emission of Light-Heavy and Medium-Heavy-Duty Vehicles

MOB-8: Accelerated Retirement of Older On-Road Heavy-Duty Vehicles

I. Summary of the Control Measures and Methods of Control

MOB-07 seeks additional emissions reductions through the continuation of the State Hybrid Truck and Bus Voucher Incentive Program (HVIP).

MOB-08 seeks additional emission reductions from on-road heavy-duty vehicles beyond the emissions reductions targeted in California Air Resources Board's (ARB) Truck and Bus Regulation.

II. Comments

SoCalGas enthusiastically endorses these Mobile Source Measures, as we believe they provide the fastest and most effective ways to improve air quality in our region. As stated in the Draft 2016 AQMP Appendix IV-A, "[e]missions from heavy-duty diesel mobile sources continue to represent a significant and increasing portion of the emissions inventory in the Basin, adversely affecting regional air quality."¹ Reducing emissions from heavy-duty diesel mobile sources is an urgent air quality and public health priority for the entire region. And, by focusing on upgrading the existing population of heavy-duty trucks operating in the South Coast Air Basin (Basin), critical mobile source emissions reductions can be achieved in the near-term in a cost-effective manner.

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A. Incentive Funding for Low NOx Heavy-Duty Trucks Can Provide Immediate Air Quality Impacts

The Draft AQMP notes that a near-zero, 8.9 liter low-NOx engine already exists for the light-heavy sector. "[T]here is currently one natural gas engine certified to the 0.02 g/bhp-hr optional NOx exhaust emissions standard. (For purposes of this measure, the term "near-zero" is used for engines meeting the 0.02 g/bhp-hr level.)"² MOB-07 specifically recommends HVIP funding of \$15,000 per vehicle for near-zero vehicles.³ SoCalGas understands that this incentive could be raised by ARB in the next few months to \$18,000, and possibly to as much as \$25,000 per vehicle. We strongly support SCAQMD's collaboration with ARB on these efforts. The inclusion of the highest incentive funding level possible is critical to offset the cost of purchasing a new near-zero natural gas heavy-duty vehicle. SoCalGas believes such incentives will have direct and immediate impacts to improve air quality in the Basin.

Further, while MOB-07 seems to place priority on the early introduction of electric hybrid vehicles and zero-emission medium-heavy-duty vehicles in the Basin, SoCalGas reminds SCAQMD that a federal revised low NOx standard of 0.02g/bhp-hr for heavy-duty vehicles is

¹ Draft 2016 AQMP, Appendix IV-A, p. IV-A-137.

² *Id.*

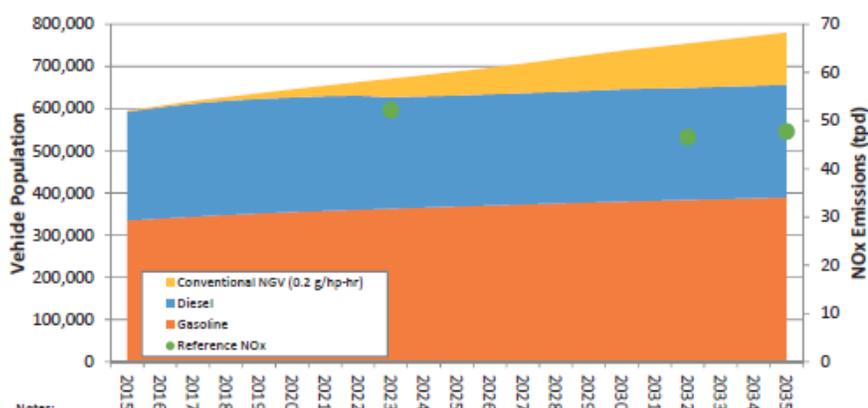
³ *Id.* at p. IV-A-138.

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technologically and commercially feasible because the “next generation” heavy-duty natural gas engine is now available for transit bus, refuse, school bus, and medium-duty truck applications. Additional near-zero emission heavy-duty natural gas engines are expected to follow by 2018, addressing a wider array of medium- and heavy-duty on-road applications.⁴ While we support a robust marketplace of vehicle options, we also remind SCAQMD that near-zero emission vehicles provide an economically viable and commercially feasible long-term emissions reduction solution.

SoCalGas has conducted significant research into the efficacy of investing in near-zero natural gas heavy-duty trucks to help local air districts meet air quality and other goals.⁵ Below shows the penetration of natural gas trucks into the Basin based upon market forces at the current NOx emission rate of 0.2 grams of NOx per brake horsepower hour.

Figure 1.



Notes:
 1. Analysis includes T7 Drayage, T7 Single, T7 Solid Waste Collection Vehicle, T7 Tractor, T7 Tractor Construction, T7 Agriculture, T7 Single Construction T7 Public, T7 Utility, T7 IS, T6 Instate Heavy, T6 Instate Small, T6 Utility, T6 Public, T6 TS, T6 Agriculture, T6 Instate Construction Heavy, T6 Instate Construction Small, LHDDT, and LHDGT.
 2. Vehicle population is based on the EMFAC2011 data for the South Coast Air Basin.

If we look a little further into the future – two years at most – we believe a 12 liter heavy-duty natural gas engine that would produce 90 percent less NOx per brake power hour, at 0.02 grams, will be commercially available. Engines that size could support near-zero NOx heavy-duty trucks used for drayage and long hauls common in the freight sector. If purchases of such near-zero NOx natural gas trucks were supported by incentive funds, market penetration of the trucks would be expedited, leading to a 33 percent NOx emission reduction by 2023 and 63 percent NOx emission reductions by 2031 in the Basin alone.

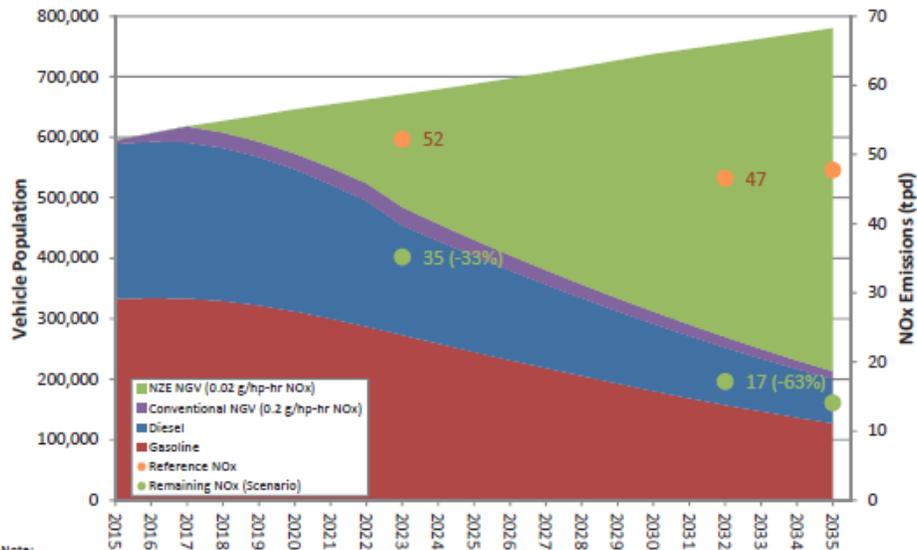
⁴ “Petition to EPA for Rulemaking to Adopt Ultra-Low NOx Exhaust Emission Standards for On-Road Heavy-Duty Trucks and Engines,” (SCAQMD) pp. 24-26 (June 2016), available at: <http://www.aqmd.gov/docs/default-source/default-document-library/news-docs/nox-petition-to-epa-june-2016.pdf?Status=Temp&sfvrsn=2>.

⁵ For further discussion and full explanation of assumptions for these Figures, please see “Near-Zero Emission (NOx) Natural Gas Truck Opportunities in the South Coast Air Basin,” Environ International Corporation (December 2014), included as Attachment 7A to these comments.

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SoCalGas Comments on the Draft 2016 AQMP

Figure 2.



Note:
 1. Analysis includes T7 Drayage, T7 Single, T7 Solid Waste Collection Vehicle, T7 Tractor, T7 Tractor Construction, T7 Agriculture, T7 Single Construction, T7 Public, T7 Utility, T7 IS, T6 Instate Heavy, T6 Instate Small, T6 Utility, T6 Public, T6 TS, T6 Agriculture, T6 Instate Construction Heavy, T6 Instate Construction Small, LHDDT, and LHDGT.
 2. Maximum incentives range from \$15,300 - \$35,000/Truck depending on the vehicle type and engine size.
 3. Assumed penetration rates after the incentive period ends remain at the 2023 level due to some mechanism.

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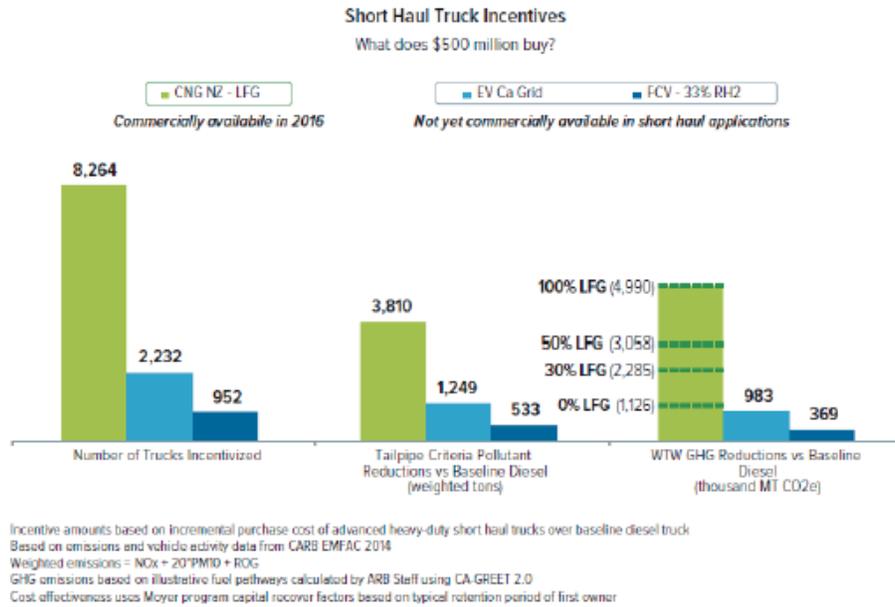
As discussed at length in the *Game Changer Technical Whitepaper* by Gladstein, Neandross and Associates, upgrading these traditional heavy-duty trucks with advanced near-zero emission natural gas vehicles can provide a cost-effective solution to help meet our air quality goals in the near term.

Figure 3 below demonstrates the relative impact that incentives supporting heavy-duty natural gas vehicles can have compared to alternative choices (which may not be available for several decades).⁶ For example, providing incentives for near-zero emission heavy-duty natural gas vehicles fueled with renewable natural gas (RNG) can have three times the NOx emissions reduction and five times the “well-to-wheels” GHG reduction benefits as the next best alternative. Additionally, growing the demand for RNG as a vehicle fuel for Southern California’s goods movement sector will promote the development of RNG production facilities, which often present an opportunity to maximize co-benefits by mitigating biogas combustion and reducing atmospheric emissions of methane. Coupled with the near-term availability of this technology, these leveraged impacts make supporting the adoption of heavy-duty natural gas vehicles through the AQMP a clear choice.

⁶ “Game Changer Technical White Paper: Next Generation Heavy-Duty Natural Gas Engines Fueled by Renewable Natural Gas” (May 3, 2016), Figure 4, available at: http://ngvgamechanger.com/pdfs/GameChanger_FullReport.pdf

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Figure 3.



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B. SoCalGas Supports Other Actions to Facilitate the Transition to Near-Zero Heavy-Duty Trucks

In addition to incentive funding, the AQMP contemplates a suite of other strategies to spur modernization of the fleet of heavy-duty on-road vehicles serving the South Coast Air Basin. In its discussion of MOB-08, SCAQMD suggests a variety of measures, ranging from preferential access to marine ports and warehouses for near-zero trucks to a provision similar to the Surplus Off-Road Option for NOx (SOON) program for the largest on-road truck fleets in the region.⁷ SCAQMD states that its “staff will convene a stakeholders working group” to evaluate the efficacy of such options that could be implemented to reduce emissions from on-road heavy-duty trucks.⁸ SoCalGas respectfully and formally requests to be included in the stakeholders working group to offer its expertise and insight on the near-zero natural gas heavy-duty vehicle market and how robust market development is critical for the future of clean air in the Basin.

⁷ Draft 2016 AQMP, Appendix IV-A, p. IV-A-143.

⁸ *Id.*

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ATTACHMENT 7A



Near-Zero Emission (NOx)
Natural Gas Truck Opportunities
in the South Coast Air Basin

56-19

Prepared for:
Southern California Gas Company
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Prepared by:
ENVIRON International Corporation
Los Angeles, California

Date:
December 2014

Project Number:
048505K Phase K06



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1 Introduction, Background, Purpose

This is a companion to the evaluation of near-zero nitrogen oxide (NOx) emission ("NZE") natural gas ("NG") trucks, also referred to as advanced NG trucks. ENVIRON has been evaluating the effectiveness of trucking sector financial incentives on the adoption rate of advanced natural gas engine technologies that can achieve a NOx emission rate of 0.02 g/bhp-hr, which is 90% lower than the current, most stringent on-road truck emission standards. The geographic boundary of this analysis is the South Coast Air Basin ("Basin"). These results are a part of a larger effort to examine near-zero NOx natural gas opportunities in the entire mobile source inventory.

The US Environmental Protection Agency ("USEPA") requires the Basin to meet the 80 ppb ozone National Ambient Air Quality Standard (NAAQS) by 2023, which requires NOx emissions to be reduced below 115 tons/day. Current air quality regulations are predicted to bring NOx emissions down to just under 330 tons/day in that timeframe; thus, NOx emissions must be reduced approximately 65% beyond current regulations. Furthermore, EPA adoption of the more stringent 75 ppb ozone NAAQS requires that the Basin bring NOx emissions below 80 tons/day by 2032, or 75% beyond 2023 levels given current regulations. Seventy-eight percent of NOx emissions in the Basin are mobile sources of which 21% are heavy-duty trucks.

This analysis is based upon a pure economic justification for the adoption of natural gas technologies in the heavy-duty trucking sector through the use of the Future of Transportation Fuels economic decision model published by the National Petroleum Council in 2012 ("FTF Model"). The analysis segments heavy-duty (HD) trucks by gross vehicle weight rating categories (Light HD (14,000 – 26,000 lbs), Medium HD (26,000 lbs – 33,000 lbs) and Heavy HD (>33,000 lbs)). Two scenarios were modeled, "SoCalGasRef," a reference case that predicts the likely, natural, adoption of natural gas as a fuel in this sector, and "SoCalGasHigh," a maximum case which predicts the most aggressive adoption rate of natural gas technologies. Differences between these scenarios are described in the next section.

Finally, financial incentives are applied to each of the modeling cases. Incentives are applied in two tiers. The first tier incentives are designed to boost the adoption rate of conventional natural gas technologies, which from a regulatory perspective, have the same emissions as conventional diesel technologies. Second-tier financial incentives are designed to change the purchase of a conventional natural gas technology truck to an advanced, NZE natural gas truck. The first tier incentives and second-tier incentives were applied together in both the SoCalGasRef and the SoCalGasHigh incentive cases.

The analysis results presented include the truck fleet population impacts, NOx emission benefits, total financial incentive program cost and programmatic cost-effectiveness.

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2 Economic Modeling

The Heavy-Duty Truck component of the FTF Model predicts the rate at which various fuel technologies will be adopted by the trucking industry between now and 2050. The model predicts the percentage of conventional truck sales (diesel/gasoline) vs. the alternative fuel (natural gas in this case) on an annual basis. These percentage sales values are then applied to vehicle populations predicted by the California Air Resources Board’s (CARB) motor vehicle emission model, EMFAC 2011. Basic assumptions of the modeling runs include the following:

- The model assumes NG truck sales begin in 2007 and run through 2050;
- The approximate incremental cost of an NG truck over diesel starts at \$65k in 2015 and drops to \$47k in 2023;
- Three market adoption curves choices are, "conservative," "moderate" and "aggressive," which are based on an American Trucking Association (ATA) owner survey regarding tolerance to payback for investment. The aggressive curve is closely aligned with the actual ATA survey respondent preferences on payback;
- The consumer begins with a preference towards diesel, but by 2050 is indifferent between diesel and natural gas (preference factor); and
- Fuel prices are based on EIA Annual Energy Outlook 2010 Reference case x 150%; the FTF Model relies on the EIA Annual Energy Outlook, without adjustment.

The incremental cost of alternative fuel technologies is one of the most influential factors on the model results. The vehicle price assumptions used in this analysis are presented in Table 1.

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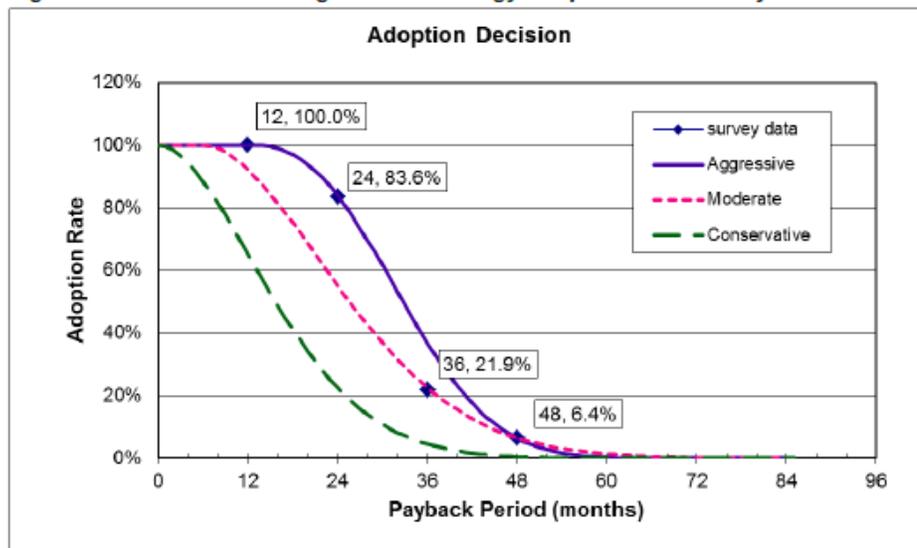
Table 1. SoCalGas FTF Model runs technology pricing assumptions, diesel base cost & incremental natural gas truck incremental price above diesel.

Truck Group	2023 Base Diesel Vehicle Cost	NG Incremental Price in 2023	
		SoCalGas Reference	SoCalGas High
Heavy HD Combination	\$144,953	\$47,355	\$30,028
Heavy HD Single	\$ 190,399	\$18,906	\$7,463
Drayage	\$144,953	\$34,604	\$18,399
Refuse	\$190,399	\$18,906	\$7,463
Light & Medium HD	\$61,529	\$21,165	\$15,682

Another variable that was adjusted to develop the SoCalGasRef and SoCalGasHigh penetration curves is the NGV Adoption Curve. The technology adoption curves make up the core of the FTF Model and are based on surveys of American Trucking Association (ATA) members regarding their purchasing behaviors and various economic scenarios including fuel pricing and

expected return on investment in these alternative fuel technologies. The survey results were then compiled into adoption curves that indicate the rate at which alternative fuel technologies compete with diesel and gasoline. The FTF Model has three settings for these, “aggressive,” “moderate” and “conservative.”¹ Note that the aggressive curve is based on the actual ATA survey results, therefore the Moderate and Conservative curves are somewhat more conservative than the actual ATA survey responses. The SoCalGasHigh case is based on the Aggressive NGV adoption curve (the real world survey results of the trucking industry), therefore the SoCalGasRef case, based on the Moderate Adoption Curve, is more conservative than the real world survey results of the trucking industry.

Figure 1: Incentives Modeling NGV Technology Adoption Curves– Payback Period.



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The model also has a “Preference Factor” variable that is indicative of the market’s preference for conventional fuels (diesel/gasoline) against the alternative fuel, in this case, natural gas. The scenarios modeled in this exercise assume that truck purchasers are initially wholly biased towards conventional fuels (i.e., 100% bias to conventional, 0% bias to natural gas), but by the end year of the scenario (2050), are indifferent to conventional fuels over natural gas (i.e., 50% bias to conventional fuel, 50% bias to natural gas). These settings allow 100% penetration of natural gas truck sales into the market under the proper conditions. This differs from the FTF Model default settings, which artificially limit the maximum market penetration of natural gas to

¹ The “aggressive” setting is indicative of a fleet consumer that has a higher tolerance to longer payback (50% of respondents indicated that they would accept a 33 month payback of the additional cost of the Natural Gas fueled truck due to fuel cost savings). The “moderate” setting consumer would accept a shorter payback period than the aggressive setting (28 months) and the “conservative” setting consumer would expect a still shorter payback period (16 months).-

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50% of new sales by setting the "preference factor" such that there is always a bias against NG Trucks.

Specific to fuel pricing, both the SoCalGasRef and SoCalGasHigh modeling scenarios assume that natural gas fuel pricing is 1.5x the Energy Information Administration's (EIA) Annual Energy Outlook (AEO) 2010 natural gas pricing. Natural gas fuel price forecasts are scaled due to the relatively low NG pump price assumed in AEO2010 and are an effort to provide pump prices that are more representative of current (2013) average pricing. The FTF Model default fuel price projection is based directly on AEO2010 data, which are likely based on fueling information for a fleet that involved a greater percentage of transit bus, refuse, and other large, time-fill station applications. As more fleets adopt natural gas, it is predicted that more fuel will be dispensed through smaller stations, fast-fill stations, and/or in a retail setting, contributing to a higher dispensed price than the AEO2010 projections.

2.1 NOx NZE Natural Gas Engine Technologies

This analysis is predicated on the assumption that natural gas engine technologies capable of achieving NOx emission rates at a 0.02 g NOx/bhphr certification level in the 8.9L and 15L sizes are commercially available in 2018. This is based on feedback from the natural gas engine manufacturer, Cummins Westport.

2.2 NOx & Greenhouse Gas (GHG) Emission Modeling

The FTF model output of percent new vehicle sales based on model year and fuel type are apportioned to the CARB EMFAC 2011 emission model fleet population. Information on vehicles miles travelled (VMT) by truck type (e.g., light-, medium-, and heavy-heavy duty truck) and truck usage (e.g., drayage, construction, refuse collection, utility service, etc.) is included in EMFAC 2011. Those sectors/truck types with the highest VMT per truck would maximize potential NOx emission reductions per truck using advanced technology NZE engines, increasing the effectiveness of financial incentives for such trucks/trucking sectors.

This analysis makes a blanket assumption that conventional natural gas engines certified to a 0.2 g/bhphr NOx standard will be commercially available in 2015, and starting in 2018, NZE natural gas engines certified to a 0.02 g/bhphr NOx emission standard are made commercially available. Emissions are quantified by vehicle size and type and then summed to provide a total Basin NOx impact. The difference between the default EMFAC emission prediction and SoCalGasRef and SoCalGasHigh NZE natural gas scenarios represent the modeled NOx reductions.

GHG emissions are modeled by application of CARB's GHG natural gas potency factor to the predicted volume of natural gas consumed. Natural gas fuel consumption is calculated from the volume of gasoline and diesel fuel displaced and application of an efficiency loss factor.

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3 Financial Incentives Scenarios

The two scenarios modeled are SoCalGas Reference and SoCalGas High.

- SoCalGas Reference assumes: (1) a high price differential between NGV and Diesel Trucks; and (2) uses the conservative NGV adoption curve;
- SoCalGas High assumes: (1) a low price differential between NGV and Diesel Trucks; and (2) uses the aggressive NGV adoption curve

Each of these two scenarios are presented as a base case ("Base Case"), representing the modeled, natural adoption rate of NG technologies given the economic market conditions assumed, and a financial incentive scenario case ("Incentive Case") where incentive funding is offered to encourage the adoption of NZE natural gas technologies. For the Incentive Case runs, financial incentives are applied in two levels; Incentive 1 encourages additional natural gas technology adoption by depressing the cost of natural gas technology engine and Incentive 2 is applied to convert all conventional natural gas truck sales to near zero natural gas technology, which is defined as 0.02 g NO_x/bhp-hr.

- Financial Incentive 1 to accelerate conventional NG truck adoption²
 - \$25,000 for Class 8 Truck Tractors and Class 8 Drayage Trucks
 - \$15,000 for Class 4 through 8 Straight and Solid Waste Collection Trucks (\$7,500 in the high penetration rate case)
- Financial Incentives 2 to influence NZE natural gas technology adoption (0.02 g/bhp-hr NZE NG truck technology vs. 0.2 g/bhp-hr conventional NG truck technology)³
 - \$10,000 for Class 8 Tractors
 - \$8,000 for Class 4 – 8 Straight Trucks

The financial incentives are assumed to be direct grants to qualifying vehicle purchasers. More sophisticated forms of incentives that have been used in the past were not investigated. It is likely that other incentive programs can be used which will result in equal or greater penetration, at lower total costs. A partnership among appropriate government agencies and others with more experience in these types of programs is recommended for vetting these issues.

3.1 SoCalGas Reference Scenario Results

The results of the SoCalGas Reference scenario runs are presented in Figures 2, 3, and 4. Figure 2 is the SoCalGas Reference Base Case. The area chart is a representation of the total

² The \$25,000 and \$15,000 incentives were based on estimated 2015 price differentials discussed in Section 2. For example, the larger trucks have a \$65k price differential in 2015. Program incentives can be refined based on updated price information for vehicles and the incentive program objectives.

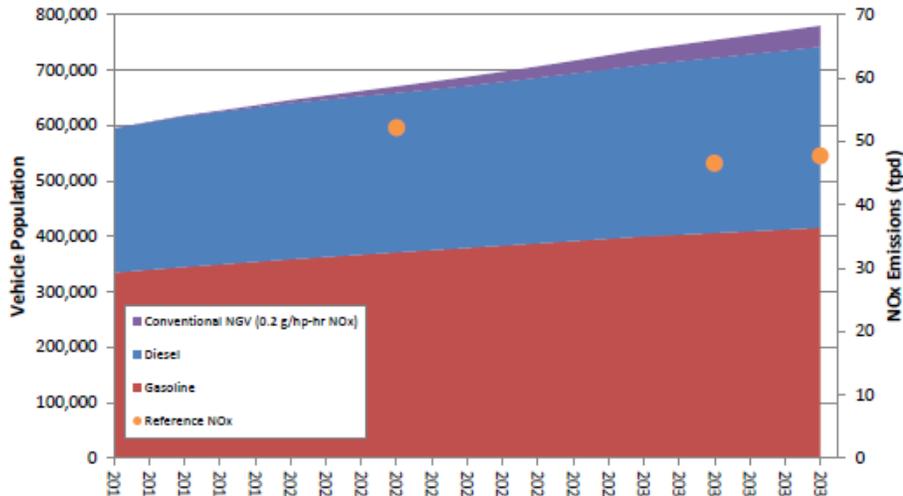
³ The \$8,000 - \$10,000 price estimates for "financial incentive 2" were based on the original cost indicated by a natural gas engine manufacturer however the same manufacturer revised this cost estimate to \$4,000 - \$5,000 in more recent, subsequent discussions. These more recent updated values for financial incentive 2 were not modeled.

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population of heavy-duty trucks registered in the South Coast Air Basin, predicted in the years 2015 – 2035, stratified by fuel type (gasoline-red, diesel-blue and natural gas-purple) and is

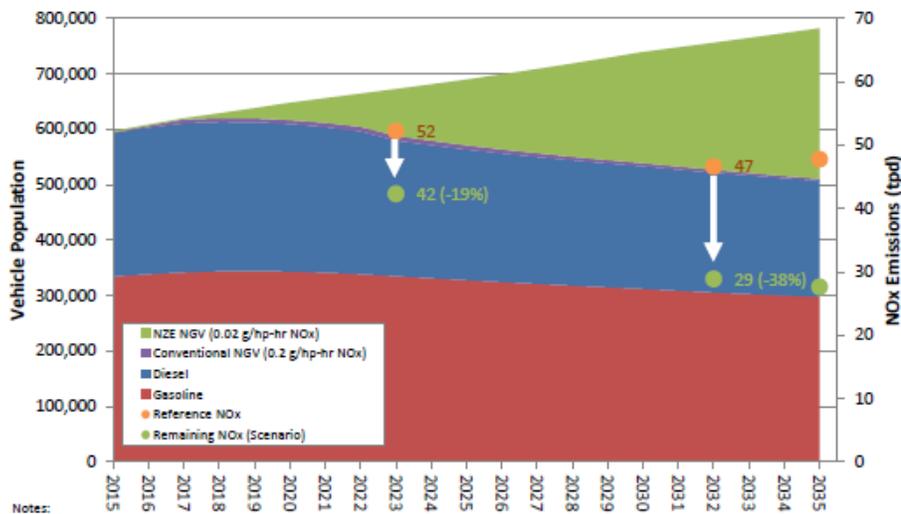
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Figure 2: SoCalGas Reference- Base Case Scenario.



Note:
 1. Analysis includes T7 Drayage, T7 Single, T7 Solid Waste Collection Vehicle, T7 Tractor, T7 Tractor Construction, T7 Agriculture, T7 Single Construction, T7 Public, T7 Utility, T7 IS, T6 Instate Heavy, T6 Instate Small, T6 Utility, T6 Public, T6 TS, T6 Agriculture, T6 Instate Construction Heavy, T6 Instate Construction Small, LHDDT, and LHDGT.
 2. Vehicle population is based on the EMFAC2011 data for the South Coast Air Basin.
 3. Reference NOx emissions were obtained from the 2012 Air Quality Management Plan (AQMP) from the SCAQMD.

Figure 3: SoCalGas Reference Incentive Case.



Note:
 1. Analysis includes T7 Drayage, T7 Single, T7 Solid Waste Collection Vehicle, T7 Tractor, T7 Tractor Construction, T7 Agriculture, T7 Single Construction, T7 Public, T7 Utility, T7 IS, T6 Instate Heavy, T6 Instate Small, T6 Utility, T6 Public, T6 TS, T6 Agriculture, T6 Instate Construction Heavy, T6 Instate Construction Small, LHDDT, and LHDGT.
 2. Maximum incentives range from \$23,000 - \$35,000/Truck depending on the vehicle type and engine size.
 3. Assumed penetration rates after the incentive period ends remain at the 2023 level due to some mechanism.

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associated with the primary y-axis (to the left). No incentive is applied in Figure 2. The three orange dots represent daily NOx emissions associated with the fleet population in the year indicated (2023, 2032 and 2035) and are associated with the second y-axis (to the right). These NOx emission values are the reference against which all scenarios are compared.

This case assumes three differences from the Reference Base Case:

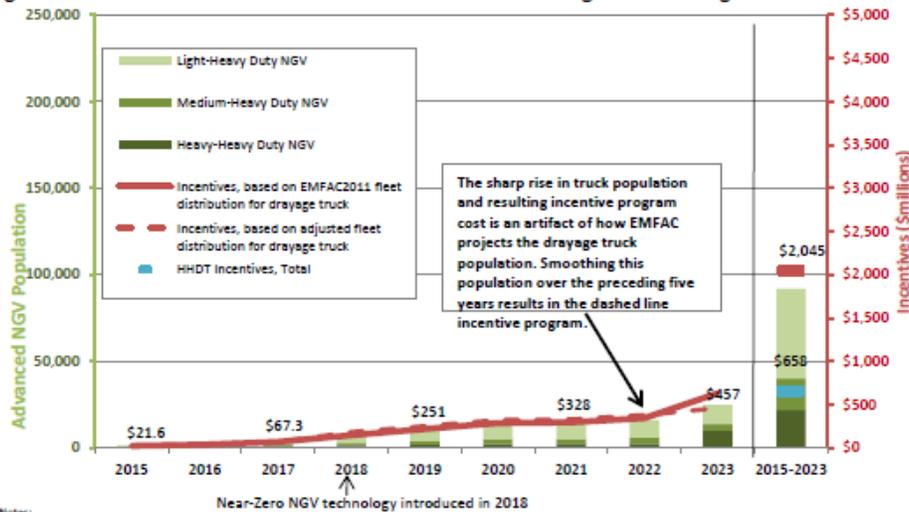
1. A financial incentive for conventional (0.20 g NOx/bhp-hr) natural gas trucks is introduced in 2015 through 2023;
2. A financial incentive for the adoption of NZE NOx technology (0.02 g NOx/bhp-hr) is introduced starting in 2018 through 2023; and
3. A mechanism, yet to be defined, is introduced starting in 2023 to maintain the adoption rate of NZE NOx technology at 2023 levels.

The purple portion of the area chart represent the population of conventional natural gas vehicles introduced in period from 2015 – 2018. The green portion represents NZE natural gas vehicles introduced in the period from 2018 – 2035. The green dots represent the NOx emissions of the total fleet in the years indicated, and the orange dots represent the reference NOx emissions of the SoCalGas Reference Base Case (transcribed from Figure 2).

The incentive program yields daily NOx reductions of 19% and 38% in 2023 and 2032, respectively, at an incentive program cost of \$2.05 billion. It is noted that a majority of these NOx reductions come from the heavy heavy-duty truck segment of the market at a cost of \$660 million (Figure 4).

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Figure 4: SoCalGas Reference Scenarios- Incentive Program Funding.



Notes:
 1. Represents the funding needed to incentivize purchase of the new near-zero NG vehicle each year that would otherwise have been diesel if no incentives provided.
 2. Analysis includes T7 Drayage, T7 Single, T7 Solid Waste Collection Vehicle, T7 Tractor, T7 Tractor Construction, T7 Agriculture, T7 Single Construction, T7 Public, T7 Utility, T7 IS, T6 Instate Heavy, T6 Instate Small, T6 Utility, T6 Public, T6 TS, T6 Agriculture, T6 Instate Construction Heavy, T6 Instate Construction Small, LHDDT, and LHDDGT.
 3. The last bars show the cumulative advanced NGV population and the total incentive dollars required during 2015 - 2023 under NPC high penetration scenario.
 4. The NGV new sales projection was derived from the NPC model based on the high adoption assumptions and the natural gas price at 1.5 times EIA 2010 forecast.

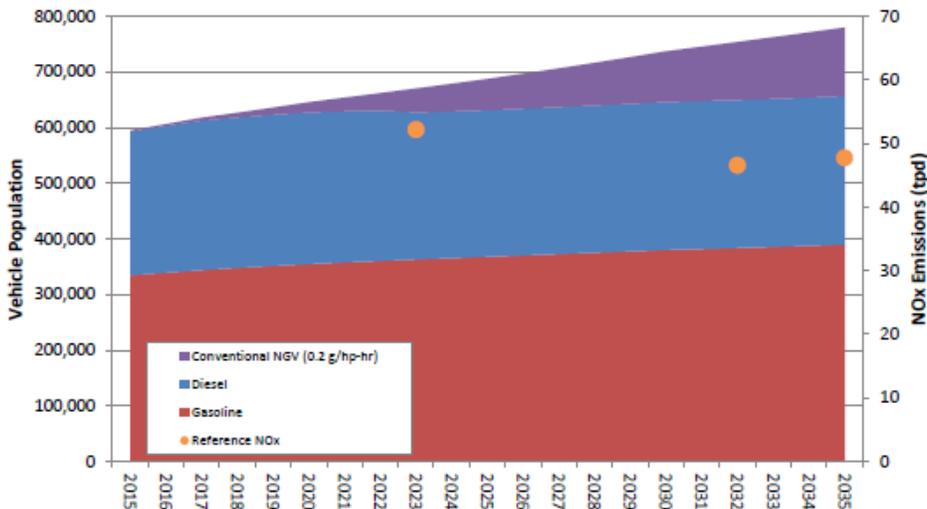
3.2 SoCalGas High Scenario Results

The results of the SoCalGas High scenario runs are presented in Figures 5, 6 and 7. The High Base Case scenario, Figure 5, shows significantly higher adoption rates of natural gas truck technologies (purple) than the Reference Base Case (Figure 2). However predicted NOx emissions are identical to those of the Reference Base Case as conventional natural gas engines are certified to the same emission rate as a comparable diesel or gasoline engine.

Figure 6 is the SoCalGas High Incentive Case. This case makes very similar financial incentive assumptions as the Reference Incentive Case, although the actual truck incentive funding amounts have been adjusted based on the higher underlying adoption rate of natural gas trucks. The purple portions of the area chart represent the population of conventional natural gas vehicles introduced in period from 2015 – 2018. The green portion represents NZE natural gas vehicles introduced in the period from 2018– 2035. The green dots represent the NOx emissions of the total fleet in the years indicated, and the orange dots represent the reference NOx emissions of the SoCalGas Reference Base Case (transcribed from Figure 5). The incentive program yields daily NOx reductions of 33% and 63% in 2023 and 2032, respectively, at an incentive program cost of \$4.3 billion. It is noted that a majority of these NOx reductions (9.6 tpd out of 17 tpd) come from the heavy heavy-duty truck segment of the market at a cost of \$885 million (Figure 7).

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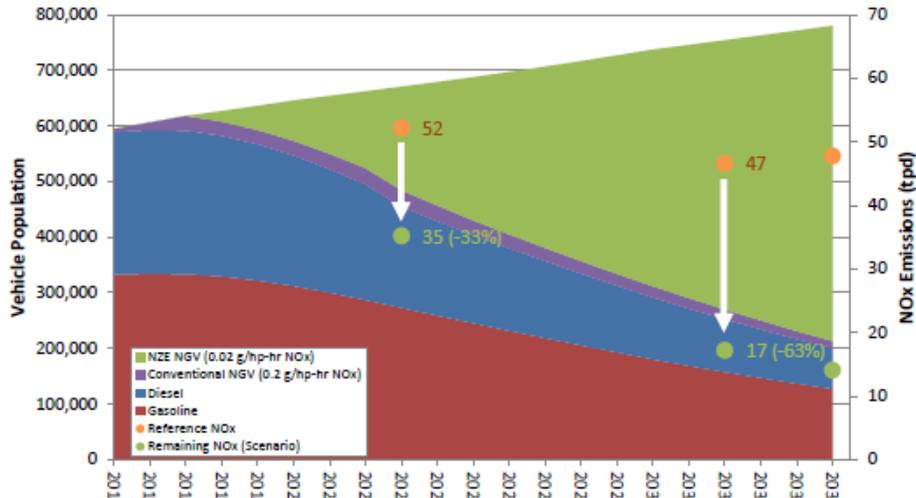
Figure 5: SoCalGas High- Base Case Scenario.



Notes:
 1. Analysis includes T7 Drayage, T7 Single, T7 Solid Waste Collection Vehicle, T7 Tractor, T7 Tractor Construction, T7 Agriculture, T7 Single Construction, T7 Public, T7 Utility, T7 IS, T6 Instate Heavy, T6 Instate Small, T6 Utility, T6 Public, T6 TS, T6 Agriculture, T6 Instate Construction Heavy, T6 Instate Construction Small, LHDDT, and LHDGT.
 2. Vehicle population is based on the EMFAC2011 data for the South Coast Air Basin.
 3. Reference NOx emissions were obtained from the 2012 Air Quality Management Plan (AQMP) from the SCAQMD.

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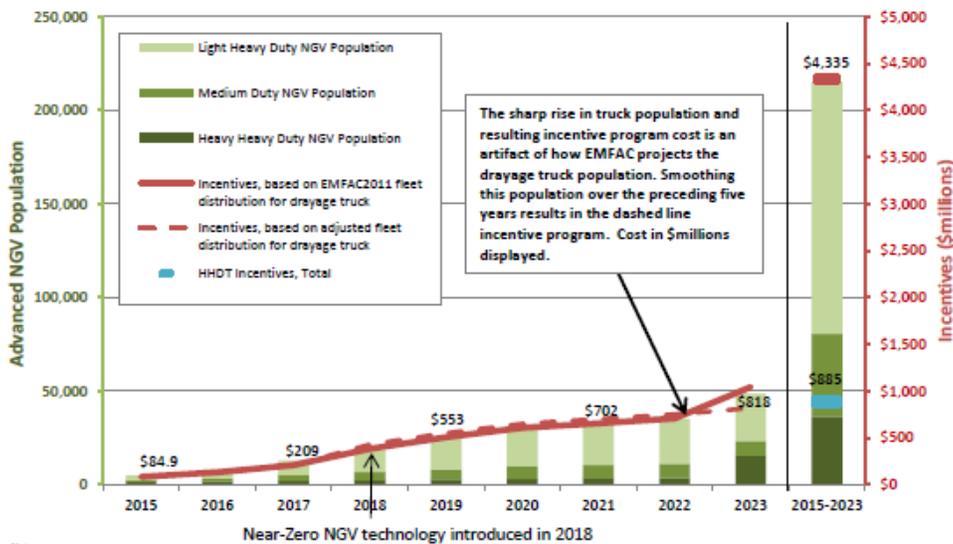
Figure 6: SoCalGas High-Incentive Case Scenario.



- Note:
1. Analysis includes T7 Drayage, T7 Single, T7 Solid Waste Collection Vehicle, T7 Tractor, T7 Tractor Construction, T7 Agriculture, T7 Single Construction, T7 Public, T7 Utility, T7 IS, T6 Instate Heavy, T6 Instate Small, T6 Utility, T6 Public, T6 TS, T6 Agriculture, T6 Instate Construction Heavy, T6 Instate Construction Small, LHDDT, and LHDGT.
 2. Maximum incentives range from \$15,500 - \$35,000/Truck depending on the vehicle type and engine size.
 3. Assumed penetration rates after the incentive period ends remain at the 2023 level due to some mechanism.

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Figure 7: SoCalGas High-Incentive Program Funding.



- Notes:
1. Represents the funding needed to incentivize purchase of the new near-zero NG vehicle each year that would otherwise have been diesel or gas if no incentives provided.
 2. Analysis includes T7 Drayage, T7 Single, T7 Solid Waste Collection Vehicle, T7 Tractor, T7 Tractor Construction, T7 Agriculture, T7 Single Construction, T7 Public, T7 Utility, T7 IS, T6 Instate Heavy, T6 Instate Small, T6 Utility, T6 Public, T6 TS, T6 Agriculture, T6 Instate Construction Heavy, T6 Instate Construction Small, LHDDT, and LHDGT.
 3. The last bars show the cumulative advanced NGV population and the total incentive dollars required during 2015 - 2023 under NPC high penetration scenario
 4. The NGV new sales projection was derived from the NPC model based on the high adoption assumptions and the natural gas price at 1.5 times EIA 2010 forecast.

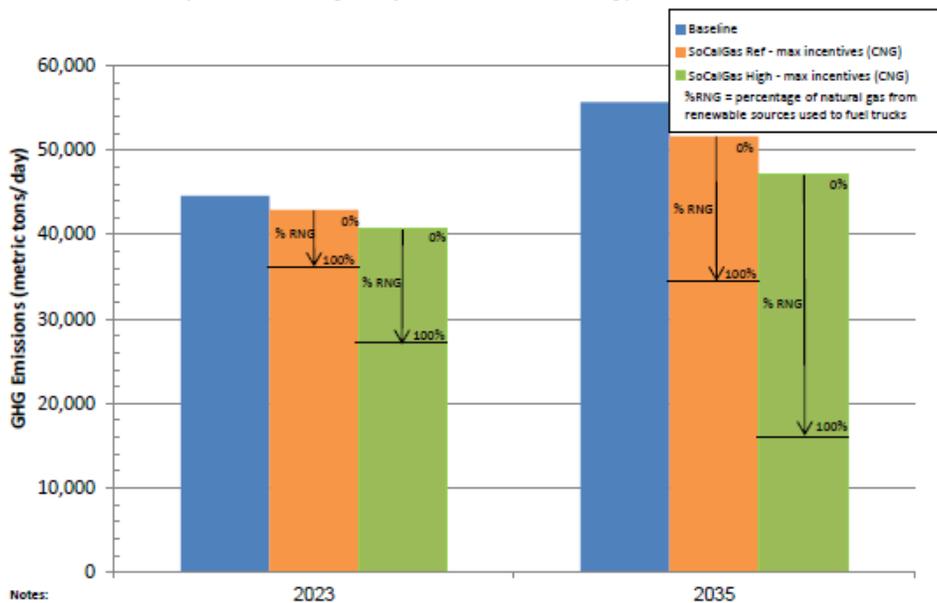
3.3 Cumulative Incentive Costs Compared to 2023 Emission Reductions

The cumulative cost of the incentives can be compared to the reductions that result from the incentives. The 2023 NOx reductions are compared to the cumulative cost of the incentives for each type of heavy-duty truck (light, medium, and heavy) for the SoCalGas High, maximum incentives scenario. The cumulative cost of the incentives for all heavy-duty trucks is \$4,335M, resulting in a NOx reduction in 2023 of 17 tons/day. Over half of the 2023 NOx reductions (9.6 tons/day) result from only \$885M (or 20%) of the cumulative cost of the incentives, for incentives given to heavy-heavy duty trucks only. Additional reductions can only be achieved at a much higher cumulative cost for incentives given to light- and medium-duty trucks per ton /day of NOx reduced (7.3 tons/day of NOx reductions in 2023 for a cumulative cost of \$3,450M).

3.4 Greenhouse Gas Emissions Analysis

Lastly, the greenhouse gas (GHG) reductions for the maximum incentives scenario were analyzed. In Figure 9, the 2023 and 2035 GHG emission reductions are compared to the baseline emissions for each year. All SoCalGas maximum incentives scenarios show a decrease in GHG emissions compared to the current baseline of conventional diesel and gasoline in-state trucks. The results for each SoCalGas scenario include a range of GHG reductions that could further occur if natural gas from renewable sources (such as renewable natural gas from biomass or RNG) displaced fossil-fuel NG.

Figure 8: Greenhouse Gas Emission Reduction Analysis for In-State Trucks in the South Coast Air Basin (uses currently adopted climate intensity).



Notes:
 1.Cl for diesel is 98.09 gCO₂e/MJ.
 2.Cl for gasoline is 98.83 gCO₂e/MJ.
 3.Cl for renewable NG is 11.26 gCO₂e/MJ based on landfill gas.
 4.Cl for CA pipeline CNG is 67.7 gCO₂e/MJ.
 5.Conventional natural gas assumes a fuel efficiency decrease of 10% when compared to diesel and equivalent fuel efficiency to gasoline.
 6.Near zero natural gas assumes a fuel efficiency decrease of 15% when compared to diesel and a fuel efficiency decrease of 5% when compared to gasoline.

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Appendix 8

Chapter 10: Climate and Energy

I. Summary

In September 2011, the SCAQMD Governing Board adopted the “Air Quality-Related Energy Policy.” The policy promoted zero and near-zero emission technologies through ultra clean energy strategies to meet air quality, energy security, and climate change objectives. Pursuant to the Policy, SCAQMD staff is required to prepare an update of energy usage within the District in each AQMP. Chapter 10 of the Draft 2016 AQMP addresses this obligation and focuses on:

- Climate change and the relationship to the AQMP;
- Regional energy and fuel information;
- Grid collaboration, renewable generation, demand response, energy efficiency and energy storage issues related to “Moving Towards 100 Percent Renewable Power;” and
- Transformation of the energy sector in the future in Southern California.

II. Comments

SoCalGas supports SCAQMD’s efforts to address climate change co-benefits and proactively plan for a sustainable energy future. We offer the following comments to clarify and supplement the discussion in Chapter 10.

A. Methane’s Role as a Precursor to Ozone

Chapter 10 discusses methane’s contributions to tropospheric ozone and the interactions between climate and criteria pollutants in the atmosphere:

These interactions often worsen the impacts from greenhouse gases and increase background levels of criteria pollutants. While methane persists in the atmosphere for 10 to 14 years, its atmospheric lifetime is impacted by criteria pollutants (Prather, 2007). As methane reacts within the atmosphere, it acts like a VOC and increases background tropospheric ozone levels. Over the past 12 years, global methane emissions have increased over 30 percent, which also increased background levels of tropospheric ozone (Turner, 2016). Increasing background tropospheric ozone makes achieving air quality standards more difficult. Lastly, tropospheric ozone is also one of the strongest and significant short lived climate pollutants (Intergovernmental Panel on Climate Change [IPCC] AR5, 2013).¹

It has been known since the 1970s that methane is an ozone precursor. However, its conversion to ozone formation at the scale of an area like the South Coast Basin is limited by methane’s low reactivity. California State Implementation Plans (SIPs) have emphasized control of NOx and VOCs to address ozone. The definition of VOC has always excluded methane, because of its extremely low reactivity. Accordingly, throughout the history of California SIPs and AQMPs, we have known that local control of methane emissions will not contribute to attainment of ozone national ambient air quality standards (NAAQS) in the non-attainment area of origin.

¹ Draft 2016 AQMP, Chapter 10, p. 10-2.

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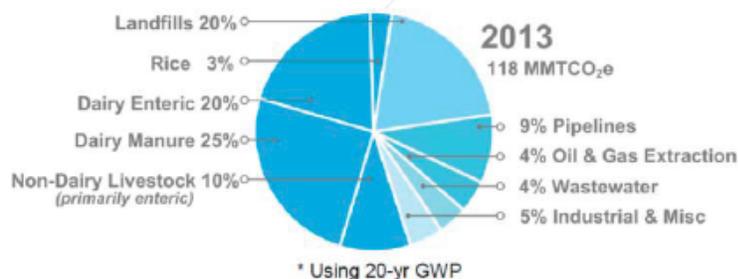
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For methane to form ozone it must first react in the atmosphere, but methane reacts extremely slowly. For illustration, methane that is emitted in Los Angeles, travelling across the U.S. under prevailing 15 mile per hour winds, would reach the Atlantic Ocean after 10 days, during which time less than one percent could react in the atmosphere. The significance is that there is virtually no ozone formation in the originating air basin, and less than one percent of the ozone forming potential of the emitted methane could even be realized before the emissions leave the U.S. to become part of the global background inventory.² It has been calculated that even if California eliminated its methane emissions, the greatest potential benefit would be less than 0.02 ppb, and that change would be across the globe and negligible in any U.S. nonattainment area.³

Because of the low reactivity of methane in the atmosphere, the traditional way of attaining ozone standards (i.e. controlling sources of emissions in the air basin) is not applicable to methane emissions. EPA has begun a serious investigation of the role of methane in global background ozone formation. But, we do not have to wait on EPA. Programs such as EPA's Natural Gas Star, of which SoCalGas was a founding participant, have already been very successful in reducing methane from the natural gas sector. And, ARB's Short Lived Climate Pollutant Plan, which SoCalGas also supports, lays out how to proceed to control methane from a climate change perspective.

Further, it is important to note that approximately 80 percent of California methane emissions are from forestry, agriculture, livestock, and waste, and that total California methane emissions are a small fraction (<0.5%) of global methane emissions (over 20,000 MMTCO₂e in 2010 (and growing), using the same 20-year global warming potential of 72).⁴

Figure 1. California 2013 Methane Emission Sources⁵



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² Crutzen, Paul J. "Photochemical reactions initiated by and influencing ozone in unpolluted tropospheric air." *Tellus* 26, no. 1-2 (1974), pp. 47-57;

Crutzen, Paul J. "My life with O₃, NO_x, and other YZO_x compounds (Nobel lecture)." *Angewandte Chemie International Edition in English* 35, no. 16 (1996), pp. 1758-1777.

³ West, J. J. and Fiore, A. M., "Management of Tropospheric Ozone by Reducing Methane Emissions," *Environ. Sci. Technol.* (2005), pp. 4685-4691, DOI: 10.1021/es048629f

⁴ "Global Anthropogenic Emissions of Non-CO₂ Greenhouse Gases: 1990-2020," U.S. EPA, EPA Report 430-R-06-003 (June 2006), available at: <https://www.epa.gov/global-mitigation-non-co2-ghg-report/global-anthropogenic-emissions-non-co2-greenhouse-gases-1990>.

⁵ "Proposed Short-Lived Climate Pollutant Reduction Strategy," ARB (April 11, 2016), p. 58, available at: <http://www.arb.ca.gov/cc/shortlived/meetings/04112016/proposedstrategy.pdf>.

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B. Discussion About Advanced Energy Storage Technologies Should Consider the Role of Power-to-Gas

SoCalGas is actively pursuing research and development on the cost and readiness of Power-to-Gas in the South Coast Air Basin. Through a partnership with the National Fuel Cell Research Center at the University of California, Irvine, SoCalGas is investigating and testing the hydrogen blending necessary for commercial Power-to-Gas storage of excess wind and solar energy. Power-to-Gas has the potential to compliment the State’s aggressive Renewable Portfolio Standard goals by:

- Making solar more affordable and reliable,
- Accelerating the development of more renewables projects in the state,
- Reducing congestion (and the associated service disruptions) on our electric grid,
- Generating clean hydrogen for fuel cells and alternative fuels, and
- Producing renewable biogas for use for heating homes, cooking and transportation.

Moreover, Power-to-Gas has been successfully developed and commercialized in Europe, with over 30 projects launched to date. For example, the first Power-to-Gas plant was installed in Falkenhagen, Germany in 2013 and successfully injects hydrogen into the natural gas grid. Another plant in Stuttgart, Germany utilizes waste carbon dioxide from a biogas plant, produces hydrogen from water with a PEM electrolyzer, and injects methane into the pipeline system. This technology is a reality and holds tremendous potential for California.

Power-to-Gas also has benefits in addition to being an “alternative to curtailing excess renewable power,” that are not mentioned in Chapter 10.⁶ Power-to-Gas technologies allow for longer charge and discharge capacities compared to batteries. Conceptually, producing synthetic natural gas from electricity and then storing it on the pipeline or underground could allow for much larger amounts of energy storage than any battery system. In addition, using the natural gas pipeline system, stored energy can be moved more easily to where it is needed (vs. electricity which would be trapped in stationary batteries). Finally, Power-to-Gas also offers ancillary services. Electrolyzers and fuels cells have excellent response to electrical load changes and can provide support to the electrical grid.

C. Growing the Renewable Natural Gas Industry

i. Additional Sources of Renewable Natural Gas Feedstock

SoCalGas appreciates the discussion of biogas in Chapter 10. We would like to note that there are some additional sources of biogas worth adding to the AQMP, particularly in light of the California mandates to divert organics from landfills:

- Source Separated Organics (SSO) – These can include residential food waste and yard waste (e.g. grass clippings) that can be converted to biogas in a digester or through gasification.
- Municipal Solid Waste (MSW) – There are project developers working to separate the organic fraction from MSW and converting that fraction to gas.

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⁶Draft 2016 AQMP, Chapter 10, p. 10-24.

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- Food producers/distributors/retailers – The entire food supply chain is looking for ways to divert their organic wastes (fruit peels, unsold product, bruised tomatoes, etc.) from landfills.

Los Angeles County alone produced 21 million tons of solids waste in 2012, of which 32 percent was organic. So, the potential for biogas production is quite large. SCAQMD is exploring opportunities to promote the injection of biogas into the pipeline, and we support these efforts as they will provide pathways for the most efficient, beneficial use of the waste gas.

ii. Helping Grow the Renewable Fuels Industry

The policies being pursued in this AQMP as well as in ARB's Mobile Source Strategy can result in significant growth in both the renewable natural gas (RNG) industry and in the renewable diesel industry. Both fuel types offer GHG and NOx emissions reductions, and we urge policymakers to enact programs which will promote multiple choices for operators, with incentives appropriately aligned with performance in meeting emissions reduction goals. We recommend that the following points be considered when implementing renewable fuel policies:

- Renewable diesel has an important role in reducing GHG emissions and has also shown in testing that NOx emissions may be reduced when used as a replacement fuel in existing trucks, allowing the use of renewable diesel to be directly attributable to meeting the federal Clean Air Act criteria pollutant goals, as well as the State's climate change goals. (Note that ARB has committed to a reexamination of the earlier studies.)
- Near-zero emission natural gas trucks, when fueled with RNG, can also meet both the federal Clean Air Act attainment mandates, and help meet the State's climate change goals. For near-zero emission natural gas trucks, the dramatic 90 percent reduction in NOx emissions is the result of an advanced engine technology – which will deliver this emission reduction regardless of whether it is fueled with traditional natural gas, upgraded biogas, or RNG.
- ARB is currently requiring RNG use for all near-zero emission natural gas trucks under the incentive programs being proposed, a commendable and attainable goal under today's market conditions, which is consistent with the integrated planning approach for GHG and criteria pollutant reductions. Because of this linkage created by these incentive programs (i.e., near-zero emission natural gas trucks receiving incentives must use RNG) there will be significantly more demand for RNG production. As a result of these multiple requirements for near-zero emission trucks, more drastic air quality and environmental benefits will be achieved with this approach.
- ARB has also proposed a measure, "Low-Emission Diesel Requirement," to "require that diesel fuel providers sell steadily increasing volumes of low-emission diesel until it comprises 50 percent of total diesel sales by 2031."⁷ We seek parity in the renewable fuels thresholds and note the disconnect between requiring 100 percent RNG for near-zero emission natural gas trucks, but only 50 percent renewable diesel. Further, the ARB measure would intersect with the existing proposed ARB measures for NOx emission reductions from near-zero emission natural gas trucks using RNG by establishing a state

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⁷ "Mobile Source Strategy," California Air Resources Board (May 2016), p. 153, available at: <http://www.arb.ca.gov/planning/sip/2016sip/2016mobsr.pdf>.

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policy that could significantly bias the growth of the biofuels industry, essentially limiting innovation in the alternative fuels markets. As we all know, this industry needs support to grow, especially to reach production levels anticipated in these plans for both renewable diesel and RNG.

Because of this double emission reduction benefit (NOx and GHG) from both renewable diesel and RNG, policymakers should compare the varying outcomes of these policies and consider adopting incentives commensurate with the benefits achieved. There is a finite amount of investment funding available; therefore, it is critical to consider the implications of these policies on the growth and innovation of the nascent biofuels industry. SoCalGas urges SCAQMD and other policymakers to examine the respective renewable biofuels technology, costs, energy consumption, feedstock impacts, near and long term environmental benefits, and the impact on the direction of growth of the renewable fuels industry generally.

The Energy+Environmental Economics (E3) consulting firm has performed studies that evaluate some potential pathways to achieving the State's 2030 and 2050 environmental goals which can serve as a starting point for this examination. Last year E3 examined the impact of supplementing an "Electrification" scenario, with a "Low Carbon Gas" option, in order to improve the State's ability to reach its 2030 GHG goals.⁸ We urge further consideration of the benefits of the low carbon gas scenario. E3 concluded that one of the critical differences between a 100 percent electrification compliance scenario and a scenario that includes a Low Carbon Gas option would be the choice of allocating biomass feedstock to the production of alternative fuels – namely bio and renewable diesel, and RNG. Fortunately, E3 also studied feedstock availability and found that less than 10 percent of the potential feedstock available nationally was necessary to produce the amount of RNG needed for their Low Carbon Gas option. However, due to the shared feedstock for the development of many biofuels, it is clear that it will be critically important to establish policies that do not unilaterally support the development of single biofuels in order to maintain cost-effective energy diversity and achieve our statewide environmental goals. Below is a table summarizing some of the results of the E3 study:

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⁸ "Decarbonizing Pipeline Gas to Help Meet California's Greenhouse Gas Reduction Goal," Energy+Environmental Economics (E3) (November 2014, released January 27, 2015) (available upon request).

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Table 1.

	2015	2030 CARB Mobile Source Strategy	2030 E3 Electrification	2030 E3 Low Carbon Gas
ZEVs ^{1/} (millions of vehicles)	0.1	5 - 7.3	9.3	9.3
CNG and LNG trucks and buses (millions of vehicles)	0.00003	0.400	0.037 ^{2/}	0.359
Biogas (% of total gas system demand)	0%	3 ^{3/}	2%	30% ^{4/}
Renewable Diesel (% of total diesel demand)	2% ^{2/}	55%	67% - 85%	3%
Statewide GHG Reduction (% Reduction from 1990 Levels)	2%	40%	40%	40%

1/ Includes BEVs, PHEVs, and FCVs
2/ Estimated renewable diesel share in 2013, based on reported LCFS compliance
3/ Almost all renewable fuels are liquids. Some renewable gaseous fuel, tied to incentive requirements
4/ E3 Electrification Scenario includes approximately 320,000 hybrid diesel trucks in the Alternative Fuel HD Sector
5/ RNG transportation demand as a percent of total system demand is approximately 17% in 2030, and is approximately 30% in 2050.

56-20
Cont

In addition, SoCalGas has also been examining the comparison in cost and energy use for producing various biofuels from this common feedstock, and should have additional data to inform this discussion shortly. We encourage SCAQMD as well as ARB, California Energy Commission, San Joaquin Valley Air Pollution Control District, and other stakeholders to consider potential outcomes of policies proposed in these plans on the growth and direction of the biofuels industry and the impacts on achieving our near- and long-term environmental goals.

As noted at the conclusion in Chapter 10, SCAQMD is looking to engage in conversations about the “schedule for infrastructure and technology needs.”⁹ SoCalGas looks forward to participating further in a biogas working group and partnering with the agency on future study and implementation of energy and transportation infrastructure initiatives.

⁹ Draft 2016 AQMP, Chapter 10, p. 10-29.



ATTACHMENT A

George I. Minter
Regional Vice President
External Affairs & Environmental Strategy
Southern California Gas Company
555 W. 5th Street
Los Angeles, CA 90013

June 14, 2016

The Honorable Gina McCarthy, Administrator
United States Environmental Protection Agency
William Jefferson Clinton Federal Building
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460
McCarthy.Gina@epa.gov

RE: Support of Petition to EPA for Rulemaking to Adopt Ultra-Low NO_x Exhaust Emission Standards for On-Road Heavy-Duty Trucks and Engines (dated June 3, 2016)

Dear Administrator McCarthy:

Southern California Gas Company (SoCalGas) submits this letter in support of the above-referenced Petition filed with EPA on June 3, 2016 by the South Coast Air Quality Management District (SCAQMD), *et al.* The attainment of the federal ozone standards is vitally important to those communities in which SoCalGas operates and provides natural gas service.

SCAQMD and the California Air Resources Board (CARB) have demonstrated that attainment of the 1997 and the 2008 8-hour ozone standards in the South Coast Air Basin will be unachievable without emissions reductions from a new, ultra-low heavy-duty engine exhaust emission standard for NO_x. In the South Coast Air Basin, 88 percent of regional NO_x emissions come from mobile sources within the basin, and on-road heavy-duty diesel trucks are the largest categorical contributor.¹ CARB's Mobile Source Strategy demonstrates that implementation of all current rules will reduce NO_x in the South Coast Air Basin by over 50 percent between 2015 and 2031, but that these reductions will not be sufficient to attain the ozone standards without a new federal, heavy-duty truck engine emission standard.²

As detailed in the Petition, a revised low NO_x standard of 0.02g/bhp-hr is technologically and commercially feasible. In 2015, Cummins Westport Inc. certified the world's first heavy-duty engine at near-zero emission levels—90 percent below the existing federal standard, and certified to meet ARB's lowest-tier optional low-NO_x emission standard. This "next generation" heavy-duty natural gas engine is now commercially available for transit bus, refuse, school bus, and medium-duty truck applications. Additional near-zero-emission heavy-duty natural gas engines are expected to follow by 2018, addressing a wider array of medium- and heavy-duty on-road applications.

¹ SCAQMD, "Petition to EPA for Rulemaking to Adopt Ultra-Low NO_x Exhaust Emission Standards for On-Road Heavy-Duty Trucks and Engines," (hereafter "Petition") p.12 (June 2016).

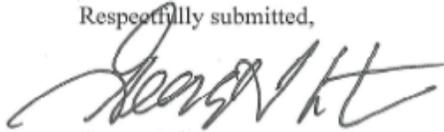
² CARB, "Mobile Source Strategy," p.22, 83 (May 2016).

The Honorable Gina McCarthy, Administrator
June 14, 2016
Page 2

The tailpipe emissions of heavy-duty vehicles running on these engines are as low as emissions associated with generating the electricity used to charge heavy-duty battery-electric vehicles with a state of the art generation plant. When paired with renewable natural gas, which provides the lowest carbon intensity of any transportation fuel available today, this technology has the added benefit of providing significant greenhouse gas emissions reductions (80 percent or greater).

SoCalGas supports federal leadership to implement an ultra-low heavy-duty engine emission standard for NOx in order to achieve the necessary emission reductions for the South Coast Air Basin to attain federal ozone standards.

Respectfully submitted,



George Minter
Regional Vice President, External Affairs and Environmental Strategy

cc: Christopher Grundler, Director, Office of Transportation and Air Quality, EPA
Grundler.christopher@epa.gov

Wayne Nastri, Acting Executive Officer, SCAQMD
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ATTACHMENT B



George I. Minter
Regional Vice President
External Affairs & Environmental Strategy
Southern California Gas Company
555 W. 5th Street
Los Angeles, CA 90013

August 5, 2016

The Honorable Gina McCarthy, Administrator
United States Environmental Protection Agency
William Jefferson Clinton Federal Building
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460
McCarthy.Gina@epa.gov

RE: Support of San Joaquin Valley Air Pollution Control District Petition to EPA for Rulemaking to Adopt Ultra-Low NOx Exhaust Emission Standards for On-Road Heavy-Duty Trucks and Engines (dated June 22, 2016)

Dear Administrator McCarthy:

Southern California Gas Company (SoCalGas) is one of Sempra Energy's California utilities regulated by the California Public Utilities Commission. Sempra Energy, based in San Diego, California is a Fortune 500 energy services holding company.

SoCalGas is the nation's largest natural gas distribution utility, delivering clean, safe and reliable energy to 21.6 million consumers in more than 500 communities across 20,000 square miles throughout central and southern California, from Visalia to the Mexican border.

SoCalGas' service territory is located in nine of California's air districts, including South Coast Air Quality Management District (SCAQMD) and San Joaquin Valley Air Pollution Control District (SJVAPCD), which are the only extreme ozone nonattainment areas in the United States. Both the SCAQMD and SJVAPCD air districts must reduce nitrous oxide (NOx) by more than 50% in order to attain ozone and particulate matter (PM_{2.5}) National Ambient Air Quality Standards promulgated by your agency.

SoCalGas submits this letter in support of the above-referenced SJVAPCD Petition filed with EPA on June 22, 2016. Attainment of the federal ozone and PM_{2.5} standards is vitally important to those communities in which SoCalGas operates and provides natural gas service.

The SJVAPCD and the California Air Resources Board (CARB) have demonstrated that attainment of the 2008 8-hour ozone standards will be unachievable without emissions reductions from a new, ultra-low heavy-duty engine exhaust emission standard for NOx. Over eighty five percent of regional NOx emissions in the SJVAPCD come from mobile sources within their air basin, and on-road heavy-heavy duty diesel trucks (HHDV) are the largest categorical contributor.¹

¹ SJVAPCD 2016 Ozone Plan for the 2008 8-Hour Ozone Standard, Appendix B – Emissions Inventory (June 2016), http://www.valleyair.org/Air_Quality_Plans/Ozone-Plan-2016/b.pdf

The Honorable Gina McCarthy, Administrator
August 5, 2016
Page 2 of 2

As detailed in the Petition, a revised low NO_x standard of 0.02 g/bhp-hr is technologically and commercially feasible. In 2015, Cummins Westport Inc. certified the world's first heavy-duty engine at near-zero emission levels—90 percent below the existing federal standard, and certified to meet ARB's lowest-tier optional low-NO_x emission standard. This "next generation" heavy-duty natural gas engine is now commercially available for transit bus, refuse, school bus, and medium-duty truck applications. Additional near-zero-emission heavy-duty natural gas engines are expected to follow by 2018, addressing a wider array of medium- and heavy-duty on-road applications.

The tailpipe emissions of heavy-duty vehicles running on these engines are as low as emissions associated with generating the electricity used to charge heavy-duty battery-electric vehicles with a state of the art generation plant. When paired with renewable natural gas, which provides the lowest carbon intensity of any transportation fuel available today, this technology has the added benefit of providing significant greenhouse gas emissions reductions (80 percent or greater).

SoCalGas supports federal leadership to implement an ultra-low heavy-duty engine emission standard for NO_x in order to achieve the necessary emission reductions for both the South Coast Air Basin and the SJVAPCD to attain federal ozone standards.

Respectfully submitted,



George Minter
Regional Vice President, External Affairs and Environmental Strategy

cc: Christopher Grundler, Director, Office of Transportation and Air Quality, EPA
Grundler.christopher@epa.gov

Seyed Sadredin, Air Pollution Control Officer, SJVAPCD,
Seyed.Sadredin@valleyair.org

Responses to Comment Letter from Southern California Gas Company (SoCalGas)
(Comment Letter 56)

Response to Comment 56-1:

SCAQMD staff appreciates the participation in the development of the 2016 AQMP and future participation in the implementation of the Plan strategies.

Response to Comment 56-2:

SCAQMD staff agrees that a robust mobile source strategy is critical as it has already been determined that the standards would still not be met if all stationary sources under the authority of the SCAQMD were reduced to zero. Please see Responses to Comments 30-5 and 54-2 regarding “fair share” reductions.

Response to Comment 56-3:

SCAQMD staff agrees that the fast approaching deadlines for the ozone standards will require cleaner technology that is available now so there are opportunities for near-zero technology to fulfill that need. In addition, incentives could help advance deployment of cleaner technology and assist in public acceptability. Staff modified the Plan objective to prioritize maximizing emission reductions utilizing zero-emission technologies when cost-effective and feasible and near-zero emission technologies in all other applications. Further, staff appreciates support for the incentive measures.

Response to Comment 56-4:

Staff appreciates the support for the incentive programs. Please see Response to Comment B-2 regarding the emissions inventory. Older, higher-emitting NOx equipment will be targeted by this control measure. The purpose of the incentive program is to create opportunities and make it more cost-effective to replace equipment, transition to zero or near-zero technologies, encourage earlier change-out of higher-emitting equipment, and drive technology development and cost reduction. Projects that are more cost-effective may be given priority compared to other projects with less NOx reductions and higher costs (larger incentives needed).

Response to Comment 56-5:

Staff agrees that along with the updated Plan objective discussed in Response to Comment 56-3, the incentives can assist in early deployment of advanced cleaner technologies particularly if the emission sources are smaller in size but cumulatively have an impact. The control measures referenced propose to incentivize currently available technology in the near-term and zero and near-zero cost-effective technologies in the future.

Response to Comment 56-6:

Existing programs are built into the future emission baseline projections. As SCAQMD develops and implements new incentive programs staff will work with the existing rebate program administrators to help end users leverage multiple programs. Please see Response to Comment 17-3 regarding fuel neutrality.

Response to Comment 56-7:

Chapter 10 has been updated in the Revised Draft Plan to expand the discussion on biogas and renewable natural gas. The 2016 AQMP also includes control measures CMB-03, which focuses on emissions reductions from non-refinery flares and CMB-01, which includes technologies for stationary sources, including possible incentives for biogas utilization as a transportation fuel or pipeline injection, if cost effective.

Response to Comment 56-8:

The SCAQMD staff believes that all fuels should be based on renewable fuel stocks to the greatest extent possible. As such, staff sees a need for renewable natural gas and renewable diesel. As pointed out in the State SIP Strategy and the 2012 Vision for Clean Air document, while a greater penetration of alternative fuels is envisioned out to 2050, diesel fuel trucks will remain a large contribution to the region's air quality problems due to the fact that many of these trucks are from out-of-state. SCAQMD staff will continue to work with CARB, CEC, U.S. EPA, and U.S. Department of Energy and the commenter in evaluating the cost and benefits of all biofuels.

Response to Comment 56-9:

Staff agrees that identifying revenue sources for incentive funding is critical. The draft Financial Incentive Funding Action Plan is being developed to identify existing funding sources and potential new sources of funding.

Response to Comment 56-10:

Staff shares the interest in local manufacturers developing low-emission equipment. SCAQMD cannot dictate such an action, but could consider this during the design of incentive programs. Staff encourages participation during the incentive program development to provide suggestions and support. Staff appreciates the support in Attachments A and B to this specific comment.

Response to Comment 56-11:

56-11A: Staff appreciates the support. Staff's intent is to incentivize the replacement of older and higher emitting equipment. Please see Response to Comment 71-1 regarding CMB-01 and the incentive criteria. Staff anticipates many facilities and stakeholders will come forth and participate in the incentive programs. Once a working group is established, it will help to determine the most cost-effective means for distribution of funds to achieve emission reductions.

56-11B: Staff has revised Table 1 in the emissions inventory for stationary internal combustion engines (ICEs). Please see Response to Comment 73-2 regarding the stationary ICEs inventory.

56-11C: Please see Responses to Comments 17-3 and 83-2 regarding fuel and technology neutrality. Please see Response to Comment 83-14G regarding combined heat and power (CHP).

56-11D: Staff appreciates the support. Once a working group is formed, retrofits that are cost effective and technologically feasible may be considered for incentives.

Response to Comment 56-12:

56-12A: Please see Response to Comment 83-15C, regarding Rule 1111 and commercial space heating equipment.

56-12B: Please see Response to Comment 17-3, regarding fuel neutrality. Staff appreciates the support.

Response to Comment 56-13:

56-13A: Staff appreciates the support and notes the information provided by the commenter.

56-13B: CMB-03 is a regulatory measure for non-refinery flares. The control measure will consist of cleaning the gas that would be typically flared and using it for transportation fuel or pipeline injection or directing it to equipment that can be converted to power and/or heat, if technologically feasible and cost-effective. If all other options are infeasible, the installation of newer flares implementing the best available control technology will be required. Incentive opportunities can be made available under CMB-01. A working group will be formed during rulemaking and the SCAQMD welcomes the commenter to participate.

Response to Comment 56-14:

Staff appreciates the support and will continue to work with the commenter on high-efficiency and low emission technologies. During rulemaking, a working group will be formed to discuss the technology in detail and staff welcomes all stakeholders to participate. Please see Response to Comment 83-17A regarding residential cooking units. Please see Responses to Comments 83-6 and 83-17B regarding the cost of the incentive programs.

Response to Comment 56-15:

56-15A: Please see Responses to Comments 83-6 and 83-18 regarding cost effectiveness. The initial cost assumption was based on similar assumptions as the CARB cost effectiveness estimate mentioned in the comment. However, the revised estimate is based on Optical Gas Imaging technology supplementing conventional LDAR and does not include the cost of implementing LDAR.

56-15B: Please see Response to Comment 83-18 regarding rule development and aligning requirements.

Response to Comment 56-16:

Staff notes the information provided by the commenter.

Response to Comment 56-17:

Staff appreciates the support. During rulemaking a working group will be formed and cost effectiveness will be considered.

Response to Comment 56-18:

SCAQMD staff appreciates the comments relative to proposed measures MOB-07 and MOB-08 and incentivizing near-zero emission technologies. As the commenter noted, there is currently an 8.9 liter natural gas engine that is 90 percent cleaner than the 2010 on-road heavy-duty engine emissions standard. The 11.9 liter natural gas engine that is 90 percent cleaner than the 2010 emissions standard is currently being prototyped with anticipated field demonstration in mid-2017.

The SCAQMD staff is currently engaged with CARB staff on funding programs for the near-zero emissions vehicles. As the commenter is aware, the state legislature appropriated \$23 million in Low Carbon Transportation Funds for low-NOx near-zero engines. In addition, the MSRC has been funding transit bus repowers with the near-zero 8.9 liter engine. Staff looks forward with working with the commenter and affected stakeholders to further incentivize near-zero emission technologies and to the extent that commercially available zero-emission technologies are available. Zero-emission technologies may include some form of hybridization, which would include the use of near-zero emission combustion engines with zero-emission technologies.

Lastly, staff welcomes the Gas Company's participation on the various working groups that will be formed to implement the SCAQMD proposed mobile source measures including MOB-08.

Response to Comment 56-19:

SCAQMD staff thanks the commenter for submitting the "Near-Zero Emission (NOx) Natural Gas Truck Opportunities in the South Coast Air Basin" report. The report will help inform the public on the benefits of near-zero natural gas engine technologies. SCAQMD staff will continue to work with the commenter in the deployment of near-zero natural gas technologies and the use of renewable natural gas to help the region meet federal air quality standards.

Response to Comment 56-20:

56-20A: The portion of the chapter referenced relates to the increase in methane emissions globally. We agree that methane reacts slowly in the atmosphere, and therefore, it is not considered an important ozone precursor within an urban scale. Methane's atmospheric lifetime is over a decade. This long atmospheric lifetime and strong absorption bands within the IR regions make it a potent greenhouse gas. However, methane does eventually react like a VOC in the atmosphere and results in the formation of ozone on a more global scale. With increasing global background concentrations of methane, the background levels of ozone also increase. If global emissions of methane continue to increase corresponding to higher global background levels, the ozone levels coming into the Basin will be higher. The SCAQMD along with other agencies will continue to monitor and further study how much increasing background ozone is expected to affect the Basin's ozone levels.

56-20B: Staff agrees that power to gas is an important technology that helps incorporate higher levels of renewable resources. Chapter 10 of the AQMP discusses the important need for storage technologies to help incorporate higher percentages of renewable energy. Part of this discussion includes the importance of further developing power to gas technologies. The chapter shows the importance of power to gas technologies to help with large utility scale storage along with long term energy storage needs.

56-20C: The 2016 AQMP includes many areas focused on the further development of biogas and renewable fuels. Within the Basin, there are opportunities to further develop waste streams to produce biogas along with the better utilization of existing waste streams to not only recover biogas but also reduce emissions at these sources. There are many different types of biogas sources and technologies that can be developed along with those listed. The SCAQMD has also been working to help bring new biogas facilities online in the Basin by helping fund the development of new facilities that utilize municipal waste and food waste streams. Within the AQMP, several stationary and mobile source control measures pursue and utilize the development of biogas waste streams. The SCAQMD has been in discussions with SoCal Gas, wastewater treatment facilities, landfill operators, and others in working on better

understanding the issues surrounding the economics and need for regulatory certainty to further develop biogas sources within the Basin and in California.

Utilizing biogas for transportation sources can create a win-win for both emissions and the local economy. However, as noted, not all biofuels reduce criteria or GHG pollutant emissions. We recognize certain biofuels can potentially reduce NOx and have negative carbon pathways. We agree that it is important to study the lifecycle emissions of these fuels for not only GHGs, but also for criteria pollutants.

Comment Letter from Southern California Leadership Council (Comment Letter 57)



**SOUTHERN CALIFORNIA
LEADERSHIP COUNCIL**

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Kish Rajan
President

Richard Lambros
Managing Director

August 19, 2016

Dr. Philip Fine
Deputy Executive Officer
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 92765

Re: Comments Concerning the South Coast Air Quality Management District's June 2016 Draft Air Quality Management Plan.

Dear Dr. Fine,

On behalf of the Southern California Leadership Council and the undersigned group of partner organizations, we thank you for the opportunity to review and comment on the June 2016 draft of the 2016 Air Quality Management Plan (the "Draft AQMP"). Our group is comprised of leading Southern California business and industry organizations.

Each of our organizations appreciates the assistance provided by, and the hard work of the able staff of the South Coast Air Quality Management District (the "District") in the many months leading up to the Draft AQMP. As we bring the issues set forth below to your attention for consideration as part of your work to finalize the AQMP, we look forward to additional helpful discussions. In particular, we applaud the District's staff for its willingness to champion incentive-based approaches to address the region's air quality challenges, and its recognition of the fact that economic considerations call for flexibility and adaptability in such far-reaching regulatory processes.

Our organizations are particularly focused on assuring that the District will continue the historically stellar progress toward safer air quality throughout the District's jurisdiction, while avoiding any and all unnecessary negative economic and societal impacts. In particular, we share the District's aim for air quality that is cleaner still; but we do so in light of the ongoing need to more fully and successfully provide employment and housing for the District's growing population. With that in mind, we applaud the District's promise to provide thorough economic analyses, including an evaluation of the AQMP's impact on jobs and job creation. Our groups will continue to work with the District and other stakeholders to assure that sound science and economic analyses are met with equally sound regulatory policies as we pursue our shared aims.

57-1

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Given this backdrop, we respectfully submit the following comments at this time:

I. The District needs to provide additional information before we can fully and fairly assess, comment upon, and help the District to promulgate the AQMP.

Although the District's staff has made impressive efforts to produce and present the Draft AQMP, the presentation for public comment still excludes numerous elements that must be received by the interested public and taken into consideration. These thus-far omitted elements include the Modeling and Attainment Demonstrations Appendix, Compliance with Other Clean Air Act Requirements Appendix, the Socioeconomic Analysis, and the Program Environmental Impact Report, none of which have yet been released in draft form for public review.

57-2

Consequently, our organizations provide in this letter only the most general and basic comments, while reserving our right to provide more comprehensive, detailed and connective comments at any appropriate time when those additional elements come into view.

II. The Draft AQMP relies heavily on large amounts of funding for incentive-based emissions reduction programs without identifying and analyzing sources of needed funding.

The Draft AQMP discusses measures that are expected to be implemented through the provision of financial incentives to accelerate the penetration of, for example, zero-emission and near-zero emission technologies, and to further reduce emissions from other mobile and stationary control measures. Specifically, the Draft AQMP identifies the need for \$14 billion in new funding to advance various suggested "incentive strategies."

57-3

While our organizations greatly appreciate this approach because, once again, we generally favor incentive based programs over less flexible command and control regulations, we are keenly interested in understanding and commenting upon the means by which the District might secure all such funding. Our concern is underpinned by the fact that many constituencies in the District are already hard-pressed by regulatory impositions that cumulatively harm the region's economy and add to the persistent shortage of jobs and housing.

Our organizations are also extremely concerned about the additional relative burdens that may be imposed upon various constituencies if and when tax or fee regimes might be fashioned to amass such financing. Many constituencies – particularly new and relocating industries, new development and homebuilding, and redevelopment – are already over-burdened, even without new and additional impositions. Therefore, our organizations look forward to more information and discussion about financial solutions that will square with the very broad-based societal benefits of the District's efforts to further improve air quality.

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III. EMG-01, in particular, has the potential to unfold in ways that will seriously stultify development and redevelopment and harm the region's economy.

The Draft AQMP contains a vague and ambiguous discussion of a promised measure labeled as EGM-01, which puts forth the prospect of a so-called indirect source regulation. The stated purpose of this measure is to mitigate and reduce emissions from new development and redevelopment projects. The description of EGM-01 is unclear, but it implies the potential for the imposition of new fees on development and redevelopment throughout the District or, selectively and arbitrarily, perhaps in ways similar to Rule 9510 adopted by the San Joaquin Valley Air Pollution Control District.

Our organizations are generally opposed to new development and redevelopment fees that may be imposed on top of the already highly excessive costs and burdens imposed by the California Environmental Quality Act. Moreover, our organizations have long appreciated and championed the primacy of local governments' decision-making powers concerning questions of land use and development – consistent with our democratic principles, and the fact that development invariably unfolds in response to organic demand from countless quarters.

57-4

Because EMG-01 is ambiguous as set forth in the Draft AQMP, and because it hints at the prospect of an unduly heavy-handed new land use regime, our organizations urge the District to exclude this measure from the District's enforceable, federalized measures. We look forward to participating in further discussions with the District to make sure that the District's clean air goals are not seen as having such overwhelming importance as to warrant the sacrifice of venerable and sensible land use prerogatives. In addition, the District will need to be mindful of the limitations of its enabling statutes if and when it brings forward any proposal under this measure.

IV. The proposed measures denominated MOB-1 through MOB-4 and MOB-8 would harm goods movement and the industries related thereto, and should be entirely reconsidered.

Our organizations respectfully oppose the proposed control measures denominated MOB-1 through 4 and MOB-8. Efficient and economical goods movement is essential to the region's overall economy, especially given that our region is home to the busiest and most important ports in the nation. Emissions related to goods movement should be addressed gradually and nationally through fleet change incentives and reasonably paced technological change, such as the affordable, appropriately gradual adoption of fuel and engine-type changes, which can most sensibly be achieved through standards for new vehicles. To the extent that the above-referenced MOB measures might be read to invite arbitrary caps on goods movement facilities and limitations on what are truly diffuse and dynamic goods movement activities, they should be discarded.

57-5

V. The District should reconsider and recast all measures that are proposed without quantified air quality benefits.

The Draft AQMP discusses various measures for which no air quality benefits are quantified, referred to as "to-be-determined" or "TBD" measures. A broad reading of the Draft

57-6

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AQMP suggests that the AQMD's implementation should be able to meet the federally imposed air quality standards even if all such TBD measures were to be forgone. Accordingly, our organizations urge the District to either forgo all such TBD measures in the AQMP, or incorporate only those for which both the costs and benefits of the measures can be identified and vetted publicly before they are included. Importantly, no socio-economic analyses can possibly be performed if there are no quantified air quality benefits from the measures at issue. Therefore, to the extent that the merits of such measures cannot be reasonably proven in the current AQMP process, such measures should be identified only as possible areas of future study and consideration.

57-6
Con't

VI. Our organizations urge the District to forgo CMB-05, which as proposed, would make adjustments to the RECLAIM program outside of the recent and very successful process for RECLAIM program amendments.

We note that the Draft AQMP includes a measure (CMB-05) that proposes to make a downward adjustment in permissible NOx emissions under the RECLAIM program applicable to stationary sources. The RECLAIM program was recently amended through a process that was, as is typical, robustly attended by all constituencies, and at which large volumes of detailed evidence was provided. More importantly, the recent amendments are the result of remarkable voluntary concessions, stakeholder engagement and broad-based agreement. In light of this, we believe that the AQMP process is not the proper vehicle through which to reconsider RECLAIM, given that the District's, its committees and Board, and all constituents' attention are spread over a much broader range of issues. Accordingly, we urge the District to remove CMB-05 as a measure, and rely instead on the existing process for future amendments to the RECLAIM program.

57-7

VII. The District needs to undertake a critical re-assessment of the burdensome federal and state air quality mandates with a view to advancing either (i) the most desirable and economical ways to comply, or (ii) the most persuasive and successful ways to challenge and correct them.

Our organizations recognize that the District is legally responsible for taking action to meet goals and stay within parameters mandated by state and federal law, particularly by the U.S. Environmental Protection Agency and the California Air Resources Board. Indeed, the District has long been tasked with trying to achieve increasingly stringent federal standards that are imposed disparately on our highly populous and economically important South Coast region.

57-8

Our organizations urge the District to take a more clear-headed and circumspect stance regarding the increasingly difficult state and federal targets and mandates that the District is being asked to meet. Many of the most recent federally imposed criteria air pollution standards have merely arguable scientific (health) justification. Respectfully, the District should be identifying these issues and effectively challenging the promulgating agencies to which it must regularly submit plans and measures.

Our South Coast region has already seen tremendous improvements in air quality in recent decades, but not without serious and unsustainable economic costs. Achieving still cleaner air

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quality is reasonably possible only through careful, measured, sensible steps and with great care concerning the economic consequences. Our region's economy will be crippled if the District simply attempts to implement aggressive state and federal mandates, knowing that they will force rapid and extensive transformation on industries that are unable to accommodate such change. When warranted, the District must be willing to push back on unrealistic mandates and/or work for more reasonable and achievable pathways and timelines for reaching these aggressive targets.

57-8
Con't

VIII. Conclusion

Once again, we wish to applaud the District and its staff for the efforts concerning both the Draft and the AQMP. We look forward to your responses. We hope that future releases of the Draft 2016 AQMP will be coordinated to include all appendices and supporting documents to ensure we all are afforded a comprehensive review. We thank you for your consideration of these comments, and for your ongoing work with us and all stakeholders.

Respectfully submitted,



Richard Lambros
Managing Director



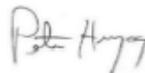
Mike Lewis
Senior Vice-President



Wes May
Executive Director



Paul Granillo
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Peter Herzog
Assistant Director of Legislative Affairs



Rob Evans
Executive Director



Bryan Starr
Sr. Vice President, Government Affairs



Responses to Comment Letter from Southern California Leadership Council (SCLC)
(Comment Letter 57)

Response to Comment 57-1:

Staff appreciates the participation in the development of the 2016 AQMP and support for the incentive measures. Further, staff echoes the commenter's interest in ensuring the economic impacts, such as job loss and job creation are fully analyzed and considered.

Response to Comment 57-2:

Please see Responses to Comments 38-1 and 52-1 with regard to the timing of the release of the Plan, appendices, and various related documents, and the ability to review and comment on those documents with appropriate time.

Response to Comment 57-3:

Please see Response to Comment 26-3 with regard to the Financial Incentive Funding Action Plan. Staff appreciates the support for the incentives but also recognizes the value of a regulatory approach that establishes permanent and enforceable reductions. Staff believes there can be a balance to achieve the aims of clean air while not imposing undue burden on industry, housing and re-development.

Response to Comment 57-4:

A comment is made that proposed measure EGM-01 is vague and ambiguous. The measure is broadly drafted to provide for discussion with affected stakeholders and the public on identifying actions that can potentially result in the mitigation of emissions and potentially additional emission reductions from new and redevelopment projects. Such actions can be regulatory or voluntary in nature. As such, the measure does not propose a specific control method.

Please see Response to Comment 38-3 regarding the proposed facility-based control measure EGM-01. While the District may not dictate what land use can occur in what area, it may impose additional requirements on a source to ensure attainment of air quality standards.

Response to Comment 57-5:

Staff believes that the approach proposed to identify actions that the goods movement industry are implementing for cost savings reasons is an approach that will not harm the goods movement industry. This is one area of opportunity that will be further discussed as part of the public process.

A comment was made that "Emissions related to goods movement should be addressed gradually and nationally through fleet change incentives and reasonably paced technological change, such as the affordable, appropriately gradual adoption of fuel and engine-type changes, which can most sensibly be achieved through standards for new vehicles." Given the amount of emission reductions needed to attain federal air quality standards and the short deadlines to meet the first ozone air quality standard by 2023, there is a need to accelerate turnover of older vehicles and equipment as soon as possible. This acceleration will be much faster than typical "business-as-usual" rate of adoption of new fuels and acquisition of new cleaner vehicles. The SCAQMD staff and CARB are proposing that additional incentives funding be identified to help with this effort. In addition, actions being taken in the goods movement

industry may have emission reduction co-benefits that could be recognized in the SIP. Some of these actions may be the result of other (non-SCAQMD) regulatory requirements or to improve operational efficiency.

Response to Comment 57-6:

Please see Response to Comment 7-5 regarding the proposed SCAQMD TBD measures and Response to Comment 38-5 regarding mobile source measures.

As noted in the Socioeconomic Impact Report, several of the SCAQMD mobile measures are proposed to help meet the emission reductions associated with the State SIP Strategy “Further Deployment” measures. As such, no additional emission reductions are specifically provided for the SCAQMD mobile source measures. However, the estimated cost to achieve the emission reductions associated with the State SIP Strategy measures have been analyzed in the Socioeconomic Impact Report.

Response to Comment 57-7:

The December 2015 amendments to the RECLAIM program came as a result of a BARCT assessment. State law mandates that these BARCT assessments occur periodically in order to identify feasible and cost effective technology that can be applied to existing RECLAIM sources to achieve program equivalency. RECLAIM amendments in the past have resulted from control measures of previous AQMPs. The RECLAIM rulemaking will go through a public process.

Response to Comment 57-8:

Staff acknowledges the commenter’s opinion of challenging agencies promulgation of new air pollution standards, but that action would not preclude the need to comply with existing requirements to meet the current ozone and PM2.5 standards. Further, the approval of the federal standards is a long public process. The Clean Air Act requires the periodic review of the standard such that all of public health studies are conducted and reviewed in the public domain. This review is also conducted by an independent panel of Clean Air Scientific Advisory Committee (CASAC) who makes recommendations to U.S. EPA before U.S. EPA decides how to proceed. Staff would encourage those interested in the development of the standards and those concerned regarding the stringency of the standards to participate in this process. Currently, there is a review of the PM air quality criteria and standards. An Integrated Review Plan (IRP) was released this year for public review and comment. Please access the following link to download the IRP: <https://yosemite.epa.gov/sab/sabproduct.nsf/LookupWebProjectsCurrentCASAC/EB862B233FBD0CDE85257DDA004FCB8C?OpenDocument>. There will be three more accompanying documents to be released over the next three years for public input before any potential rulemaking would take place.

STATE OF CALIFORNIA
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

SCAQMD's Draft 2016 Air Quality Management Plan) Comment Deadline:
Quality Management Plan) August 19, 2016

COMMENTS OF
THE TRUCK AND ENGINE MANUFACTURERS ASSOCIATION

Introduction

The Truck and Engine Manufacturers Association (“EMA”) hereby submits its comments on the Draft 2016 Air Quality Management Plan (the “Draft AQMP”) that the South Coast Air Quality Management District (“SCAQMD” or the “District”) released for public review on June 30, 2016.

EMA is the not-for-profit trade association that represents the world’s leading manufacturers of internal combustion engines, and the vehicles and equipment that those engines power, other than passenger cars. Heavy-duty on-highway (“HDOH”) engines and vehicles are included among the broad array of products that EMA’s members design and manufacture. Inasmuch as one of the core regulatory strategies at the heart of the Draft AQMP is the adoption of new low-NO_x emission standards for HDOH engines – indeed, the SCAQMD has petitioned the U.S. EPA to initiate a rulemaking to adopt such standards – EMA’s members have a direct and very significant interest in ensuring that the Draft AQMP is based on accurate, well-reasoned and validated emissions inventory assumptions and modeling. As discussed in detail below, that is not the case.

The Draft AQMP, as it relates to HDOH engines and vehicles, is premised on significant over-estimations of future ozone levels in the South Coast Air Basin (“SCAB”). The SCAQMD and the California Air Resources Board (“CARB”) have derived those over-estimations from their use and application of the Community Multi-Scale Air Quality (“CMAQ”) model, which, as applied in this context, consistently has over-predicted future ozone levels in the SCAB for many years, including as recently as 2012 when CARB and the SCAQMD developed their last SIP submissions. In light of those consistent over-predictions of ozone, the SCAQMD’s assertion (including in its rulemaking petition to EPA) that ozone attainment requires an additional 90% reduction in NO_x emissions from HDOH engines and vehicles – over and above the rigorous NO_x-control regulations that are already in place – is not supported by the facts. While some future HDOH emission requirements may prove to be warranted and reasonable, the assumed premise for adopting a 90% lower NO_x standard in 2019 is incorrect.

CARB’s EMFAC model – the tool for estimating future levels of individual precursor emissions, and in particular NO_x – also is over-estimating the magnitude of future-year emission inventories, and is utilizing emission inputs and related data that are significantly out-of-date. This, too, is a fundamental problem that needs to be remedied before the District proceeds to adopt any specific menu of SIP strategies, especially strategies that it estimates will cost well in excess of \$38 billion, including almost \$14 billion in incentive funding.

58-1

The following detailed comments on the Draft AQMP focus on eight main points. Certain of those points overlap with the comments that EMA previously submitted regarding CARB's 2016 SIP Strategy. A copy of EMA's earlier comments on the CARB SIP Strategy is attached as Exhibit "A," and is incorporated by reference into these comments.

**1. The SCAQMD Needs To Extend
The Current Deadline For Comments**

The August 19th deadline that the SCAQMD has established for comments on the Draft AQMP is not reasonable. In particular, the District has not yet made available the critically important "Appendix V" materials (referred to as the District's "Modeling and Attainment Demonstrations"), which contain the "detailed information on the modeling approach, data retrieval, model development and enhancement, model application, emissions inventory development, and interpretation of results." (Draft AQMP, p.5-3.) In essence, Appendix V contains virtually all of the relevant detailed information relating to the accuracy and validity of the Draft AQMP. Yet it is not available for review in advance of the comment deadline. Indeed, it appears that the Appendix V materials will not be available until weeks after the comment deadline.

58-1
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That is not consistent with the requirements of administrative due process. The District should extend the comment deadline on the Draft AQMP to a date that is at least 30 days after the public release of all of the Appendix V materials, and the District's draft response to comments should be discussed within the Scientific Technical Modeling Peer Review (STMPR) Advisory Group before the District's responses are included in any draft final 2016 AQMP.

**2. The AQMP Should Include Scientific Validation Of The
Approach Used To Estimate Future Ozone Design Values (DVs),
And Should Correct For Any Identified Discrepancies**

Review of the District's current and past AQMP attainment modeling efforts indicates that the model-derived results consistently under-estimate projected ozone reductions and over-estimate needed emission reductions. (See Exhibit A.) In particular, analysis of the current Draft AQMP indicates that it continues the trend of under-estimating future ozone reductions and, thus, over-estimating absolute ground ozone levels in the applicable attainment years (2023 and 2031). This necessarily yields incorrect conclusions regarding the extent to which multi-billion dollar controls and incentives are required to reach attainment in the SCAB.

58-2

The SCAQMD should undertake the necessary efforts to validate the operative predicted ozone reduction rates by comparing modeled backcasts against measured historic ozone design values ("DVs"), and should caveat the District's model-based attainment projections accordingly. Simply stated, and as detailed below, the discrepancies between modeled and measured levels of ozone and NO_x in the SCAB are too significant at this juncture to allow for the adoption or implementation of multi-billion dollar public policy choices based on that modeling.

Accordingly, the SCAQMD should not finalize the Draft AQMP until such time as the latest modeled projections can be fully assessed and validated. To that end, and before seeking Board approval of the Draft AQMP, the SCAQMD should utilize the validation methods and analyses that U.S. EPA recommends, including "dynamic evaluations" that assess and take into

account the past performance of air quality modeling efforts. If such validation shows that the 2016 AQMP models under-predict ozone trends going back in time 10 to 15 years (backcasts), we recommend that the forecasts be adjusted accordingly.

The potential under-estimates in ozone reduction rates (which appear to be on the order of 2 times or more) could result in billions of dollars being spent unnecessarily. Thus, we also recommend that prioritized modeling and technical research studies be initiated as soon as possible, and that the appropriate qualifiers be included in the Draft AQMP stating that any enforceable emission reduction commitments will be subject to revised and improved attainment demonstrations. In that regard, EMA appreciates the meeting that was held on May 26, 2016, with experts from Ramboll-Environ and Sonoma Technologies Inc. ("STI"), and with the SCAQMD modeling team, during which we discussed the need to assess and validate the relevant CMAQ-based results, and agreed in principle to collaborate on the recommended type of modeling validation efforts. The statement of work that Ramboll/STI have prepared to undertake the validation work at issue is attached as Exhibit "C." EMA looks forward to iterating with the District staff as this important work proceeds.

58-2

The recommended validation work is not simply an academic exercise. The costs of erroneous projections are extremely high. In fact, the SCAQMD is anticipating that its Draft AQMP will have an implementation price tag exceeding \$38 billion. Those enormous costs raise very serious questions about the unintended adverse consequences of inaccurate air quality modeling and emission inventory estimates. Those questions become even more pointed when the actual current rate of progress in reducing ozone levels is considered.

3. The Current And Recent AQMPs Significantly Underestimate Ozone DV Rates of Reduction When Compared Against Measured SoCAB Ozone DVs

As noted above and as detailed in Exhibit A, the CMAQ modeling tool, as applied in this context, is yielding significantly different results compared to the trends in actual observed and measured ozone concentrations. Unless the SCAQMD can point to new validation efforts demonstrating that the "updated modeling platform" is significantly better at predicting future trends or rates of ozone reductions/increases over time, there is no basis for assuming that the past over-estimates of future ozone levels will not continue. In the past (i.e., the 2012 AQMP), Appendix V was used to show the accuracy (uncertainty) of models as assessed against the "base year" (2008 in that case). However, that type of "base year" validation – which really only amounts to a re-anchoring of the model to updated inventory numbers – does not assess the accuracy of the model with respect to actual forecasts or backcasts. It is that type of "dynamic" validation work that is required. Of course, in this instance, as already noted, the relevant Appendix V materials are not even available.

58-3

At page 5-3 of the AQMP, the District states: *"The trend of Basin ozone design values is presented in Fig 5-1. The 8-hour design values have averaged a reduction of approximately 2.3 ppb per year over the 14-year period..."*

The referenced “14 year period” covers the years from 2001 through 2014. While the District highlights the average rate of ozone DV reductions over that time period, the District fails to acknowledge that the previous 2007 and 2012 AQMPs, as well as the current Draft AQMP, continue to predict rates of ozone design value (“DV”) reductions that are much lower than those actually measured (see chart below). A review of the three most recent AQMPs shows that the model-predicted ozone DV reduction rates have been as follows:

2007 AQMP: 1.38 ppb per year (years 2002 to 2023)
 2012 AQMP: 0.60 ppb per year (years 2008 to 2023)
 2016 AQMP: 0.73 ppb per year (years 2012 to 2023)

To evaluate the accuracy of the above CMAQ-derived ozone DV trend predictions, we have used the following data, assumptions and analytical methods:

- The 2007 AQMP contains predicted ozone DV changes from 2002 to 2023
- The 2012 AQMP contains predicted ozone DV changes from 2008 to 2023
- The 2016 Draft AQMP contains predicted ozone DV changes from 2012 to 2023
- Actual measurements of ozone changes (reductions) between 2002 and 2015 are readily available from CARB and District databases
- Prior analysis by Ramboll-Environ (see Exhibit A, p.5, and Exhibit “B,” which is an enhanced excerpt from Exhibit A), using 2012 AQMP CMAQ-ready files, has shown that ozone predictions between 2001 and 2023 are fairly linear (i.e., the slope of reductions between 2001-2014 is almost the same as the slope between 2014 and 2023 for all the SCAB monitoring sites). It is thus likely that the AQMPs’ predictions of ozone changes between 2002, 2008, or 2012 to 2023 also are fairly linear
- AQMP ozone reductions can be calculated between the base year and 2023, and, for this analysis, the reduction rate is assumed to be the same between the base year and 2015 (linearity)
- Using this approach, we can compare ozone DV reduction rates (ppb/year) between the various AQMP’s predictions and those actually measured at the critical monitoring sites in the SCAB for the relevant years used in each AQMP
 - For example, the blue bar depicting the 2016 Draft AQMP’s estimated ozone reductions for Crestline (0.60 ppb/yr) (see chart below) is calculated as follows: subtracting the 2023 Baseline DV (Table 5-2) from the 2012 5-yr (baseline) Weighted DV (Table 5-1), and then dividing by 11 years (2023-2012). This resulting 0.60 ppb/yr reduction rate is assumed to be the same between 2012-2015 and 2015-2023. Ongoing work by Ramboll Environ will look to confirm that this linearity assumption remains valid (similar to the linearity demonstrated between 2008 and 2023 using the 2012 AQMP CMAQ database, as depicted in Exhibit B)
- The actual measured DVs between either 2002, 2008, or 2012 and 2015 are estimated using the slope of a linear regression calculation applied to each ozone data set

58-3
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- It is recognized that the 2012-2015 period does not offer enough years to obtain a very robust estimate of ozone DV reductions (ppb/yr). Nevertheless, the comparisons can be made, keeping this caveat in mind

Using the approach described above, the following charts compare ozone DV reductions (ppb/year) between the various AQMP predictions and the actual corollary measurements obtained at the key air quality monitoring sites in the SCAB:



58-3
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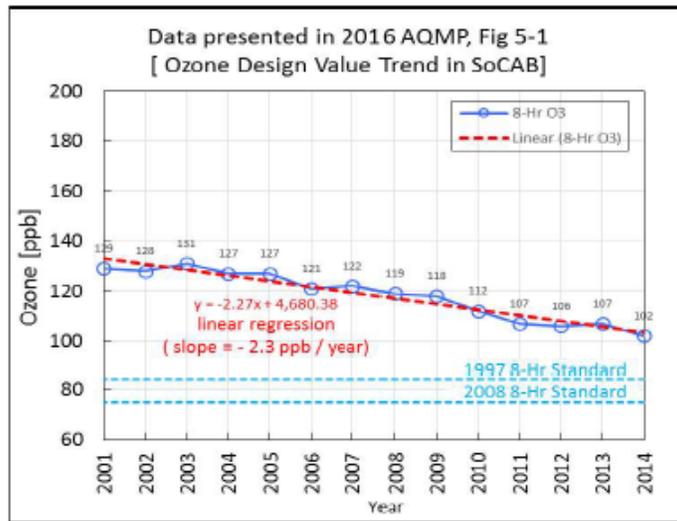
The foregoing clearly indicates that the Draft AQMP is predicting very slow reduction rates in ozone DVs similar to the previous AQMPs. In the case of Crestline, for example, the current modeling predicts a reduction rate of just 0.73 ppb/year. However, a review of CMAQ-predictions versus measured ozone DVs over the last decade, as depicted above, does not support the model predictions. The measured reductions are nearly 2 times greater. Moreover, there is no evidence presented in the Draft AQMP to increase the level of confidence in the more recent predictions. To the contrary, it remains likely that the reduction rates predicted for the various monitoring sites in the SCAB are still under-predicting reality to a significant extent.

4. If The AQMP Under-Estimates Future Ozone DV Reduction Rates, The SCAB Is Closer To Ozone Attainment In 2023 And 2031

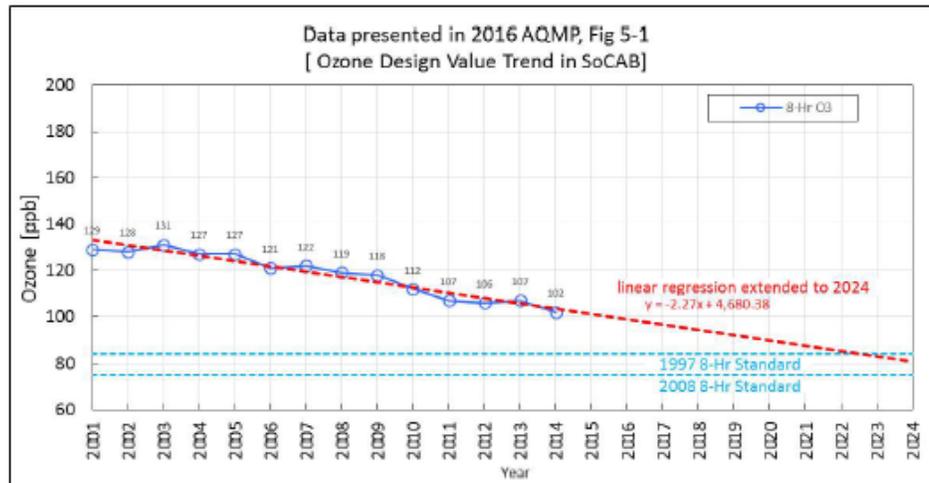
The Draft AQMP states (at p.5-4) that the measured 8-hour ozone design value in the SCAB has been declining at a rate of 2.3 ppb per year over the 14-year period from 2001 to 2014. At that same rate, the ozone level at Crestline (which was 101 ppb in 2014) would be 80 ppb in 2023 and 62 ppb in 2031. That rate of decline would result in an ozone level that would be well below the targeted attainment level in 2031 (of 75 ppb) and in attainment with the applicable NAAQS in 2023 (i.e., a DV less than 85 ppb), without any additional control measures. While expecting a constant 2.3 ppb/year reduction between 2012 and 2023 may not be reasonable, a rate of 0.73 is more unlikely based on the analyzed data to date.

Figure 5-1 from the Draft AQMP shows the ozone DV trend, and compares it against the 1997 8-hr standard (84 ppb when accounting for allowable rounding). Figure 5-1 is reproduced below. For clarity, we have added labels to each data point. We have also included a linear regression through the data (which yields the estimated 14-year ozone-reduction slope of -2.3 ppb/year). It is interesting to note that the DV during those 14 years was set by Crestline each year, except in 2013. In that year, Crestline's DV was 102 ppb while Redlands' DV was 107 ppb. The ozone DV rate of reduction for Crestline during that time period was -2.42 ppb/year.

58-4



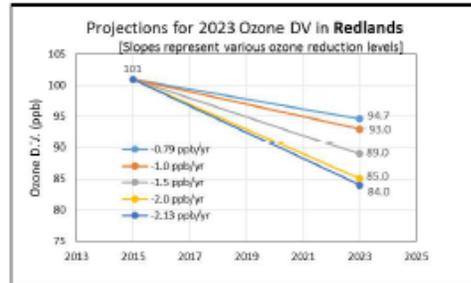
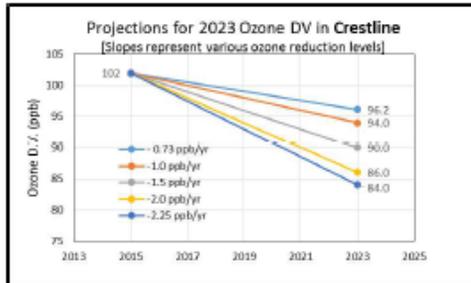
For additional insight, the same data shown are below, extended to 2024, the year when attainment with the 1997 8-hr ozone standard of 84 ppb must be demonstrated. When the established trend is extended to 2024, the DV appears to meet the 1997 8-Hr standard on time.



While we have heard from CARB and SCAQMD staff that the measured ozone DV trends are expected to change (slow down) in the future, and already are changing in some monitoring stations, the fact remains that CMAQ-modeled results, as derived for prior AQMPs, have significantly under-predicted the pace of ozone DV reductions. The 2012 AQMP discussed an expected slowing of the ozone DV reduction rates beyond 2008. However, those slower-paced reductions were not confirmed by the subsequently measured data. Significantly, the 2012 AQMP did include emissions inventory updates to account for the 2008-2010 recession, so the recession cannot serve as a potential rationale for the significant discrepancies between AQMP-estimated and actual (measured) ozone DV reductions.

58-4
Con't

There are other ways to explore this same fundamental concern. For example, the chart below illustrates the estimated ozone DV levels for Crestline and Redlands in 2023. Since the actual ozone DVs for 2015 are already known (102 and 101 ppb, respectively, pursuant to CARB's published records), one can predict the 2023 ozone DVs assuming various reduction rates. The Crestline chart shows that the Draft AQMP-predicted rate of 0.73 ppb/yr results in a 2023 ozone DV of 96.2 ppb (12 ppb above attainment). However, if the 0.73 ppb/yr is under-estimated, and, if for instance, the real reduction rates between 2015 and 2023 are more on the order of 1.5 ppb/yr, the 2023 ozone DV would be 90 ppb (just roughly 6 ppb out of attainment). Furthermore, if the actual reduction rate between 2015 and 2023 ends up being closer to 2.25 ppb/yr, Crestline would be in full attainment with the 84 ppb standard. Similar conclusions can be drawn for Redlands or any other monitoring station in the SCAB. These seemingly small differences in 2023 ozone levels can have a profound effect on the necessary extent and cost of attainment-strategy emission reductions. All of this cautions against finalizing a \$38 billion AQMP (including \$14 billion in incentive funding) before all of the significant modeling uncertainties at issue are resolved.



58-4
Cont'

5. The Current AQMP Is Targeting A NO_x Carrying Capacity Based On A 82.0 ppb Ozone Level Instead Of A 84.9 ppb Ozone Level

Other salient facts underscore that the District is over-stating the need for future ozone reductions. For example, in Table 5-2 of the Draft AQMP, the CMAQ modeling that the District is relying on to frame the Draft AQMP has yielded ozone DVs that are below the required regulatory target in 2023, which is 84.9 ppb. Under the District’s modeling, the maximum DV (in Table 5-2, Fontana) is reduced to 82 ppb. While that might not appear to be significant on its face, a 2.9 ppb ozone differential corresponds roughly to 20 tons per day (“tpd”) of NO_x, which means that the 2023 NO_x carrying capacity should actually be 170 tpd, not 150 tpd as the District claims in the Draft AQMP. That 20 tpd difference amounts to a 13% increase in the SCAB’s actual NO_x carrying capacity. Viewed another way, if the District properly calibrated its modeling to match up with the actual point of ozone attainment in 2023 (84.9 ppb), the necessary reductions in NO_x from the baseline would be 32%, not 43% as stated in the Draft AQMP (at page 5-9).

58-5

When coupled with the District’s significant over-predictions of future ozone levels, the over-statement of potentially necessary NO_x reductions makes it all the more evident that the Draft AQMP is not sufficiently sound or accurate enough to stand as the basis for public policy choices that the District estimates will cost approximately \$38 billion.

6. The AQMP Needs To Include A Quantitative Uncertainty Analysis Of Baseline And Future-Year Emission Estimates

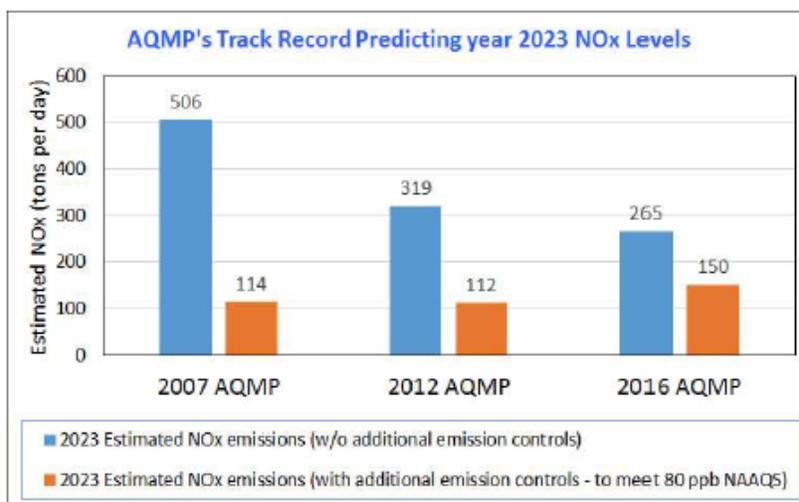
While a section of Chapter 3 of the Draft AQMP entitled “Uncertainties in the Emissions Inventory” stresses the importance of an accurate inventory and describes general improvements to emissions models, the District fails to include any quantitative uncertainty estimates for the baseline or future-year emissions estimates. Similarly, the District does not discuss or attempt to quantify the uncertainties associated with the methods and datasets used to prepare the emissions estimates for air quality modeling (e.g., spatial and temporal allocation, and chemical speciation).

58-6

Of particular interest are the uncertainties associated with the on-road mobile source emissions estimates that are generated from EMFAC2014. Mobile source NO_x emissions estimates are an area of active research, and several recent studies have found that photochemical grid modeling results show better agreement with ambient monitoring data when NO_x emissions are decreased by 50% or more (See Anderson et al., 2014; Kota et al., 2014; Cauty et al., 2015; Jacob

et al., 2015)¹. Generally, those studies attribute the NO_x overestimates to the mobile source sector. For example, Anderson et al. (2014) suggest that emission control systems deteriorate more slowly than is assumed in EPA's MOVES. In Exhibit A, EMA has highlighted similar concerns relating to the over-stated zero-mile emission rate, and the over-estimated tampering, malfunction and malmaintenance ("TM&M") rates incorporated into EMFAC2014.

While page 3-9 of the Draft AQMP states: "forecasts are made with the best information available; nevertheless, there is uncertainty in emissions projections," this section on uncertainties does not describe or quantify the specific uncertainties related to the District's emissions forecasts. That omission is especially concerning given the dramatic differences in future-year emission projections among the various versions of the AQMP. For example, as shown on the chart below, for the same future-year of 2023, the 2007, 2012, and 2016 AQMPs project baseline NO_x emissions of 506 tpd (2007), 319 tpd (2012), and 265 tpd (2016) – results that vary by nearly 50%.² Because those NO_x emissions projections play a critical role in the accuracy of modeled future-year ozone projections, additional understanding of the significant differences in forecasted NO_x emissions is required before finalizing the Draft AQMP.



58-6
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¹ Cauty, et al., "Ozone and NO_x Chemistry in Eastern US: Evaluation of CMAQ/CB05 with Satellite (OMI) Data," *Atmos. Chem. Phys.*, 15: 10965-10982 (2015); Anderson, et al., "Measured and Modeled CO and NO_y in DISCOVER-AQ: Evaluation of Emissions and Chemistry Over the Eastern U.S.," *Atmos. Environ.*, 96:78-87 (2014); Kota, et al., "Evaluation of On-Road Vehicle CO and NO_x National Emission Inventories Using an Urban-Scale Source-Oriented Air Quality Model," *Atmos. Environ.*, 85:99-108; Zhou, et al., "Reconciling NO_x Emissions Reductions and Ozone Trends in the U.S., 2002-2006," *Atmos. Environ.*, 70:236-244 (2013); and Jacob, et al., "Factors Controlling PM and Ozone Over the Southeast US as Emissions Decrease: Insights From the NASA SEAC⁴RS Campaign," EPRI Envision Conference (2015).

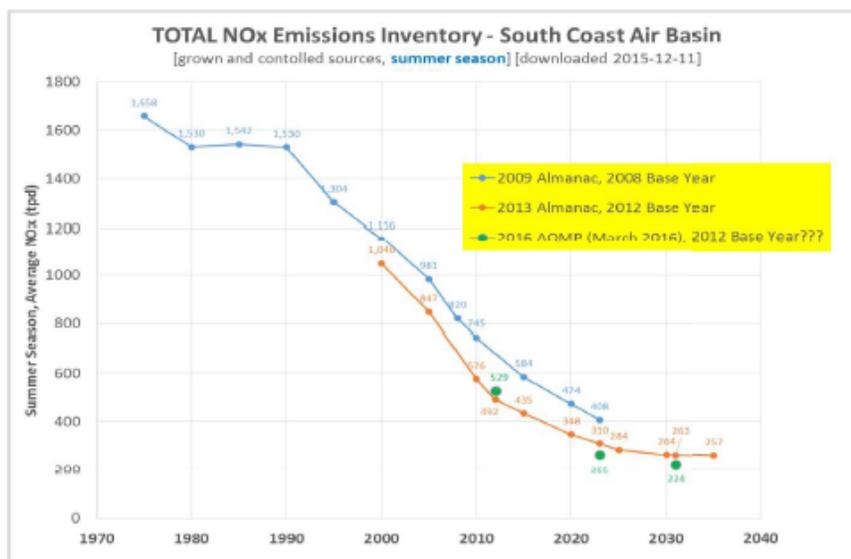
² Even accounting for the various emission control regulations adopted between the 2007 AQMP and the 2016 Draft AQMP, the baseline NO_x emission projections would still vary by more than 100 tpd (more than 35%).

7. The Impact Of The 2008-10 Recession Was Already Accounted For In The 2012 AQMP, And Should Not Be Considered An Improvement To The 2016 AQMP Modeling

At page 5-8 of the AQMP, the District states: "... Lower 2023 baseline VOC and NO_x emissions in the 2016 AQMP relative to the 2012 AQMP reflect the impact of the recession occurring between 2008 and 2010." That is not accurate.

Review of the 2012 AQMP reveals that the emissions inventory used for that analysis was based on the 2013 CARB Almanac. Significantly, that set of inventory numbers already appears to have accounted for the 2008-2010 recession. The figure below shows a comparison of NO_x inventory values from the 2009 and 2013 Almanacs, along with the most recent NO_x values used in the Draft AQMP. It is clear that the 2013 Almanac NO_x emissions (which were used for the 2012 AQMP) show an "additional reduction" of NO_x between the 2008 and 2010 time frame. The NO_x slopes of the 2009 and 2013 Almanac values are clearly different during the recession period. Additionally, the NO_x values used in the Draft AQMP (shown in green) seem to line up quite closely to those of the previous inventory. From this, it seems unjustified to attribute the NO_x inventory changes in the 2016 AQMP model to the 2008-2010 recession.

58-7



8. The Targeted 43% Reduction in NO_x Levels Could Not Start Prior To 2017

The red line in Figure 5-24 of the AQMP (reproduced below) shows the necessary “glide path” to achieve an additional 43% reduction in NO_x levels by 2023, and indicates a baseline NO_x level on the order of 390 tpd in 2015. However, that baseline number has not been achieved based on current inventories. Similarly, the expectation of a gradual decrease in NO_x (red line) between 2012 and 2023 is not realistic. Accordingly, if the targeted 43% reduction in NO_x (already overstated, as noted above) is to be achieved, it will have to take place at the tail end of the 2012-2023 time period, which would more accurately describe the emission reduction challenge suggested by the current Draft AQMP’s attainment modeling. Figure 5-24 should be revised so that the red dashed line begins in 2017 and is consistent with the emission reduction timing described in the Draft AQMP’s descriptions of the proposed control measures.

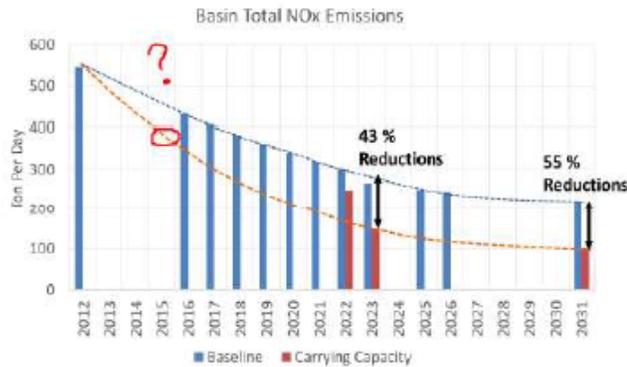


FIGURE 5-24
SILVER PLUMBER BASIN NO_x EMISSIONS AND OTNFC CARRYING CAPACITY

58-8

Conclusion

EMA appreciates the opportunity to submit comments on the Draft AQMP, but requests that the comment deadline be extended to allow for a full and fair review of the vitally important Appendix V materials. In addition, EMA urges the District not to finalize the Draft AQMP until such times as the very significant ozone modeling issues can be more fully assessed and resolved. In that regard, EMA is committing significant resources to fund additional research (to be performed by Ramboll Environ and Sonoma Technology, Inc.) into the magnitude and potential causes of the discrepancies between modeled and measured ozone values in the SCAB. An outline of the Ramboll/STI research plan is attached as Exhibit "C." As discussed at the meeting held on May 26, 2016, EMA would welcome the opportunity to collaborate and iterate on this important research initiative with the District staff, and we would welcome any feedback on the scope of work at issue.

In sum, it is clear that CMAQ, as applied by CARB and the SCAQMD, does (and will) over-predict future ozone levels in the SCAB. Consequently, the District's CMAQ-based assertions (and petition) that an 80% reduction in NO_x emissions is required to reach NAAQS attainment, and that the NO_x standard for HDOH engines must be reduced by 90% to hit that 80% reduction target, are both derived from significant over-predictions of what ozone (and NO_x) levels will be in 2031. From that, it also follows that the SCAQMD's (and CARB's) intent to enter into binding SIP commitments to adopt a new low-NO_x standard for HDOH engines (at a 0.02 g/bph-hr level) is based on an incorrect premise.

The Draft AQMP, therefore, should not be approved in its current form. In fact, and as noted above, given the consistent history of deriving over-stated results from the application of CMAQ, the Draft AQMP should not be finalized or approved until such time as CARB and the SCAQMD can complete and publish a thorough validation and dynamic evaluation of its 2016 ozone modeling efforts, as recommended by EPA, and until the results of the research proposed by Ramboll/STI can be fully considered.

Respectfully submitted,

TRUCK AND ENGINE
MANUFACTURERS ASSOCIATION

EXHIBIT A

**STATE OF CALIFORNIA
AIR RESOURCE BOARD**

Proposed 2016 State Strategy)	Board Hearing Date:
for the State Implementation)	September 22, 2016
Plan, and Draft Environmental)	
Analysis (Appendix B))	

**COMMENTS OF
THE TRUCK AND ENGINE MANUFACTURERS ASSOCIATION**

July 18, 2016

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Timothy A. French
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**STATE OF CALIFORNIA
AIR RESOURCE BOARD**

Proposed 2016 State Strategy for the State Implementation Plan, and Draft Environmental Analysis (Appendix B))	Board Hearing Date: September 22, 2016
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**COMMENTS OF
THE TRUCK AND ENGINE MANUFACTURERS ASSOCIATION**

Introduction

The Truck and Engine Manufacturers Association (“EMA”) hereby submits its comments on the Proposed 2016 State Strategy for the State Implementation Plan, and the accompanying Draft Environmental Analysis (hereinafter, the “2016 SIP Strategy”) that the California Air Resources Board (“CARB”) made available for public comment on May 17, 2016. EMA appreciates the opportunity to submit these comments on the 2016 SIP Strategy, and is doing so to help improve the accuracy and reasonableness of CARB’s strategic plan to continue to improve air quality throughout California. EMA looks forward to following up with CARB staff on the important issues identified in these comments.

EMA is the not-for-profit trade association that represents the world’s leading manufacturers of internal combustion engines, and the vehicles and equipment that those engines power, other than passenger cars. Heavy-duty on-highway (“HDOH”) engines and vehicles are included among the array of products that EMA’s members manufacture. Since a linch-pin of the 2016 SIP Strategy is the proposed adoption of new low-NO_x emission standards for HDOH engines, EMA’s members have a direct and substantial interest in ensuring that the 2016 SIP Strategy is based on well-reasoned and validated emissions inventory assumptions and modeling. As explained below, that is not the case.

The 2016 SIP Strategy, as it relates to HDOH engines and vehicles, is premised on significant over-estimations of future ozone levels in the South Coast Air Basin (“SCAB”). CARB has derived those over-estimations from its use and application of the Community Multi-Scale Air Quality (“CMAQ”) model, which, as applied by CARB, consistently has over-predicted future ozone levels in the SCAB for the past 25 years, including as recently as 2012 when CARB developed its last SIP submissions. In light of those consistent over-predictions of ozone, CARB’s assertion that ozone attainment requires an additional 90% reduction in NO_x emissions from HDOH engines and vehicles – over and above the rigorous NO_x-control regulations that are already in place – is simply not supported by the actual facts. While some future HDOH emission requirements may prove to be warranted and reasonable, the assumed premise for adopting a 90% lower NO_x standard in 2019 is flawed and incorrect.

CARB’s EMFAC model – the tool for estimating future levels of individual precursor emission, and in particular NO_x – also is over-estimating the magnitude of future-year emission inventories, and is utilizing emission inputs and related data that are significantly out-of-date. This, too, is a fundamental problem that CARB should remedy before adopting any specific menu of SIP strategies, especially strategies that are estimated to cost in excess of \$10 billion.

CARB's assertion that it is justified in proposing to adopt non-aligned "Phase 2" greenhouse gas ("GHG") emission standards for HDOH vocational vehicles is similarly flawed. Specifically, CARB asserts that it intends to "layer additional requirements for vocational vehicle aerodynamics onto the federal Phase 2 program." (2016 SIP Strategy, p. 52.) That proposal is unreasonable.

The feasibility and cost-effectiveness of the Phase 2 GHG program (which will be finalized near the end of July) is premised upon complete alignment and harmonization between U.S. EPA and CARB. HDOH vehicle manufacturers cannot afford to build separate vehicles to meet California's purported need for unique incremental GHG requirements. Moreover, the notion that enhanced aerodynamics features are suitable for vocational vehicle applications is wrong. The very broad array of vocational vehicle applications, from dump trucks and garbage trucks to transit buses and school buses, and the urban and multi-purpose drive cycles over which they operate, are fundamentally ill-suited to enhanced aerodynamics. That is the reason why U.S. EPA -- which in this instance has the exact same regulatory interest as CARB -- eschewed requiring enhanced aerodynamic performance for vocational vehicles. Putting a vocational vehicle on California roads or placing that vehicle under CARB's jurisdiction does not change the fundamental aerodynamic limitations under which vocational vehicles operate.

CARB Has Failed To Provide For A Fair Notice And Comment Process

As an initial matter, CARB has failed to provide for a fair and reasonable notice and comment process relating to the 2016 SIP Strategy. Specifically, CARB has based its 2016 SIP Strategy, and each of the proposed control measures, on the numerous modeling files and results that CARB and the SCAQMD have developed for the SCAQMD's 2016 Air Quality Management Plan ("AQMP"). While the text of the AQMP was just released on June 30, 2016, the underlying modeling files and results have not been made available for public review and comment. That is a clear abrogation of administrative due process, and should require a new notice and comment process when the data and methods underlying the 2016 AQMP become publicly available. In that regard, all of the modeling methods, data and results that CARB and the SCAQMD are relying on their preparation of the 2016 AQMP and SIP Strategy (including all "Appendix III" and "Appendix V" materials) should be released for public scrutiny as soon as possible.

CMAQ Over-Predicts SCAB Ozone Levels

CMAQ modeling is the cornerstone of the 2016 SIP Strategy. In that regard, "ARB and the South Coast have been collaborating on air quality modeling to provide estimates of the reductions needed to attain the ozone and PM_{2.5} standards." (2016 SIP Strategy, p.12.) The resultant estimates from those collaborative modeling runs of the necessary emission reductions are very large. As CARB explains:

Current modeling indicates that NO_x emissions will need to decline to approximately 130 tons per day (tpd) [in the SCAB] in 2023, and 90 tpd in 2031 to provide for attainment in the remaining portions of the region that do not yet meet the standards. Reaching these levels will require an approximate 70 percent reduction from today's levels by 2023, and an overall 80 percent reduction by 2031. (*Id.*)¹

Based on those same modeling efforts, CARB is proposing to adopt in 2019 low-NO_x standards that will “provide 90 percent overall NO_x emission reductions from the current engine and emission control technologies.” (2016 SIP Strategy, p.49.) “For heavy-duty vehicles, the State SIP Strategy calls for combustion engine technology that is effectively 90 percent cleaner than today's standards.” (2016 SIP Strategy, p. 4.)

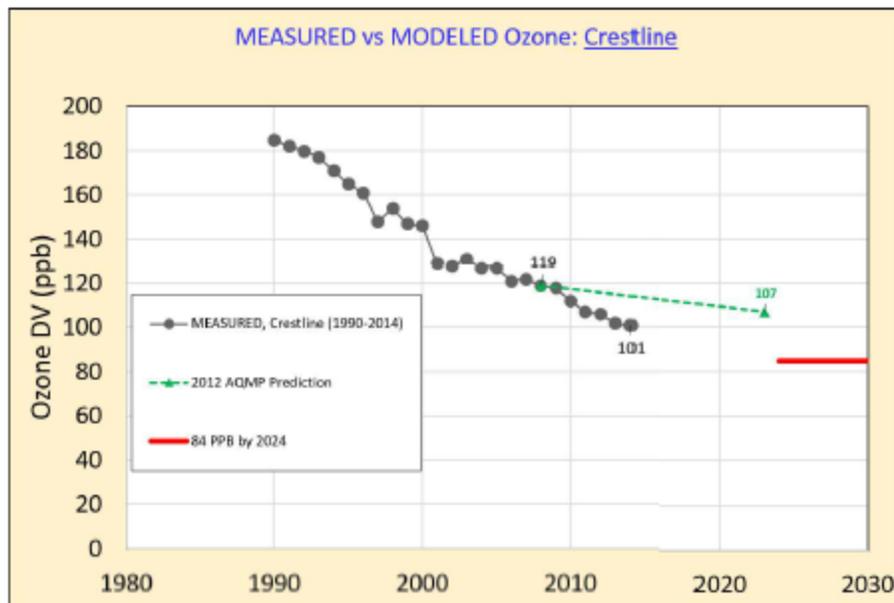
As noted above, CARB's call for an additional 90% reduction of the NO_x standard applicable to HDOH engines is premised on its utilization and application of CMAQ in a manner that consistently has over-predicted future ozone levels in the SCAB. EMA has worked with leading experts from Ramboll Environ to develop comprehensive analyses comparing CMAQ-modeled levels of ozone in the SCAB against actual monitored levels of ozone in the SCAB (hereinafter, the “Ramboll Analysis”). In addition, EMA is working with Sonoma Technology, Inc. (“STI”) to perform additional analyses of NO_x and VOC trends, and to develop detailed comparisons between the available ambient data and the modeled emissions inventories for the SCAB. The Ramboll Analysis shows that, dating back to 1990, monitored levels of ozone have declined at a rate (ppb/year) that is 2 times faster than the CMAQ-modeled levels. The performance of CMAQ has been even worse over the more recent time period (2008-2014), during which time the observed and monitored trend in the reduction of ozone (on a ppb/year basis) has been 2 to 8 times faster than the CMAQ-predicted trend.

The specifics of the Ramboll Analysis bear this out. It is undisputed that at 14 out of 16 air quality monitoring stations in the SCAB, actual measured levels of ozone already were significantly lower in 2014 than the ozone levels that CMAQ predicted (for purposes of the 2012 SIP) would be achieved in 2023. Stated differently, actual ozone results already were significantly better in 2014 than the results CMAQ predicted for 2023, a full nine years later. The following chart depicts this significant disparity (all units are in ppb):

¹It is very interesting to note that the 2016 AQMP asserts a different conclusion in this regard. The AQMP claims that “[t]he carrying capacities, the maximum allowable NO_x emissions to meet the ozone standards, are estimated to be 150 TPD NO_x in 2023 [not 130 tpd], and 100 TPD NO_x in 2031 [not 90 tpd]. (See AQMP, p.5-9.) Consequently, it is clear that, at best, one of those sets of estimates, either CARB's or the SCAQMD's, is wrong.

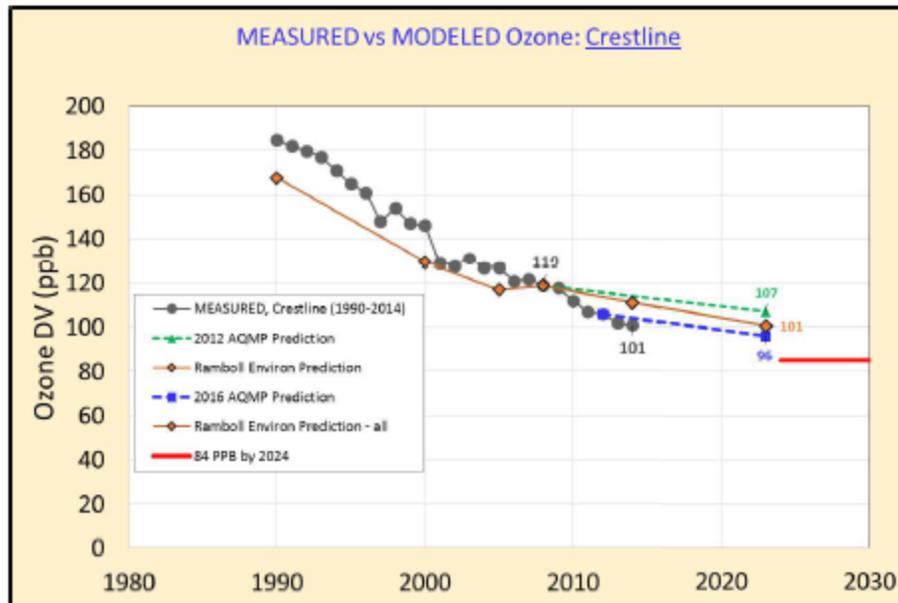
Location	2014 measured O ₃ DV	2023 projections (Table 5-5, 2012 AQMP)
San Bernardino	97	108
Crestline	101	107
Glendora	93	107
Upland	96	106
Fontana	99	104
Redlands	102	103
Riverside	93	100
Pomona	86	100
Azusa	80	95
Santa Clarita	97	94
Banning	93	94
Pasadena	78	92
Reseda	87	90
Perris	89	88
Lake Elsinore	82	85
Durbank	00	76
Basin-Wide Max	102	108

The Ramboll Analysis explored this disparity in greater depth. Specifically, that analysis assessed, on a year-by-year basis, how CMAQ-modeled ozone levels and trends compare against actual monitored ozone levels and trends. Set forth below is an example of such a detailed comparison, focusing on the Crestline monitoring site, which historically has been the highest “design value” for the SCAB.

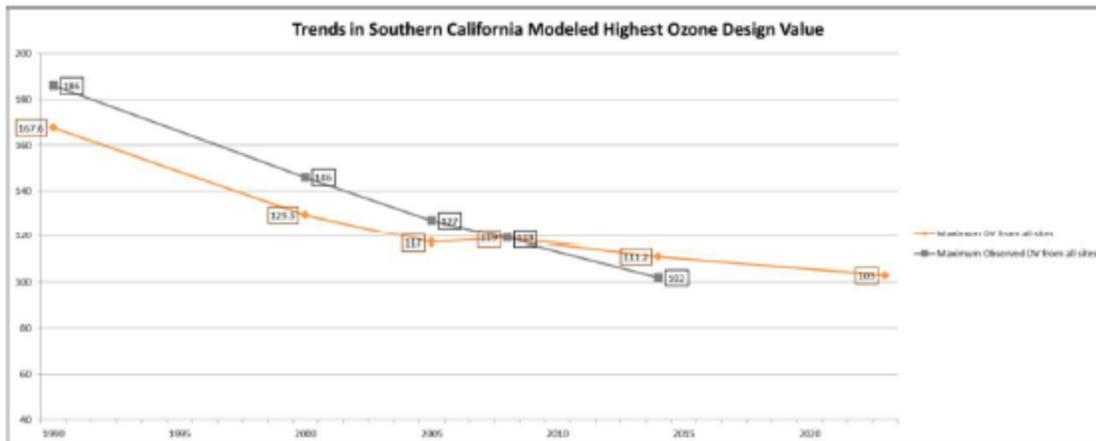


The foregoing chart compares the trend line for actual ozone reductions against the trend line that CARB derived in 2012 using CMAQ (and utilizing a 2008 base year). As is evident from the chart, the actual monitored ozone value at Crestline in 2014 (101 ppb) was significantly better than the CMAQ-predicted value for Crestline in 2023 (107 ppb). Moreover, the trend line that CMAQ predicted (just four years ago as a component of the 2012 SIP submissions) was much flatter, and much less responsive, than the trend line for the actual ozone reductions observed at Crestline. Significantly, the same holds true at almost every other monitoring site in the SCAB as well.

To check on the responsiveness of the CMAQ model, the Ramboll Analysis performed a “dynamic evaluation,” including “backcasts” using CMAQ, and modeled past ozone levels that could be directly compared on a year-to-year basis against actual monitored ozone levels. Once again, those backcasts confirmed that the CMAQ-derived trend lines were flatter and less responsive than the actual trend lines, not just with respect to forecasted ozone levels, but against past ozone levels as well. CMAQ’s lack of responsiveness is depicted in the following chart (see the orange line) for the Crestline monitoring site.



The phenomenon observed at Crestline – that both forecasted and backcasted ozone trends derived from CMAQ are flatter and less responsive than actual monitored trends—also holds at almost every other monitoring site in the SCAB. The net result is that CMAQ-modeled ozone forecasts, as developed by CARB, have been and are over-predicting future ozone levels in the SCAB. In addition, it also is clear that actual ozone levels in 2014 already were significantly lower than the ozone levels that CARB forecasted for 2023, and that the actual rates of decline in ozone levels in the SCAB (on a ppb/year basis) are greater than the CMAQ-modeled rates by a factor ranging from 2 to 8, as depicted in the following charts:



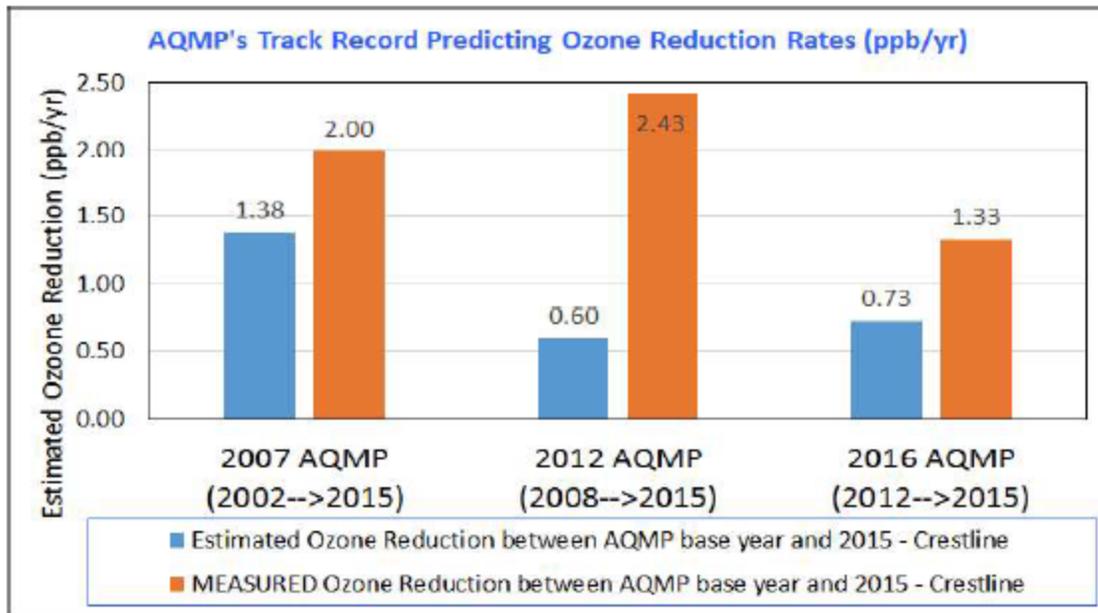
Location	Measured ΔO_3 (ppb)	Modeled ΔO_3 (ppb) [2012 AQMP]	Measured/Modeled ΔO_3
Azusa	-16	-2	8
Crestline	-18	-9	2
Fontana	-13	-2	7
Glendora	-14	-2	7
Pomona	-17	-4	4
Redlands	-14	-7	2
Riverside	-14	-6	2
San Bernardino	-19	-5	4
Santa Clarita	-8	-5	2
Upland	-14	-2	7
Basin-Wide Max	-17	-8	2

Rebutting the clear facts that the Ramboll Analysis has brought to light requires more than just a claim that CARB’s 2016 runs of CMAQ (utilizing a 2012 base year instead of a 2008 base year) will be better. Simply anchoring CMAQ in more contemporary emissions inventory data does nothing to answer the question of why CMAQ, as applied by CARB, has been consistently biased for more than 20 years in a manner that is less responsive than the actual response of ozone formation in the actual environment. Moreover, there is no evidence that CARB’s “do-overs” of its NO_x and VOC inventory estimates, and its corollary CMAQ modeling runs, yield any better forecasted results. In fact, the relevant evidence clearly suggests the contrary.

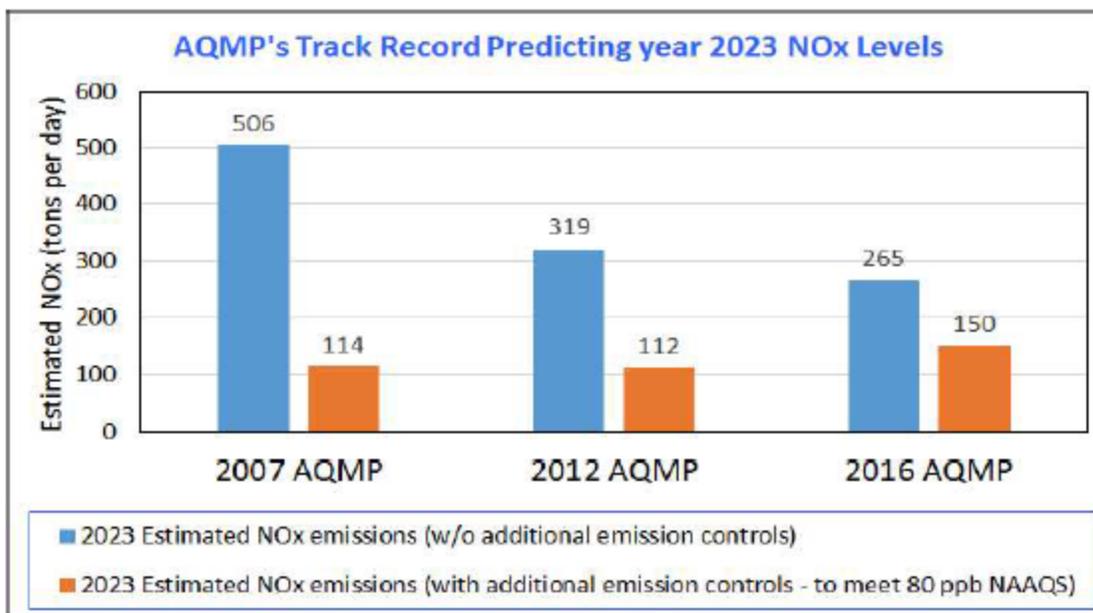
For example, just four years ago, in 2012, CARB re-ran CMAQ (utilizing a 2008 base year) to prepare its 2012 SIP submissions. By 2014 – in a span of just 2 years – the CMAQ modeled results were already off by nearly 15% at the SCAB design value site (Crestline), projecting an ozone level in 2014 of approximately 115 ppb, when the actual measured ozone level was 101 ppb in 2014. (See chart, *supra*.) Similarly, as confirmed by the just-released draft 2016 AQMP (albeit released without the necessary Appendix materials), between the time of the 2012 SIP submittals and the 2016 updates – just a 4-year time period – the estimate of the baseline NO_x inventory for 2023 dropped from 319 tpd to 265 tpd. That amounts to a 17% difference between the two modeling efforts over just a 4-year interval.

In addition, the projections of the SCAB’s NO_x carrying capacity in 2023 have increased from an estimate of 112 tpd in the 2012 SIP to an estimate of 150 tpd in the 2016 SIP – a 34% increase in the SCAB’s estimated NO_x carrying capacity in just 4 years. The estimates of the additional NO_x reductions purportedly required to demonstrate attainment are equally varied and imprecise. Specifically, the draft SIP submissions now assert that an additional 43% reduction in NO_x emissions is required by 2023. Just four years ago, however, the 2012 SIP asserted that an additional 65% reduction was necessary. That again amounts to a 34% difference or error between the estimates relating to the nearer-term ozone NAAQS attainment date. The estimates pertaining to the longer-term attainment date in 2031 are certainly even more error-prone and imprecise. Thus, based on past performance, there is no indication that the current round of CMAQ-derived predictions will prove to be more reliable than the last.

The following charts depict the manner in which CARB has been under-predicting ozone reduction rates and over-predicting NO_x levels in the SCAB since 2007, a period encompassing the preparation of three SIP submissions (and AQMPs) utilizing CMAQ.



(The AQMP ozone reductions are calculated between the base year and 2023. For the purpose of this chart, the rate of those reductions is assumed to be the same (linear) between the base year and 2015.)



In light of the consistent and significant discrepancies between modeled and measured levels of ozone and NO_x in the SCAB, CARB should not finalize or approve the 2016 SIP Strategy until such time as CARB's latest projections can be fully assessed and validated. To that end, and before seeking approval of the 2016 SIP Strategy, CARB should utilize the validation methods and analyses that U.S. EPA recommends, including "dynamic evaluations" that assess and take into account the past performance of air quality modeling efforts.

This is not simply an academic concern. The costs of erroneous projections are extremely high. In fact, the SCAQMD is anticipating that its draft AQMP will have an implementation price tag ranging from \$10-\$12 billion. Those enormous costs raise very serious questions about the unintended adverse consequences of flawed air quality modeling and emission inventory estimates. Those questions became even more pointed when the actual current rate of progress in reducing ozone levels is considered.

The draft AQMP states (at p.5-4) that the measured 8-hour ozone design value in the SCAB has been declining at a rate of 2.3 ppb per year over the 14-year period from 2001 to 2014. At that same rate, the ozone level at Crestline (which was 101 ppb in 2014) would be 80 ppb in 2023 and 62 ppb in 2031. That rate of decline would result in an ozone level that would be well below the targeted attainment level in 2031 and very near attainment in 2023, without any additional control measures whatsoever. All of this cautions against finalizing a \$12 billion SIP Strategy before each of the very significant modeling uncertainties at issue is resolved.

It is clear that CMAQ, as applied by CARB and the SCAQMD, does (and will) over-predict future ozone levels in the SCAB. Consequently, CARB's CMAQ-based assertions that an 80% reduction in NO_x emissions is required to reach NAAQS attainment, and that the NO_x standard for HDOH engines must be reduced by 90% to hit that 80% reduction target, are both derived from a significant over-prediction of what ozone (and NO_x) levels will be in 2031. From that, it also follows that CARB's intent to enter into a binding SIP commitment to adopt a new low-NO_x

standard for HDOH engines (at a 0.02 g/bhp-hr level) is based on a significantly flawed premise. The 2016 SIP Strategy should not be approved in its current form. In fact, and as noted above, given CARB's consistent history of generating over-stated results through its application of CMAQ, the 2016 SIP Strategy should not be finalized or approved until such time as CARB can complete and publish a thorough validation and dynamic evaluation of its 2016 ozone modeling efforts, as recommended by EPA.

**Underlying NO_x Inventories
Are Substantially Overstated**

CARB's estimates of future reductions in ambient levels of NO_x and total NO_x emissions, both with and without additional NO_x-control measures, are only as reliable as CARB's emission inventory assessments and models. If past is prologue, the reliability of CARB's estimates of future NO_x levels in the SCAB is highly questionable and uncertain. That uncertainty is compounded by the fact that the 2016 AQMP NO_x inventory estimates have not been available for review and public comment (specifically, Appendix III and Appendix V). Nonetheless, even without knowing what the updated and detailed 2016 numbers might be, there are a number of well-known problems with CARB's NO_x inventory estimates that need to be addressed and corrected before CARB finalizes the 2016 SIP Strategy.

Zero-Mile Emission Rates

CARB uses EMFAC to estimate real-world in-use emissions from various sources, including HDOH vehicles. CARB has utilized EMFAC to develop state-wide and district- specific NO_x inventories for several decades, and EMFAC is updated at regular intervals to make changes in modeling methods, and to incorporate the impact of new emission standards and other emission reduction programs.

The current version of EMFAC is referred to as "EMFAC2014" and was released in December of 2015. Counter-intuitively, EMFAC2014 significantly *increased* the estimate of NO_x emissions from HDOH vehicles equipped with 2010 and later model year heavy-duty engines, as compared with the previous version of EMFAC – which was referred to as EMFAC2011.

EMFAC's estimate of the in-use emissions from HDOH vehicles takes several factors into consideration, including vehicle type, mileage, speed, load and deterioration. The fundamental underlying emission rate, however, is referred to as the "zero-mile rate" or "ZMR." The ZMR is meant to represent the emission rate for new (and relatively new), well-maintained HDOH vehicles operating on California roads, and is subject to various adjustment factors, including speed correction factors. The ZMR is expressed in units of grams/mile ("g/mi") and varies with vehicle size, tare (unloaded) weight, and load factor. All else being equal, the ZMR increases with vehicle size, tare weight and load factor.

The certified emission rates for HDOH vehicles and engines are different and utilize a different metric. HDOH engines are certified separately on an engine dynamometer to standards expressed in units of grams/brake horsepower-hour ("g/bhp-hr"). Since the denominator for this standard is, in essence, work performed, the standard can be a constant, and does not vary with engine size or power rating.

The historical “rule of thumb” is that the in-use NO_x emissions from a Class 8 line-haul truck (which are in units of g/mi) operating on California roads over a duty cycle similar to the certification test procedure (i.e., the “UDDS transient cycle”) are generally assumed to be 3.5 times the engine dynamometer-based certification emission standard (which is in units of g/bhp-hr). This “rule of thumb” ratio, or conversion factor, is a function of calculating (g/mi)/ (g/bhp-hr) or bhp-hr/mi, and, generally, represents the work needed to move a Class 8 line-haul truck one mile.

The NO_x emission standard for 2010 and later model year heavy-duty engines is 0.20 g/bhp-hr. Therefore, the general “rule of thumb” estimate of the in-use ZMR NO_x emission rate for a Class 8 line-haul truck over the representative UDDS duty cycle is 0.70 g/mi (0.20 x 3.5 = 0.70).

Significantly, the ZMR for 2010 model year and later Class 8 line-haul trucks that is used in EMFAC2014 is 1.89 g/mi. Obviously, this is much higher – nearly three (3) times higher – than the “rule of thumb” estimate (which, as noted, would be 0.70g/mi). By contrast, the analogous ZMR in the prior version of EMFAC (EMFAC2011) was 1.14 – markedly lower than the EMFAC2014 value. This calls into question whether the ZMR for HDOH vehicles in EMFAC2014 is materially over-estimating the actual emissions from 2010 and later model year HDOH vehicles.

The EMFAC2014 ZMR for HDOH vehicles was based on very limited testing that CARB and the SCAQMD conducted at CARB’s chassis-dynamometer test facilities in Los Angeles. Specifically, eight HDOH vehicles were tested, three powered by engines certified to the 2007 through 2009 model year requirements, and just five certified to the 2010 and later standards. Of those five engines, however, only two (2) were actually certified to the 0.20 g/bhp-hr NO_x standard; the other three used emissions credits and were certified to a level above the 0.20g/bhp-hr NO_x standard. Further, the two engines certified to the 0.20 NO_x standard – already an unreasonably small sample size – were both produced by the same engine manufacturer.

The first of those two 0.20g vehicles was powered by a 2010 model year engine, and recorded a 1.95 g/mi NO_x level when tested over the UDDS test cycle. The second vehicle was powered by a 2011 model year engine, and yielded a 1.98 g/mi NO_x level when operated over the UDDS cycle. As noted, the UDDS cycle is a chassis-dynamometer-based test cycle that, when the proper loading is applied to the vehicle being tested, is reasonably similar to the engine-dynamometer transient certification test.

Due to the important policy and regulatory impacts of EMFAC modeling, as well as in light of the very small number of vehicles – just two – on which CARB’s ZMR result is based, EMA arranged for a follow-up ZMR study. EMA contracted with CE-CERT to perform the ZMR study, and coordinated with CARB in setting up the test plan to ensure that the results could be directly compared against the results of the original CARB/SCAQMD ZMR study.

Based on the joint input from EMA and CARB, the CE-CERT study involved testing five late-model year, low-mileage heavy-duty line-haul vehicles produced by a variety of manufacturers that participate in the HDOH market. The same battery of tests as run in the original ZMR study were performed at CE-CERT with the vehicles loaded to the same level and otherwise tested under the same circumstances. CARB requested and arranged to have three of the five vehicles tested at its Los Angeles facility.

The average validated results for the vehicles tested at CE-CERT yield a significantly different result than what is assumed in EMFAC2014. Specifically, the average “rule of thumb” or conversion ratio – that ratio being the UDSS value divided by certification NO_x standard of 0.20 -- of the HDOH vehicles tested and validated at CE-CERT is 4.04, reasonably close to the expected “rule of thumb” scaling factor of 3.5. That corresponds to an average UDSS level of 0.81 g/mi. Since the tested vehicles all had low accumulated mileage, the 0.81 g/mi value would be a good approximation for the ZMR. That value is well below – more than two times below -- the EMFAC2014 ZMR value of 1.89 g/mi, and provides clear evidence that the current version of EMFAC is programmed in a manner to yield materially over-stated estimates of future-year NO_x emissions. EMFAC clearly needs to be revised.

Unreasonable TM&M Rates and Impacts

EMFAC2014’s incorporation of unreasonably over-estimated tampering, malfunction and malmaintenance (“TM&M”) rates, and its inclusion of unreasonably over-estimated emission increases ascribed to those incidences of TM&M, also raise significant concerns regarding the model’s accuracy. In that regard, CARB did not update the TM&M assumptions that were used in the earlier versions of EMFAC. Those assumptions, however, are based principally on surveys of trucking fleets and repair facilities conducted in 1988 (a study conducted for CARB by Radian Corporation) and in 1998 (a study for EPA conducted by Engine, Fuel and Emissions Engineering, Inc.) – surveys prepared some 28 and 18 years ago. Quite obviously, those earlier surveys are long out-of-date, and include many assumptions that no longer pertain to recent and current model year HDOH vehicles that operate with advanced electronically-controlled after-treatment systems, fully integrated and comprehensive OBD systems, and multiple “inducements” to ensure emissions compliance.

An example of the out-of-date TM&M assumptions that CARB continues to rely on in the current version of EMFAC is set forth in the attached “Appendix C” from CARB’s earlier technical support document for EMFAC. That Appendix lists the assumed lifetime TM&M rates and NO_x emissions impacts for 2010 and later model year HDOH engines. Even with OBD requirements factored in, CARB assumes that over the assumed 1,000,000-mile life of a HDOH vehicle, more than 40% of those miles will be driven by vehicles having a failed NO_x sensor, and that more than 12% of all miles will be driven by HDOH vehicles with a continuously malfunctioning NO_x aftertreatment system, yielding a 200% to 300% increase in NO_x emissions over all of those miles. Those types of over-stated and outdated assumptions have a very material impact on the modeled level of future NO_x emission inventories. In fact, the net effect of those TM&M assumptions is that the modeled NO_x level for each and every 2010 and later model year vehicle increases by .07 g/mi every 10,000 miles, starting off at near 2 g/mi and ending up (at the 1,000,000 mile mark) at 9 g/mi. That is more than 11 times higher than the reasonable ZMR of 0.81 g/mi for the relevant HDOH vehicles.

In an effort to improve EMFAC (and thereby avoid the unreasonable consequences of inaccurate and overstated emission inventories), EMA is working to develop better and more accurate information relating to actual TM&M rates for recent and current model year HDOH engines, and the likely resultant impacts on emissions from potential incidences of TM&M. Such an updated database would enable EMFAC to incorporate actual rates (and declining trends) of malfunctions for current HDOH vehicles, coupled with current assessments of emissions impacts, as opposed to CARB’s assumed rates based principally on surveys conducted in 1988 and 1998.

CARB's assumptions, and the current EMFAC model, also fail to account for the mitigating effects of comprehensive OBD systems as well as the advanced "inducement" systems that de-power or disable the re-start function of HDOH vehicles that are experiencing potential emission-related problems, specifically those that could increase NO_x emissions. The inducements that EPA and CARB require as a condition for the certification of current model HDOH vehicles preclude any significant amount of miles of operation of any HDOH vehicle that has any malfunctioning SCR-related components. Those inducements, and the related OBD requirements, do not expire or shut-off at 500,000 miles (as implicitly assumed in EMFAC), and quite simply eliminate many if not all of the most significant NO_x increases from TM&M that CARB is still including in EMFAC – again, based on studies dating back to 1988. Indeed, as CARB itself noted in its January 2013 Field Evaluation Report:

CARB staff believes that companies and truck operators will simply not tamper with the HDD vehicles and risk costly repairs and/or possible fines, especially when those vehicles will cause the engine's power to degrade causing delivery delay and general inconvenience.

EMFAC's increase in NO_x emissions for 2010 and later HDOH vehicles by multiples of the underlying emission standard after 500,000 miles is significantly over-stated and will drive unreasonable and significantly over-stated estimates of future NO_x inventories. EMFAC must be revised to account for the mitigating impacts of comprehensive OBD systems and inducements. Otherwise, CARB's SIP Strategy will be premised on unreasonable emissions data, in addition to flawed modeling.

**CARB's Intent to Pursue
Separate GHG Standards For
Vocational Vehicles Is Misguided**

The 2016 SIP Strategy also includes CARB's proposed commitment to adopt medium and heavy-duty GHG "Phase 2" standards to harmonize with the GHG "Phase 2" standards that U.S. EPA will finalize near the end of July. However, CARB's proposed SIP commitment goes well beyond harmonization. Specifically, CARB's proposal "may include some more stringent, California-only provisions that are necessary to meet California's unique air quality challenges. For example, the California Phase 2 proposal may layer additional requirements for vocational vehicle aerodynamics onto the federal Phase 2 program." (2016 SIP Strategy, p.52.)

CARB should not include a California Phase 2 proposal in the 2016 SIP Strategy, which is focused on ozone attainment in the SCAB. Such a proposal is not germane to the SIP process, is not necessary, and is not reasonable. Full harmonization between U.S. EPA and CARB on the anticipated Phase 2 GHG standards is a basic prerequisite to their feasibility and cost-effectiveness. Separate CARB standards therefore are directly at odds with the core Phase 2 rulemaking premise that there will be one nationwide set of next-phase GHG standards. Further, the notion that there are additional enhanced requirements for "vocational vehicle aerodynamics" that CARB can devise and implement in a feasible and cost-effective manner is unfounded. Vocational vehicles are not suited to an enhanced "layer" of aerodynamic demands. Those vehicles spend a significant percentage of time in parked-idle or drive-idle modes; they routinely engage in stop-and-go operations; they typically operate at non-highway speeds and in non-cruise driving modes; and they otherwise operate on (and are certified on) urban and multi-purpose drive cycles that do not

lend themselves to enhanced aerodynamics. Indeed, less than 5% of vocational vehicles operate on the regional duty cycle that theoretically might accommodate increased aerodynamic performance.

Further, as expressly conceded in the 2016 SIP Strategy (see id. at p.52), CARB has not attempted to quantify the “criteria emission reductions” that might result from California-only Phase 2 requirements. Thus, in addition to being entirely out of context in an ozone SIP Strategy, CARB’s envisioned Phase 2 GHG add-ons are not calculated to yield any benefits for the attainment demonstrations at issue.

More fundamentally, U.S. EPA – which has the same regulatory objective as CARB – has carefully examined the appropriate Phase 2 GHG standards for vocational vehicles. EPA has determined properly that, for all the reasons noted above (and more), enhanced aerodynamic requirements are not appropriate for vocational vehicles. CARB should not assume in its SIP Strategy that a different conclusion is warranted.

Conclusion

The 2016 SIP Strategy, as it relates to HDOH engines and vehicles, is premised on significant over-estimations of future NO_x and ozone levels in the South Coast Air Basin (“SCAB”). CARB has derived those over-estimations from an outdated version of EMFAC and from its application of the Community Multi-Scale Air Quality (“CMAQ”) model, which consistently has over-predicted future ozone levels in the SCAB over the past 25 years, including as recently as 2012 when CARB developed its last SIP submissions. In light of those consistent over-predictions of NO_x and ozone, CARB’s assertion that ozone attainment in 2031 requires an additional 90% reduction in NO_x emissions from HDOH engines and vehicles – over and above the rigorous NO_x-control regulations that are already in place – is simply incorrect. While some future HDOH emission requirements may prove to be warranted and reasonable, the assumed premise for adopting a 90% lower NO_x standard in 2019 is fundamentally flawed. As a result, the 2016 SIP Strategy needs substantial revision, and should not be approved or adopted in its current form.

Similarly flawed is CARB’s intended adoption of unique California-only Phase 2 GHG requirements for vocational vehicles. Separate California GHG requirements are directly at odds with the core premise of the pending U.S. EPA rulemaking for a nationwide Phase 2 GHG program, and are inherently unreasonable given the aerodynamic constraints under which vocational vehicles operate.

EMA appreciates the opportunity to submit these comments on the 2016 SIP Strategy, and we look forward to working with CARB staff to improve the accuracy of the underlying CMAQ and EMFAC models.

Respectfully submitted,

TRUCK AND ENGINE
MANUFACTURERS ASSOCIATION

Appendix C. Frequency of Occurrence of T&M and Malfunction and Resulting Emission Impact for 2010+ Model Year HHDD Trucks

Tampering and malmaintenance (T&M) and malfunction rates were developed for the model year group of 2010 and subsequent model year heavy-duty vehicles. This appendix provides a description of the frequency of occurrence of T&M and malfunction categories and the resulting emission impact for 2010+ model year HHDD trucks (further detail can be found in the staff report for the HDV OBD regulation; see Footnote 4 of this memo).

Frequency of Occurrence Rates

The table below shows the revisions to the frequency of occurrence of T&M and malfunction categories for 2010+ model year group.

Table C1. Frequency of Occurrence of T&M and Malfunction Acts for 2010+ HHDDTs^a

EMFAC2002		Revised		
T&M Act	2003+	T&M and Malfunction Act	2010+	
			No OBD	w/ OBD
Timing Advanced	2%	Timing Advanced	2%	1.33%
Timing Retarded	2%	Timing Retarded	2%	1.33%
Minor Injector Problem	8%	Injector Problem (Minor/Moderate/Severe)	13%	8.67%
Moderate Injector Problem	5%	NOx Aftertreatment Sensor	52.7%	40.1%
Severe Injector Problem	0%	Replacement NOx Aftertreatment Sensor	1.8%	10.8%
Puff Limiter Misset	0%	PM Filter Leak	13.9%	9.75%
Puff Limiter Disabled	0%	PM Filter Disabled	2%	1.33%
Max Fuel High	0%	Fuel Pressure High	0%	0%
Clogged Air Filter	15%	Clogged Air Filter	15%	10%
Wrong/Worn Turbo	5%	Wrong/Worn Turbo	5%	3.33%
Intercooler Clogged	5%	Intercooler Clogged	5%	3.33%
Other Air Problem	8%	Other Air Problem	8%	5.33%
Engine Mechanical Failure	2%	Engine Mechanical Failure	2%	1.33%
Excessive Oil Consumption	3%	Excessive Oil Consumption	3%	2%
Electronics Failed	3%	Electronics Failed	30%	20%
Electronics Tampered	5%	Electronics Tampered	5%	3.33%
Catalyst Removed	0%	Oxidation Catalyst Malfunction/Removed	5%	3.33%
EGR Stuck Open	0%	NOx Aftertreatment Malfunction	17.1%	12%
EGR Disabled	10%	EGR Disabled/Low Flow	20%	13.3%

a. Revised values shown in boldface (see text for discussions).

For the frequency of occurrence rates in Table C1, staff modified several of the existing components to better reflect the technology that is expected to be used on 2010 and subsequent engines as well as to account for malfunction of components in addition to tampering or malmaintenance. Specifically, staff added categories for PM filter leaks, missing/tampered PM filters, NOx aftertreatment system malfunctions, and NOx aftertreatment control sensor malfunctions. Staff eliminated the categories deemed to be not applicable to 2010+ model years, such as puff limiter misset, puff limiter disabled, and EGR stuck open. Staff also merged minor, moderate, and severe injector problems into a single injector problem category, expanded EGR disabled to include EGR low flow/performance malfunctions, and modified the category for catalyst removed to oxidation catalyst malfunction/removed. The frequency of occurrence in Table C1 represents an average failure rate over the life of the 2010+ model year vehicles.

For the baseline "without OBD" values, staff estimated various failure rates for the categories. For the existing categories in the table (except for the electronics failed category), staff did not modify the estimated failure rates. However, for the added and modified categories staff estimated failure rates based on information from manufacturers, suppliers, and, where appropriate, experience with similar components in light-duty. In all cases, staff assumed any failures occurring during the warranty period would be fixed immediately, and thus a failure rate of 0% was assumed during the warranty period.

For EGR, staff increased the failure rate from 10% to 20% to account for nearly every engine using EGR in the 2010 timeframe and for the increased sensitivity and reliance to proper EGR performance on those engines. For the oxidation catalysts, staff increased the failure rate from 0% to 5% to account for nearly every engine being equipped with a catalyst, for combining oxidation catalyst performance malfunctions with oxidation catalyst tampered/removed into a single category, and for the increased sensitivity and reliance on proper oxidation catalyst performance to achieve PM filter regeneration.

For the electronics failed category, staff increased the frequency of occurrence from 3% to 30% to account for the significant increase in complexity of the 2010+ emission control systems. For these engines, a substantial number of sensors (e.g., temperature, mass air flow, pressure) and actuators (e.g., intake or exhaust throttles) are being added and other components have become more complex (e.g., high pressure common rail fuel injection system components, variable geometry turbos). In addition to actual sensor or actuator failures, each sensor and actuator has additional circuits and wiring that increase the chance for a failure in-use.

For the added category of PM filter leak, staff estimated a failure rate that increased over time starting with an approximately 6% failure rate at the end of useful life (~450,000 miles) and ramping up to a failure rate of 37% at 1,000,000 miles. In setting this failure rate, staff largely discounted the high failure rates currently being observed in the heavy-duty fleet (both OEM-equipped and retrofit) and estimated much more conservative failure rates. For the category of PM filter disabled (largely due to tampering), staff assumed a rate of only 2%.

At present, two competing NOx aftertreatment technologies are being considered for 2010 model year applications. Accordingly, staff analyzed both systems and their associated components. It was assumed that a blend of the two would exist in the fleet, with some using a selective catalytic reduction (SCR) system with a single NOx control sensor and reductant delivery (e.g., urea) and some using a NOx adsorber system with upstream and downstream air-fuel (A/F) control sensors. For the category of NOx aftertreatment in Table C1, staff grouped together the SCR catalyst and the components associated with reductant storage and delivery or, in the case of an adsorber system, included failures of the adsorber itself. For these failures, staff again estimated a failure rate that increased over time. The failure rate for this category was ramped in starting with a 10% failure rate at 500,000 miles (50,000 miles beyond useful life) to a 50% failure rate by 1,000,000 miles. While failures of an SCR catalyst itself may be fairly limited, the associated hardware includes urea tank, tank heaters, in-exhaust injector, compressed air delivery to the injector, and urea supply pump and control system are all components subject to malfunction and can have the same emission impact as an SCR catalyst failure. In assuming that only half of the trucks left on the road at 1,000,000 miles will have experienced a failure of any one of these components at some point in its 1,000,000-mile life, staff believes the estimate is fairly conservative. For an adsorber system, the adsorber itself will likely have a significant failure rate in a 1,000,000-mile timeframe given the sensitivity to thermal damage and the need for periodic desulfation that must be conducted at temperatures extremely close to the thermal damage point. Further, each desulfation event will likely slightly deteriorate the performance of the adsorber leading to an eventual fail on some share of the engines. In some cases, adsorber systems may also rely on in-exhaust injectors, fuel supply lines, control, and metering systems that are subject to malfunction and can have a similar emission impact.

For the two NOx aftertreatment control sensor categories, a two-part failure rate was estimated and modeled as two separate categories. For SCR systems using a single NOx control sensor, the model assumes the sensor has an initial fail, some portion of those sensors are replaced, and a second fail occurs later in the life of the new sensor. For NOx adsorber systems with two A/F sensors, the model assumes one of the two sensors has an initial fail, some portion of those sensors are replaced, and a second fail occurs later in the life of the engine which could be either a failure of the replaced sensor or a an initial failure of the other A/F sensor on the vehicle.

For the initial failure in both systems, a single failure of a control sensor was estimated to ramp in starting with a 35% failure by 250,000 miles and peaking at a 90% failure rate after a subsequent 200,000 miles (i.e., by 450,000 miles). Staff based these failure rates on discussions with engine manufacturers expressing concern that they had not been convinced that NOx sensor durability was sufficient to last 100,000 miles, much less the useful life period of 450,000 miles. Discussions with sensor suppliers suggest significant potential for further improvement in durability over the next few years. Accordingly staff assumed essentially a 0% failure rate for twice the current expected life of the sensor before ramping the failure up to near complete failure at 4.5 times the current expected sensor life. Further, A/F sensors are commonplace in light- and medium-duty vehicles and Inspection and Maintenance (I/M) program data indicates these sensors are failing in I/M on approximately 2.5% of the fleet at 100,000 miles. Assuming this failure rate were to grow linearly at a failure

rate of 2.5% per 100,000 miles, that would represent a cumulative failure rate of 7.5% at 250,000 miles. Additionally, this 2.5% failure rate only includes the subset of vehicles with a malfunctioning A/F sensor vehicles that ignore an illuminated warning light and actually fail the I/M test. Data from non-I/M areas would support that the actual in-use failure rate is higher than that and is a result of a portion of the people fixing the vehicle prior to the I/M test. When adjusting that number to reflect the more realistic situation that the failure rate increases non-linearly over time, that the actual in-use failure rate in light-duty is actually higher than the 2.5% that show up in I/M, and that each engine with a NOx adsorber system is projected to use two A/F sensors, a 35% failure rate at 250,000 miles is reasonable. To further assume that 90% of the sensors will have failed once by 450,000 miles is consistent with a continued increase of the failure rate and engine manufacturers' expressed opinions that the sensors will not last through the useful life. This initial failure of the control sensor is represented in the category for NOx Aftertreatment Sensor.

The second part of the failure rate for the NOx aftertreatment control sensor categories estimates the percentage of the fleet that will repair/replace the first failed sensor and then experience a subsequent failure of the repair/replaced sensor while still within the first 1,000,000 miles of the engine life. For this failure rate, staff assumed the same sensor durability and failure rate (i.e., failure rate ramps in at 35% beginning 250,000 miles after the previous sensor repair/replacement and peaks at 90% after an additional 200,000 miles) but only applied it to the fraction of vehicles which were estimated to already have a failed sensor and a subsequent repair. This second part of the failure rate of the control sensor is represented in the category for Replacement NOx Aftertreatment Sensor.

OBD Repair Rate

While the frequency of occurrence rates shown in Table C1 are a single number that represents the average failure rate, or probability of occurrence, the model actually assumes that there are constantly some additional failures and repairs that are occurring in the fleet. For the baseline (without OBD) scenario described above, these numbers represent the failures that are above and beyond what is being routinely repaired in the field.

To account for the adopted HD OBD program, staff estimated a repair rate for all the categories in Table C1. A 33% reduction in the frequency of occurrence across all categories was estimated to simulate the malfunctions that are repaired due to the presence of the OBD system. The rationale for the 33% repair rate was that all the malfunctions estimated in the categories would likely result in MIL illumination. It is expected that some fraction of vehicle owners or operators would take repair action simply because they were alerted to the presence of a malfunction by the MIL. Additionally, California has two inspection programs that are applicable to heavy-duty vehicles. First, the heavy-duty vehicle inspection program (HDVIP) conducts roadside testing and issues citations or notice-of-violations for trucks that fail either a snap-idle opacity test or a visual inspection. This inspection program currently tests about 6% of the heavy-duty fleet in California. Secondly, California has a fleet annual self-inspection program whereby all fleets (defined as anybody with two or more trucks) are required to perform self-inspections for snap-idle opacity on an annual basis, repair any vehicles that fail the inspection, and retain records of the inspection for review by ARB inspectors. Currently, about 75% of the California fleet is subject to this fleet self-inspection.

While both programs are currently focused on smoke emissions and visual tamper inspections, it is expected that they will both be updated to include an inspection of the OBD system and to fail vehicles that have an illuminated MIL. When combining these three factors together (voluntary response to an illuminated MIL, HDVIP inspections, and fleet self-inspections), staff believes it is fairly conservative to expect that one third of the illuminated MILs will be repaired.

Staff also considered that some malfunctions could also cause degraded drivability, performance, or fuel economy, and those impacts would also influence the repair rate. However, as stated above, these failure rates already assume that additional failures and repairs are currently occurring in the fleet and will continue to. Furthermore, in analyzing the categories created by staff, the failures with the largest emission impacts (e.g., PM filter malfunctions and NO_x aftertreatment related categories) are not expected to have an adverse impact on drivability or performance and may actually result in an improvement to fuel economy, thus negating any additional incentive to repair the detected malfunction.

Malfunction Emission Rates

Staff also modified the associated emission rates for each of the categories of Table C1 to better reflect the best estimates available at this time based on the expected 2010 and subsequent emission control systems. For the existing categories that result in an increase in PM emissions, staff reduced the estimates for the PM emission increases by a factor of 0.95 based on the expectation that all 2010 engines will be equipped with a PM filter which will trap 95% of any engine-out increases in PM. For the added categories of PM filter leaks and PM filter missing/tampered, staff estimated PM increases of 600% and 1,000%, respectively. For the PM filter leaks, this represents an emission level of 0.07 g/bhp-hr, which is above the adopted OBD threshold of 0.05 g/bhp-hr but reflects industry's contention that most PM filter leaks will rapidly grow beyond a small leak. For the category of PM filter missing/tampered, staff estimated the emissions would approach that of an engine without a PM filter for an increase of 1000% (to 0.10 g/bhp-hr).

For HC emission rates for the existing categories, staff estimated the presence of larger oxidation catalysts to achieve sufficient exotherms for PM filter regeneration would convert 50% of any increases in engine-out HC rates and thus reduced the HC emission increases by a factor of 0.5. For the added categories related to PM filters and malfunctions associated with NO_x aftertreatment or the aftertreatment control sensors, staff assumed a small HC increase due to reduced conversion of HCs within the PM trap itself or improper reductant malfunctions (e.g., overdosing fuel in a NO_x adsorber system). For a malfunction of the oxidation catalyst itself, staff assumed a 50% increase in HC emissions.

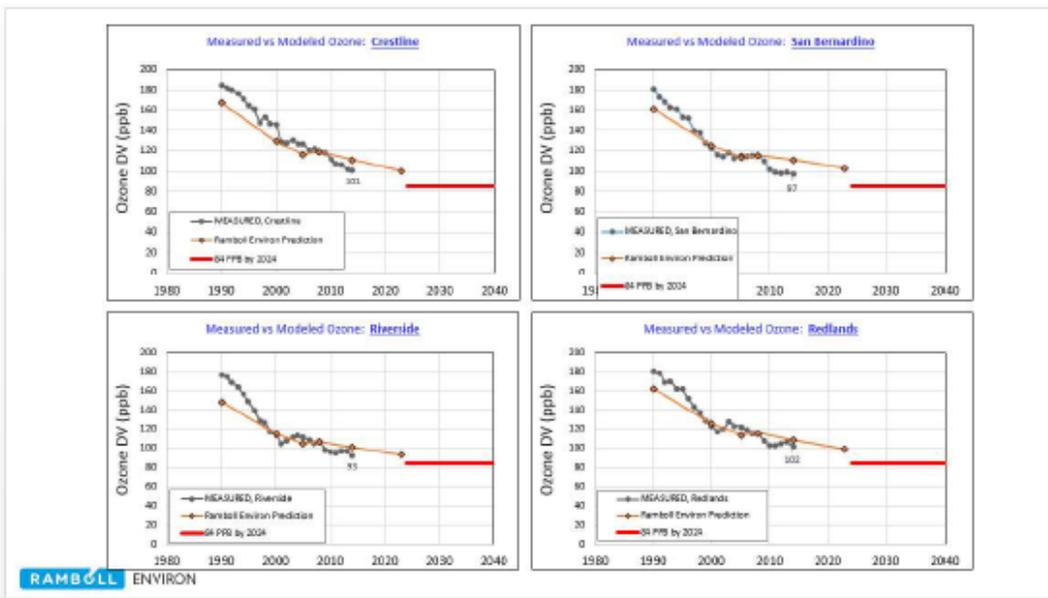
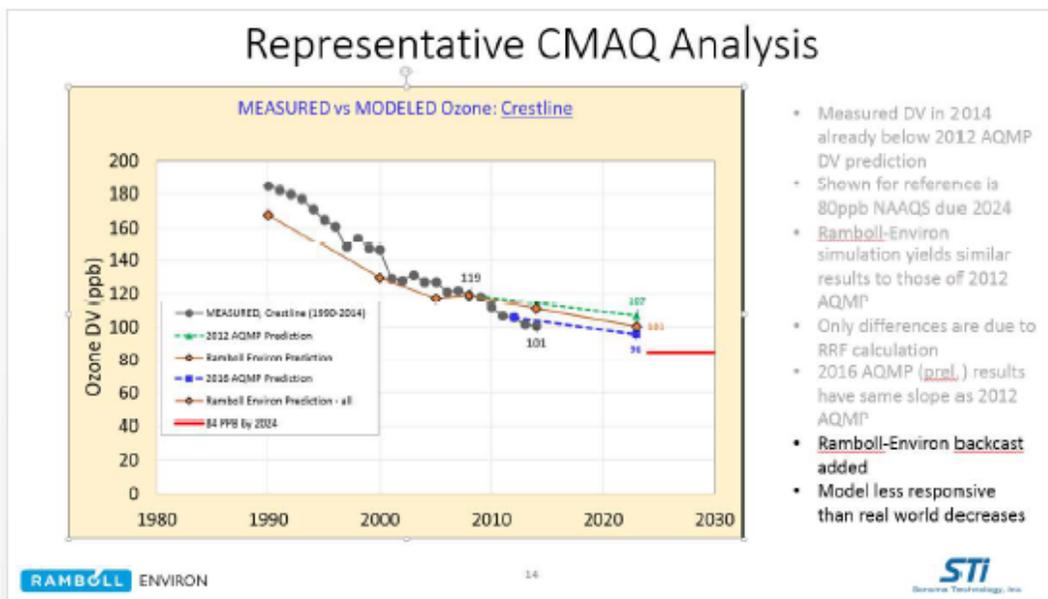
For NO_x emission rates for those existing categories, staff estimated that engine-out NO_x increases would be reduced by the presence of NO_x aftertreatment to varying degrees. For smaller engine-out NO_x increases, the aftertreatment was estimated to convert 75% of the excess NO_x (thus reducing the emission rate by multiplying by a factor of 0.25). For larger engine-out NO_x increases, a lower aftertreatment conversion efficiency (65%) was used to reflect the reduced ability of the system to handle large feed gas concentration increases. For the added categories of NO_x aftertreatment control sensors, an emission increase of

200% (to a tailpipe emission level of 0.6 g/bhp-hr NO_x) was assigned based on the assumption that a loss of feedback control (either a NO_x sensor for SCR or an A/F sensor for an adsorber) would result in significantly lower NO_x conversion rates because the system would likely shut off reductant delivery or go into a conservative open loop operation that injects minimal reductant to minimize the risk of overdosing or inefficient use of reductant. For the added category of NO_x aftertreatment, a failure was calculated to have a 300% increase (to reflect a tailpipe emission level of 0.8 g/bhp-hr NO_x). This represents an intermediate level between an MIL failure (at 0.5 g/bhp-hr) and a complete loss of NO_x aftertreatment (at 1.2 g/bhp-hr). Considering that this category includes failures of the SCR catalyst or adsorber itself as well as failures of the reductant delivery system (exhaust injectors, reductant tank, reductant delivery lines, reductant metering, reductant heaters, and compressed air delivery system), many of which would likely result in shutting off reductant delivery or defaulting to open loop operation, a 300% emission increase seems to be appropriate. Staff also adjusted the emission rates and frequency of occurrence rates for both the NO_x aftertreatment system category and the NO_x aftertreatment sensor categories to properly account for the combined emission impact (e.g., an engine with a failure in both categories will get a 300% NO_x increase, not a combined 200% NO_x increase from the aftertreatment control sensor failure and an additional 300% NO_x increase from the aftertreatment failure). Lastly, while there is a category for EGR malfunctions in EMFAC, the NO_x emission increase associated with an EGR failure was previously set to a 0.0% increase. This was modified to a NO_x emission increase of 150% (to a tailpipe level of 0.5 g/bhp-hr NO_x). This emission rate was calculated by assuming a complete loss of EGR would cause engine-out NO_x to go from 1.2 to 2.4 g/bhp-hr for an increase of 1.2 g/bhp-hr and then assuming that the NO_x aftertreatment would convert 60% of that increase leaving a tailpipe increase of 0.48 g/bhp-hr. Thus, EGR failures were estimated to range from the OBD MIL on point of 0.3 g/bhp-hr to a complete loss of EGR at 0.68 g/bhp-hr with a nominal middle failure point of 0.5 g/bhp-hr.

EXHIBIT B

Excerpt from Presentation given by Ramboll-Environ to ARB and SCAQMD

- See linearity of CMAQ ozone predictions between 2008 and 2023, demonstrated by equal slopes between 2008-2014 and 2014-2023, for all monitoring sites analyzed.



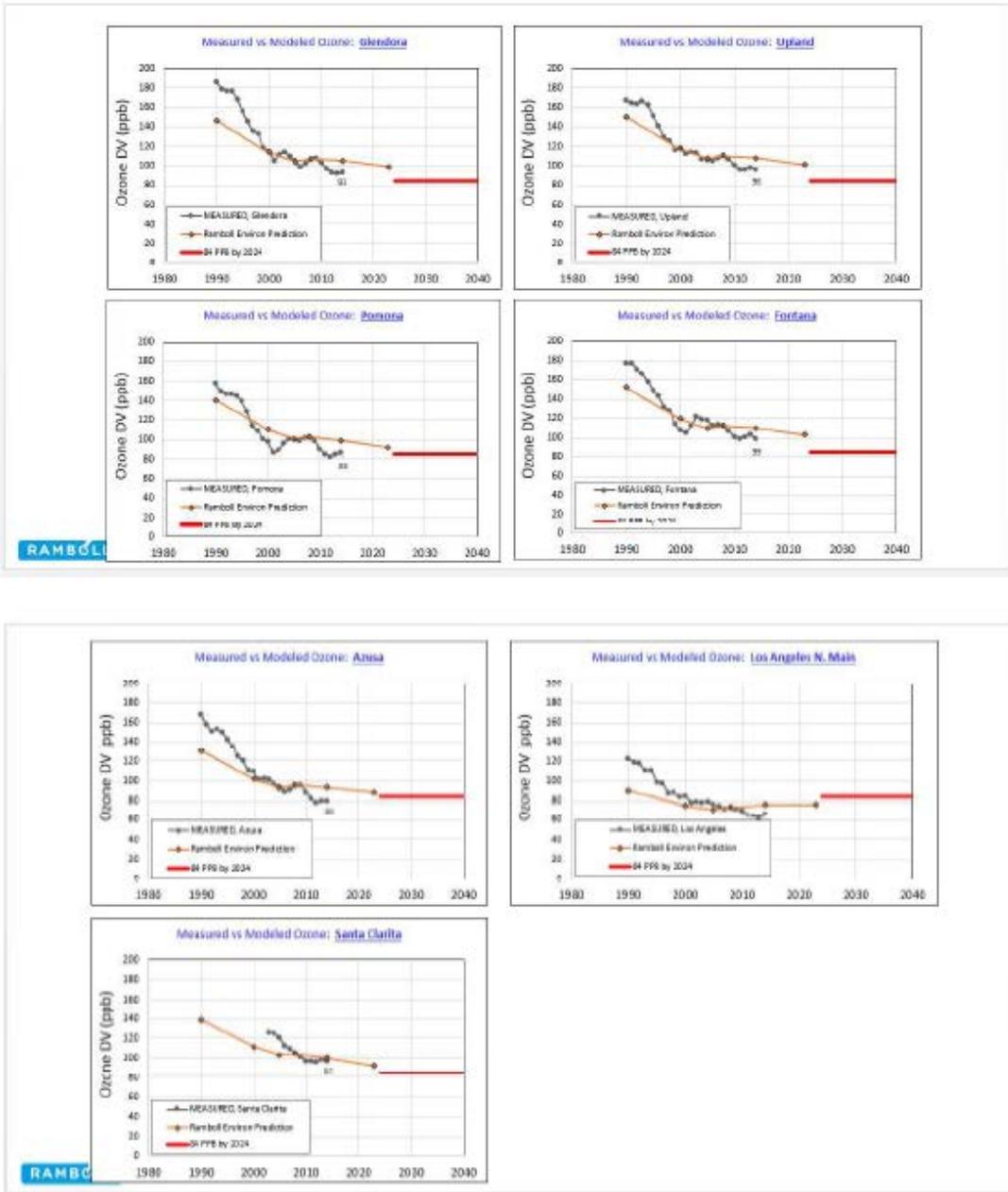


EXHIBIT C

STATEMENT OF WORK

As requested by EMA, Ramboll Environ (RE) is pleased to provide a scope of work for additional modeling and analyses to determine how well the South Coast Air Basin (SoCAB) AQMP modeling tracks observed historic ozone trends as well as to determine ozone trends in recent and future years. The objectives of the new work are to:

- Extend the preliminary EMA dynamic evaluation study that was previously conducted using the 2012 AQMP modeling database with dynamic evaluation using the latest 2016 AQMP modeling database (expected to be available in June 2016)
- Conduct emissions reconciliation analysis of the South Coast emissions inventories
- Investigate weaknesses in EMFAC emission predictions
- Conduct uncertainty analysis on emissions and boundary conditions
- Apply EPA techniques to reduce forecasting errors
- Prepare presentation and conference paper and present the results at the 15th annual Community Modeling Analysis System (CMAS) conference in October 2016
- Publish the results of the study in a peer-reviewed journal.

The tasks that will be performed to accomplish these objectives are described below.

Task 1: Dynamic Evaluation

In the preliminary EMA study with the 2012 AQMP modeling database (2008 base year), RE conducted dynamic evaluation of the modeling system by calculating design values for historical years (1990, 2000, 2005) and a current year (2014), using 2008 as the base year. The trends in modeled and observed ozone design values were compared and the comparison showed that the modeled ozone concentrations were generally significantly less responsive (i.e., stiffer) to emissions changes over the years than observed in the measurements. However, the 2012 AQMP database is now dated and SCAQMD is expected to release the modeling database for the 2016 AQMP (2012 base year) in June 2016. The objective of this task is to determine if the "stiffness" noted previously with the 2012 AQMP has been corrected in the latest AQMP or if modeled ozone reductions still tend to be smaller than the measured reductions.

The following activities will be conducted in this task:

- Develop gridded model-ready emissions for the summer ozone season (June through August) and historical years 1995, 2000, 2005, and 2008 and a recent year (2014 or 2015). As in the preliminary EMA study, RE will use the model-ready emissions for base year 2012 from the 2016 AQMP and the most current estimates of total basin-wide emissions for the historical and recent years to develop the model-ready emissions for these years
- Conduct CMAQ simulations for the summer season of 1995, 2000, 2005, 2008, 2012 (base year), and 2014/2015 using the exact same version of CMAQ used in the 2016 AQMP. The meteorology for all years will be for the base year (2012) following the same approach that is used in projecting future year design values.

- Compare modeled changes in summer season ozone design values from 1995 to 2014/2015 with observed changes for key monitoring locations:
 - Trends in ozone design values
 - Bar graphs and tables showing ppb/decade reductions

Task 2: Emissions Reconciliation Analysis and Review of Satellite Measurements

This task will primarily be performed by STI under subcontract to Ramboll Environ. STI's scope of work for their activities under this task (including a presentation at the 2016 CMAS conference and a peer-reviewed journal article) is provided as an attachment to this SOW. RE will provide the necessary modeling data (CMAQ predictions, gridded emissions) to STI for their analysis. In addition, RE will conduct a detailed literature review of recent studies using satellite measurements to infer NO_x emission trends in the South Coast and compare the trends from these studies with those from the South Coast emission inventories. A quick review of some satellite measurement papers indicates that the inventories may be underestimating the reductions in SoCAB NO_x emissions over time.

Task 3: Investigate EMFAC limitations

On May 15, 2015, the California Air Resources Board (CARB) released an updated version (v1.0.7) of the EMFAC2014 model to the public. Subsequently, on December 14, 2015, EPA approved the use of EMFAC2014 for State Implementation Plan (SIP) and conformity purposes. The EMFAC model estimates emissions from all types of light- and heavy-duty on-road vehicles in California based on emission rates by vehicle technology and assumptions about vehicle population and vehicle activity (e.g. vehicle miles travelled or VMT, number of starts, idle hours).

According to the EMFAC2014 web database, heavy-heavy duty diesel trucks (HHDT; 33001 to 60,000 pounds gross vehicle weight rating; hereafter referred to as HD diesel vehicles) comprise 32% of NO_x emissions from on-road vehicles in the SoCAB. In EMFAC2014, emission rates and speed correction factors for heavy duty diesel trucks meeting 2007 and 2010 emission standards are based on emission testing conducted by CARB and SCAQMD of only six 2010 and later HD diesel vehicles (EMA Memorandum from Tim French, 2014). These data are only partially representative of the technology or typical suite of HD diesel vehicles in-use. Furthermore, the EMFAC estimates of HD diesel vehicle tampering, malfunction and malmaintenance (TM&M) rates, which increase emissions from HD diesel vehicles over the life of the vehicle, are based on dated (1988 and 1998) data (EMA, 2014). These estimates do not reflect the advances in technology (after-treatment systems, fully integrated OBD systems) and other measures (multiple "inducements" to ensure emission compliance) that have been implemented in recent model year HD diesel vehicles (EMA, 2014).

In this task, Ramboll Environ will conduct a detailed review of the basis of Model Year (MY) 2007+ HD diesel vehicle emission rates, speed correction factors and TM&M rates included in EMFAC2014. We will compare EMFAC2014 assumptions for each of these parameters with EPA MOVES model assumptions for MY 2007+ HD diesel vehicles. We will also conduct a literature search to identify any new studies or data sets available and provide a general assessment on whether any new data could be used to estimate MY 2007+ HD diesel vehicle emission rates. The results of the above analysis would be documented in a technical memorandum which would discuss uncertainty in EMFAC2014 MY 2007+ HD diesel vehicle emission rates along with alternative emission rates available in the MOVES model and list

other identified data sources. If data sets are found during the literature review that could improve EMFAC2014 estimates of HD diesel vehicle emission rates, Ramboll Environ could make detailed evaluations of these data under an additional task.

Task 4: Quantify uncertainties in model projections

The objective of this task is to help identify the factors contributing to the lower response of the model to emission changes over the years than observed at many SoCAB monitoring locations. Errors in modeled future year projections can be attributed to uncertainties in a number of factors including emissions, meteorological inputs, boundary conditions, and uncertainties in model formulation, including chemistry mechanisms. In this task, RE will investigate the role of three of these uncertainties in the CMAQ simulations: meteorology, emissions and boundary conditions.

For understanding the extent to which year-to-year meteorological differences influence modeled future year design values, RE will conduct CMAQ sensitivity studies for the 2012 base year and 2023 future year using 2008 meteorology. This approach leverages the model-ready meteorological files for 2008 that are already available from the 2012 AQMP and that were used in the preliminary CMAQ modeling for EMA. The future year design values calculated using 2008 meteorology will be compared with those using 2012 meteorology.

For quantifying the emissions uncertainty, RE will conduct CMAQ sensitivity studies for the summer seasons of the 2016 AQMP base year (2012) and a historical year, to be determined in consultation with EMA, by separately reducing VOC and NO_x emissions from on-road mobile sources by a factor of two. Since the modeling inputs do not include pre-merged emissions (i.e., separate emissions for each source category), the fraction of emissions from on-road mobile sources in the SoCAB will be used to determine the amount of reductions in the modeling inputs.

For quantifying the boundary conditions uncertainty, RE will reduce ozone boundary conditions by 10 ppb in CMAQ sensitivity studies for the summer seasons of 2012 and a historical year. These changes to the boundary conditions will enhance the responsiveness of the model to emission changes between the historical year and 2012 within the modeling domain and will likely bring the predicted ozone reductions in closer agreement with measured reductions.

The results of the sensitivity study design value projections for the historical year using the emissions and BC sensitivity tests will be compared with those using the base 2016 AQMP modeling database from Task 1 and with the observed ozone trends to see which changes results in a better match of modeled and actual observed ozone trends between 2008 and the selected historical year.

Task 5: Apply EPA methods to reduce ozone forecast errors

Scientists at EPA's National Exposure Research Laboratory (NERL) have investigated methods to correct biases and errors in ozone projections from photochemical grid models, such as CMAQ (Hogrefe et al., 2014; Porter et al., 2015). In this task, RE will use the methods described in Porter et al. (2015) to reduce the ozone forecast errors from the CMAQ modeling conducted for EMA. We will apply the methods ("Mean and Variance with Temporal Matching" and "Cumulative Distribution Function Matching") that were identified by Porter et al. (2015) as being the most promising of the various methods that were used in their analysis. The validity of these techniques will be tested by applying the techniques to the summer season of one historical year. We will then conduct a summer season simulation for 2023 using the 2016 AQMP database, and apply the technique to adjust 2023 projections.

Task 6: Conference presentation

In this task, RE will present the results of the study at the 15th Annual Community Modeling Analysis System (CMAS) conference in October 2016. CMAS was established under funding from the U.S. EPA to support community-based air quality modeling. The CMAS Center (located at the University of North Carolina, Chapel Hill) is responsible for releasing CMAQ and other models and providing training and support to model users. The CMAS conference is held annually in Chapel Hill, and is well-attended by the photochemical modeling community.

RE will prepare a draft abstract for review by EMA and submit the final abstract to CMAS by the due date (June 29, 2016). We will request an oral presentation for the "Regulatory Modeling and SIP Applications" session of the conference. Prior to the conference in October, RE will prepare a draft presentation and extended abstract for review by EMA and for discussion during a conference call between RE staff and EMA. RE will revise these documents based on the review and discussion and submit the materials to CMAS for the conference presentation and proceedings.

Task 7: Conduct literature review and prepare manuscript for peer-reviewed publication

In this task, RE will conduct a detailed literature review and analysis of previous dynamic evaluations conducted with CMAQ and other models to put the results of the EMA study in context with previous studies. RE will prepare a manuscript, suitable for publication in a peer-reviewed journal, which will summarize the salient features of the literature review and present the EMA study results.

Task 8: Project management, reporting and coordination with stakeholders

In this task, RE will coordinate project activities with project sponsors, agencies, and subcontractors (currently Sonoma Technology, Inc.). RE will attend meetings and interact and collaborate with scientists at SCAQMD, ARB, and EPA. RE staff will attend conference calls, prepare project reports and presentations for these activities. RE staff will assist EMA in the preparation of comments to the draft 2016 AQMP.



June 3, 2016

STI-916025

Prakash Karamchandani
Ramboll Environ
773 San Marin Drive, Suite 2115
Novato, CA 94998

Re: Statement of work and budget for South Coast emissions reconciliation analyses

Dear Prakash,

STI is pleased to submit the attached statement of work (SOW) and budget estimate for performing emissions reconciliation analyses for the South Coast Air Basin (SoCAB). Our SOW describes the following activities:

- Acquiring and processing available ambient monitoring data for 1991-2015 from Photochemical Assessment Monitoring Stations (PAMS) and other sites in the SoCAB
- Working with Ramboll Environ to acquire emissions inventory data used in retrospective and future year photochemical modeling simulations for the SoCAB and processing these data to support emissions reconciliation analyses
- Compare ambient- and emissions-derived trends in VOC and NO_x levels and VOC/NO_x ratios
- Use PAMS data to evaluate trends in MIR-weighted reactivity at various sites

We look forward to working with you on this project, and please contact me with questions at 707.665.9900 or sreid@sonomatech.com.

Sincerely,

Approved:

A handwritten signature in blue ink that reads "Stephen Reid".

A handwritten signature in blue ink that reads "Hilary Hafner".

Stephen Reid
Environmental Modeling Division Manager

Hilary Hafner
Senior Vice President

Attachments

Statement of Work

Emissions inventories are an important component of air quality planning and a key input to photochemical grid models that support air quality assessments. Several methods are available to evaluate and improve emissions estimates, including comparisons between emissions inventories and ambient monitoring data. These comparisons, which are often called "emissions reconciliation," are used to identify omissions or inaccuracies in an emissions inventory, leading to further investigation and inventory improvement. The basic approaches used to perform emissions reconciliation analyses include selective, quantitative comparisons of emissions inventory- and ambient-derived molar pollutant ratios (e.g., VOC/NO_x or CO/NO_x), as well as comparisons of emissions inventory- and ambient-derived hydrocarbon compositions. Typically, these comparisons are made for morning commute periods when emission rates are high and mixing depths are low, minimizing the impact of confounding factors such as transported and chemically changed pollutants (Chinkin et al., 2005).

In addition, the sensitivity of ozone formation to changes in VOC or NO_x concentrations has been linked to several indicator species, including total reactive nitrogen (NO_y) and formaldehyde (HCHO). For example, VOC-sensitive conditions may exist when afternoon NO_y concentrations exceed 20 parts per billion (ppb) and HCHO/NO_y ratios are less than 0.28 (Sillman, 1995).

To support assessments of trends in ozone and ozone precursor concentrations in the South Coast Air Basin (SoCAB), STI will evaluate trends in ambient VOC and NO_x concentrations and VOC/NO_x ratios for selected monitoring sites and perform reconciliation analyses with air quality model-ready emissions data. STI will also analyze trends in VOC reactivity by applying Maximum Incremental Reactivity (MIR) values to individual hydrocarbons species measured at SoCAB monitoring sites. In addition, STI will review available data for key indicator species.

Gridded, hourly emissions data will be acquired from Ramboll Environ for the years 2000, 2005, 2008, 2012, and a current year (2014 or 2015). We understand that the 2012 data will be obtained from the South Coast Air Quality Management District's (SCAQMD) CMAQ database developed for the 2016 Air Quality Management Plan (AQMP). Emissions data for 2000, 2005, 2008, and 2014/2015 will be generated by Ramboll Environ by applying scaling factors to the 2012 CMAQ-ready emissions data. These scaling factors will be developed from historical SoCAB emission summaries from the California Air Resources Board (ARB).

Task 1: Ambient Data Analyses

For the time period of interest (1991-2015), STI has reviewed available ambient monitoring data for the SoCAB from EPA's Air Quality System (AQS), including data from Photochemical Assessment Monitoring Stations (PAMS), State and Local Air Monitoring Stations (SLAMS), and other special purpose monitoring sites. A summary of available total nonmethane organic compounds (TNMOC), NO_x, and indicator species data is shown in Table 1.

This summary of available data indicates that the Asuza, Burbank, Pico Rivera, and Upland sites are likely to have sufficient data to support trend analyses for VOC, NO_x and VOC/NO_x ratios. Limited

analyses can also be performed at additional sites (e.g., VOC/NO_x ratios can be calculated for 2005 and 2008 at the LAX-Hastings site). The availability of indicator species data is extremely limited.

Table 1. Summary of data availability by monitoring site.

Site Name	Site Type	TNMOC Availability*	NO _x Availability	Indicator Species Availability
Azusa	PAMS	1995 - 2014 (missing data after 2011)	1991 - 2015	
Burbank	Other	1998 - 2012 (missing data in 1997 and 2012)	1991 - 2014	Formaldehyde (HCHO): 1997-2012
Los Angeles North	Unofficial PAMS	1995 - 2001 (only sample at 5 PST and 12 PST); 2009 - 2014	1991 - 2015	NO _y : 2011 - 2015 HCHO: 2009 - 2012
Pico Rivera	PAMS	1997 - 2004	1991 - 2005	HCHO: 1997-2001
Pico Rivera New	SLAMS	2006 - 2014	2006 - 2015 (missing data in 2006 and 2012)	HCHO: 2006-2012
Hawthorne	Other	1997 - 2003	1991 - 2004	
LAX - Hastings	SLAMS	2004 - 2013	2004 - 2015	
Newhall	Other	1999 & 2000	1994 - 1995; 1999 - 2001 (missing July in 1999)	HCHO: 1999-2000
Santa Clarita	Other	2001 - 2014 (missing July data in 2014)	2001 - 2015	HCHO: 2001-2012
Banning-South Hathaway	PAMS	1997 - 2008	1997 - 2015	HCHO: 1996-2008
Rubidoux	Unofficial PAMS	2009 - 2013	1994 - 2015	NO _y : 2011 - 2015
Upland	PAMS	1994 - 2008 (missing 1996)	1994 - 2015	

*Data monitored for summer only (typically beginning in June or July and continuing through September).

For the monitoring sites and time period (1991-2015) of interest, we will acquire available data from AQS for speciated hydrocarbons, total nonmethane organic compounds (TNMOC), NO_x, and indicator species, as well as wind speed and wind direction. To ensure quality data for analysis, Level 1 validation of the VOC data will be performed, as outlined in Brown and Hafner (2006). The goal of data validation is to identify a representative data set for each site. Therefore, outliers, unrealistically low concentration values, and shifts in species patterns will be flagged as suspect and may not be included in the analysis. In addition, for PAMS sites, the sum of PAMS target compounds

(PAMSHC) will be compared to corresponding TNMOC values, and TNMOC data will be excluded where PAMSHC is greater than TNMOC or less than 70% of TNMOC.

Our analyses will focus on ozone season data (May–October) collected during early morning hours (e.g., 0600–0900) to minimize the influence of transported pollutants and chemical reactions on ambient measurements. After the appropriate ambient data have been selected and prepared, trends in hourly TNMOC and NO_x concentrations at each site will be evaluated by calculating the mean ozone season value for each year. In addition, TNMOC/ NO_x ratios will be calculated based on molar ratios with TNMOC in units of ppbC, and NO_x in units of ppb. TNMOC/ NO_x ratios will be calculated by day of week (weekdays vs. weekend days) and wind quadrant, as the sources impacting a given monitoring site vary by wind direction. In addition, we will evaluate trends in VOC reactivity by applying Maximum Incremental Reactivity (MIR) values to individual hydrocarbons species measured at PAMS sites.

Task 2: Emissions Inventory Analyses

For each monitoring site, STI will define grid analysis zones based on predominant wind speeds during early morning hours (e.g., 0600–0900), using average wind speeds to identify which grid cells to include in the ratio analyses based on approximate air parcel travel distance during the time period selected of interest. These grid analysis zones will then be used to identify grid cells in the CMAQ modeling domain for which emissions data will be analyzed.

STI will work with Ramboll Environ to acquire gridded, speciated, hourly emissions data for all grid cells of interest. These data will include all years for which CMAQ modeling was performed so that trends in total VOC and NO_x emissions and emissions-derived VOC/ NO_x ratios can be assessed. VOC emissions will be provided by the lumped and explicit chemical species associated with the SAPRC-07 chemical mechanism that was used for CMAQ simulations. For ratio calculations, VOC emissions data will be converted to moles carbon to facilitate comparisons with ambient data, which is reported in units of parts per billion carbon (ppbC).¹ In addition, VOC/ NO_x ratios will be calculated by wind quadrant and day of week to support comparisons with ambient-derived ratios.

As described above, emissions inventory work will focus on the 2000, 2005, 2008, 2012 and 2014/2015 emissions data derived from the 2016 AQMP modeling.

Synthesis of Findings

STI will prepare tabular and graphical summaries of our comparisons of trends in ambient- and emissions-derived VOC and NO_x concentrations and VOC/ NO_x ratios. These data will be discussed in a brief technical memorandum and summarized in PowerPoint slides. STI will also assist in presenting results to SCAQMD and ARB, as needed.

¹ Note that we will be unable to match individual hydrocarbon species in the emissions inventory with individual PAM species, which limits the comparability of these data sets (e.g., we cannot compare the MIR-weighted reactivity of the ambient data and the emissions data).

Responses to Comment Letter from Truck and Engine Manufacturers Association (EMA)
(Comment Letter 58)

Response to Comment 58-1:

Staff appreciates the participation in the AQMP public process and your comments. The 2016 AQMP employed a state-of-the-science numerical modeling system, WRF-CMAQ, and followed U.S. EPA guidance to demonstrate attainment and estimate emission reductions needed to meet the standards. The comment letter states that AQMP's over-predicts ozone and over-estimates the NOx emission reductions required to meet the standard. However, that statement is based on non-standard methodologies, such as a simplified extrapolation, which have not been approved by U.S. EPA or used by the scientific community for predicting air quality. SCAQMD hosted a Science Technology Modeling Peer Review committee (STMPR) meeting on October 26, 2016 to discuss the revised attainment scenarios and the approaches that Ramboll-Environ/EMA suggest. The presentations and minutes describing the discussions among the committee members and public are available at [http://www.aqmd.gov/home/library/meeting-agendas-minutes/agenda?title=STMPR\(Mod\)_102616](http://www.aqmd.gov/home/library/meeting-agendas-minutes/agenda?title=STMPR(Mod)_102616).

Appendix V was released in September 2016 and available for public review for more than 45 days.

Comments on CARB's SIP strategy and EMFAC were forwarded CARB who will be holding its public hearing on the SIP strategy and/or EMFAC.

Response to Comment 58-2:

U.S. EPA lists different types of model performance evaluations to ensure the accuracy of model prediction. The AQMP attainment demonstration includes various types of evaluations including operational evaluation, diagnostic and a form of dynamic evaluation using sensitivity tests. Another dynamic evaluation approach, also recognized by U.S. EPA, is using various conditions, e.g., by day of the week, by season, and regionally. The AQMP modeling includes a five-month period starting from May to September, which includes various meteorological conditions, emission variability, and seasonal changes. The modeling results exhibit a robust model performance across these different chemical environments, thus supporting the assertion that the modeling results respond appropriately to changes in emissions. Therefore the AQMP approach satisfies an alternative form of dynamic evaluation that U.S. EPA recommends.

The comments on the under-estimation of future design values are not valid since the linear interpolation method referred in the commenter's analysis is overly simplified approach that overlooks the complexity of ozone chemistry, therefore is not supported by U.S. EPA nor scientific community. One should use great caution in drawing a straight line to project ozone trends, since the ozone progress slope will vary depending on the length and the timing of the period that the trend is retrieved from. For example, if ozone ambient data measured in 2016 is included in the trend analysis, the 2012 AQMP projected ozone progress agrees well with the measured progress. In addition, staff were unable to reproduce the numbers provided in the comment letter. U.S. EPA recommends to use 5-year weighted average design values, but the ozone concentrations in the table do not agree with U.S. EPA recommended 5-year design value.

Response to Comment 58-3:

The attainment demonstrations in the 2016 AQMP as well as in the 2012 AQMP were conducted using the most recent U.S. EPA guidance released at the time. The attainment demonstration in the 2016 AQMP was based on the U.S. EPA guidance released in 2014, whereas the demonstration in the 2012 AQMP was based the guidance released in 2007. The new RRF methodology delineated in the 2014 guidance leads to future design values that are more responsive to emission reductions, compared to the previous RRF approach from the 2007 guidance. This is why the ozone carrying capacity estimated in the 2016 AQMP is higher than the one estimated in the 2012 AQMP.

As responded above, ozone trend cannot be interpolated linearly and model performance cannot be evaluated based on such linear interpolated value. One should use great caution in drawing a straight line to project ozone trends, since the ozone progress slope will vary depending on the length and the timing of the period that the trend is retrieved from. For example, if ozone ambient data measured in 2016 is included in the trend analysis, the AQMP projected ozone progress agrees well with the measured progress.

The measurements data used in the bar graphs on p.5 need validation. The U.S. EPA guidance recommends using a 5-year weighted design value to demonstrate attainment. The measured data given in the bar graphs do not match with the 4th highest of a given year, 3-year design value nor 5-year weighted design value.

Response to Comment 58-4:

Ozone chemistry is complex and the response of ozone to changes in precursor emissions is not linear. This is particularly evident in the case of the NO_x reduction disbenefit, which is the increase in ozone concentration despite the reduction in NO_x emissions. High levels of NO_x in metropolitan urban areas, such as Los Angeles, provide atmospheric conditions under which an initial reduction in NO_x emissions increases ozone concentrations. Under these conditions, NO_x emissions need to reach a substantially lower level to result in a net ozone reduction, and hence, overcome the NO_x disbenefit. Therefore, a simple extrapolation using a straight line would not provide an accurate estimation of future ozone concentration. This type of simple linear extrapolation has not been approved by U.S. EPA or used by the research community.

The 2012 AQMP relied on the 2012 Regional Transportation Plan (RTP) to forecast future growth. The 2012 RTP incorporated the impact of the economic recession that occurred during the 2008-2010 period to a certain degree. It is not expected that the growth forecast reflected the full intensity of the recession. For example, the consumption of taxable gasoline consumption reached its minimum level in 2012, which is after the RTP was finalized in April 2012. Therefore, some discrepancy is expected in the projected emissions inventory and actual data.

Neither SCAQMD nor US EPA support the linear extrapolation of ozone to future years. The rates of ozone progress in the figure in page 8 are mere speculations with no supporting analysis.

Response to Comment 58-5:

The carrying capacity for 2023 to attain the 80 ppb ozone standard is approximately 150 tons per day (TPD) of NO_x. The attainment scenario that incorporates proposed control measures is revised. The total NO_x emissions remaining in the attainment scenario is 141 TPD. This yields the Basin maximum concentration to 84.5 ppb, which due to U.S. EPA rounding conventions is in attainment of the standard.

170 TPD of NO_x will lead to approximately 87 ppb, which is above the standard.

Response to Comment 58-6:

There are uncertainties in both baseline and future-year emission inventories. The attainment demonstration using RRF and periodic updates of AQMPs are explicit acknowledgement of that fact. However, qualification of the uncertainties is difficult, if not impossible, simply because the amount of information that goes into preparation of an emissions inventory. As described in Chapter 3 and Appendix V, we strive to use the most up to date information in our emission inventories.

As shown in Appendix V, the modeling performance in characterizing primary and secondary pollutant concentrations in the basin is satisfactory. In our past work, such as MATES studies, emissions trend and concentration modeling are consistent with ambient concentrations. Therefore, we have reasonable confidence in our baseline inventories in representing basic air pollution characteristics in the area.

It's true that there are additional uncertainties in projecting future-year emissions, primarily from difficulties in forecasting future economic conditions and the pace of technology development. The future-year growth forecast is from SCAG. SCAG provided a retrospective analysis of its performance in socioeconomic forecast over the past 30 years at the May STMPR meeting. While there are uncertainties, the long-term trend of SCAG's forecast is deemed to be robust.

When comparing the projected 2023 baseline NO_x emissions from 2007, 2012 and 2016 AQMPs, it's true they changed significantly and they became progressively smaller. These changes are not a reflection in uncertainties in the emissions inventories, as implied by the commenter. The smaller 2023 baseline emissions is primarily due to the adoption of proposed measures including CAA 182(e)(5) measures in the past AQMPs.

Spatial and temporal distributions and speciation of emissions are important parts of modeling emission inventories. The District corroborated extensively with CARB on the distributions of emissions. Distribution profiles and gridding surrogates are updated periodically. There are some discussions of the distributions of emissions in Appendix V. If the commenter is interested in more detail or how a specific emission source is distributed, the staff will make the specific information available.

CARB has a continuous program in maintaining and updating emission speciation profiles. Detailed information can be found in <https://www.arb.ca.gov/ei/speciate/speciate.htm>. This comments were forwarded to CARB who will be holding its public hearing on EMFAC and state SIP strategy.

Response to Comment 58-7:

The 2012 RTP finalized in April 2012 did not capture the full impact of the recent economic recession, as evident from the data showing that the consumption of taxable gasoline reached its minimum level in 2012. Taxable diesel consumption shows a similar trend as well. Such discrepancies in the emissions inventory contributed to the uncertainties in the 2012 AQMP prediction.

Response to Comment 58-8:

The graph was revised accordingly.

The 2016 AQMP modeling approach satisfies the requirements and recommendations given in the 2014 U.S. EPA guidance, including an alternative form of dynamic evaluation.

Comment Letter from the Valley Industry and Commerce Association (Comment Letter 59)



August 19, 2016

Michael Krause, Planning & Rules Manager, AQMP
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Subject: 2016 Draft Air Quality Management Plan – Comments

Dear Mr. Krause,

The Valley Industry and Commerce Association (VICA) represents over 400 businesses and non-profits across California. We welcome the opportunity to comment on the draft 2016 Air Quality Management Plan (AQMP). VICA supports the AQMP's focus on incentive-based models and the emphasis on working with business and affected industries.

Overly prescriptive regulatory mandates have a negative effect on our local region, by undermining the economy. We have made great progress reducing emissions from stationary sources in the South Coast Basin over the last few years. However, there have been high costs to manufacturers and other industrial businesses. These costs have contributed to some businesses leaving the area or reducing operations. This means fewer jobs, slower economic growth and the loss of real opportunities for Los Angeles residents.

59-1

We support continuing the emissions reductions progress through incentive-based frameworks, cost effectiveness and options for businesses. Some of the new emission control technologies are not currently cost-effective, but may be necessary to achieve standards by 2023. We support appropriate incentives to offset the capital and operational costs of implementing these technologies. The mobile source plan should be fuel-neutral and allow consumer choice.

59-2

59-3

VICA urges further detail on the funding of the \$2 billion incentives outlined in the AQMP. This funding is critical to the AQMP achieving its targets and we urge the South Coast Air Quality Management District to partner with stakeholders to finance this incentive program.

59-4

VICA looks forward to continuing its work with the AQMP Advisory Group, and appreciates the thoughtful effort put into developing this plan.

Sincerely,

Kevin Tamaki
Chair

Stuart Waldman
President

Responses to Comment Letter from Valley Industry and Commerce Association (VICA)
(Comment Letter 59)

Response to Comment 59-1:

Staff appreciates the support for incentives and acknowledges the concerns with regulations that burden businesses impacting jobs and economic growth.

Response to Comment 59-2:

Staff recognizes that some new emission control technologies are not currently cost effective so incentives can assist in advancing deployment of the cleaner technologies needed to meet the fast approaching deadline of 2023 for the 1997 ozone standard. The Plan has been updated to prioritize maximizing emission reductions utilizing zero-emission technologies, when cost-effective and feasible, and near-zero emission technologies in all other applications.

Response to Comment 59-3:

Staff appreciates the comment regarding the long-standing policy of fuel neutrality and supports such a balance where possible. However, staff believes that appropriate funding should be commensurate with the levels of emission reductions needed. As such, the SCAQMD has petitioned U.S. EPA to adopt ultra-low NOx engine emissions standards so that all fuel types have the opportunity to meet one performance standard.

Response to Comment 59-4:

Please see Response to Comment 26-3 regarding the Financial Incentive Funding Action Plan.

Comment Letter from PTS Staffing (Comment Letter 60)

From: Ronald Stein [mailto:rstein@PTSstaffing.com]
Sent: Sunday, August 21, 2016 6:41 AM
To: Angela Kim <akim@aqmd.gov>
Subject: 2016 AQMP Comment Form

Angela Kim, not sure if my comments were submitted via the online form **2016 AQMP Comment Form** <https://onbase-pub.aqmd.gov/sAppNet/UnityForm.aspx?key=UFSessionIDKey>

If my comments did not come through, here are my comments to the AQMD:

California is in a precarious position. While the East coast experiences abnormally wet conditions, the stagnant weather conditions in California are causing more smog days. The emissions crusade that began in 2006 has failed to reduce California's 1 per cent contribution to the world's greenhouse gases, all while cap-and-trade has raised \$7 billion in fees for the government's pet projects.

AB32 was signed into law in 2006 at a time when CA was contributing 1% to the world's greenhouse gases, now, a decade later, according to the California Energy Commission California still contributes a miniscule 1 per cent. The cap & trade program that has hit the citizens' pocketbooks for more than \$7 Billion dollars to fund a multitude of governmental pet projects, has had little to no impact on the reduction of California's contributions to global greenhouse gas emissions.

The environmental crusaders are also unaware that wind and solar are only able to provide intermittent electricity to the grid, but cannot accomplish the work now performed by oil, natural gas, and coal that are the basis of every component of modern civilizations' industries and infrastructures.

Maybe it's karma that the cash cow of the cap & trade "fees" may be dying, as CARB avoids the transparency that the program has done little in 10 years to reduce California's 1% contribution to the World's Green House gases.

Yet, the state, by avoiding transparency of the results of the California emissions crusade remains on ago-it-alone crusade to micro manage the California emissions that generates billions of dollars for the government at the expense of businesses and the financially challenged. With numerous state government agencies there is a feeding frenzy on getting a piece of the lucrative cap and trade "fee" revenue.

In 2015, Britain's energy and climate change secretary Amber Rudd set priority to ensure energy bills for hard working families and businesses to be kept as low as possible, announced sweeping CUTS to renewable energy subsidies.

In Australia, after almost a decade of heated political debate, became the world's first developed nation to repeal carbon laws that put a price on greenhouse-gas emissions. In 2015, Australian voters turned against

60-1

climate laws, blaming them for lost jobs, rising energy bills, higher production costs, and living costs. J.P. Morgan, estimated the removal of the carbon tax would boost its valuation on several companies as much as 6%.

The public, especially the homeless and poor that are disproportionally bearing the cost burden for the emissions crusade efforts of the AQMD deserves to know if there is any progress over the last decade in reducing California's 1% contribution to the world's greenhouse gases.

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Ronald Stein, P.E.
rstein@PTSstaffing.com

949-268-4023
Irvine, CA

Responses to Comment Letter from PTS Staffing (Ronald Stein)
(Comment Letter 60)

Response to Comment 60-1:

In 2013, the California cap was set to reduce emission levels by 2 percent below 2012, then decline 2 percent in 2014 and 3 percent annually from 2015 to 2020 (<https://www.arb.ca.gov/cc/capandtrade/capandtrade.htm>).

The AB 32 goal to reduce greenhouse gas emission to 1990 levels by 2020 requires a portfolio of activities such as the current cap and trade program and the mandatory reporting regulation, to name a few. Progress has been demonstrated in both of these programs. Since the implementation of the Mandatory Reporting Regulation beginning in 2009 and the Cap-and-Trade program in 2012, emissions have dropped from 481.4 million metric tons of carbon dioxide equivalent (MMT CO₂e) in 2008 to 441.5 MMT CO₂e in 2014.

As stated in Chapter 10, the renewable generation technologies currently must still be supplemented by fossil fuel generation due to intermittency and periods of over-generation, along with lack of manageable loads and energy storage (MacDonald, 2016) (Trancik, 2015). The reliance on fossil generation to support renewables is expected to decline as more grid resources such as storage and demand response are more fully integrated onto the grid.

Comment Letter from National Fuel Cell Research Center (Comment Letter 61)

**2016 Air Quality Management Plan
Comments of the National Fuel Cell Research Center
August 19, 2016**

Submitted by:
Dr. Scott Samuelson
Director, National Fuel Cell Research Center
Co-Chair, California Stationary Fuel Cell Collaborative
Professor of Mechanical, Aerospace, and Environmental Engineering
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I. Introduction

The National Fuel Cell Research Center (NFCRC) at the University of California, Irvine (UCI) facilitates and accelerates the development and deployment of fuel cell systems, promotes strategic alliances to address the market challenges associated with the installation and integration of fuel cell systems and renewable energy systems, and educates and develops resources for fuel cell and self-generation stakeholders around the world. The NFCRC is working with GE-Fuel Cells, LLC; LG Fuel Cell Systems Inc.; Bloom Energy; Doosan Fuel Cell America; and FuelCell Energy. All commend the excellent Air Quality Management Plan (AQMP) that the South Coast Air Quality Management District (SCAQMD) has drafted.

II. Comments on Draft AQMP

A. Fuel Cell as a Replacement for Stationary Combustion Sources

The NFCRC strongly supports the inclusion of fuel cells as Stationary Source Control Measures (CM) CMB-01, CMB-02 and CMB-03 for NOx emission reduction from traditional stationary combustion sources, from commercial and residential space and water heating, and from non-refinery flares, respectively.

In Appendix IV-A, SCAQMD's Stationary and Transportation Source Control Measures, the Background on Zero and Near-Zero Emission Technologies includes information on the success to date of fuel cells in California as a fuel flexible (biogas, hydrogen, natural gas) replacement for combustion technology, as well as providing backup power and hydrogen generation. Stationary fuel cells are installed as primary power generation in California at hospitals, critical telecommunication hubs, grocery stores, hotels, prisons, water resource

61-1

recovery facilities, food processing plants, universities, office buildings, and server farms. Some applications are all-electric, whereas other applications recover the heat for space heating, cooling, or steam. The use of heat for the production of chilled water is increasing in popularity as an alternative to electric driven vapor compression refrigeration. An example is the generation of 200 tons of chilling at the UCI Medical Center from a 1.4 MW stationary fuel cell that is mentioned in the draft AQMP. In addition to virtually zero emission of criteria pollutants, fuel cell systems consume net-zero water in the production of energy.

Grid simulations, conducted by the UCI Advanced Power and Energy Program (APEP), demonstrate the significant reduction in NO_x that both biogas and natural gas fuel cells would achieve in a low carbon grid with the co-benefit of reducing greenhouse gases (GHG) and other criteria air pollutants.¹ In Figure 1, for example, the substantial emissions reductions for both NO_x and CO₂ are demonstrated when load management from natural gas combined cycle plants is replaced with fuel cells.

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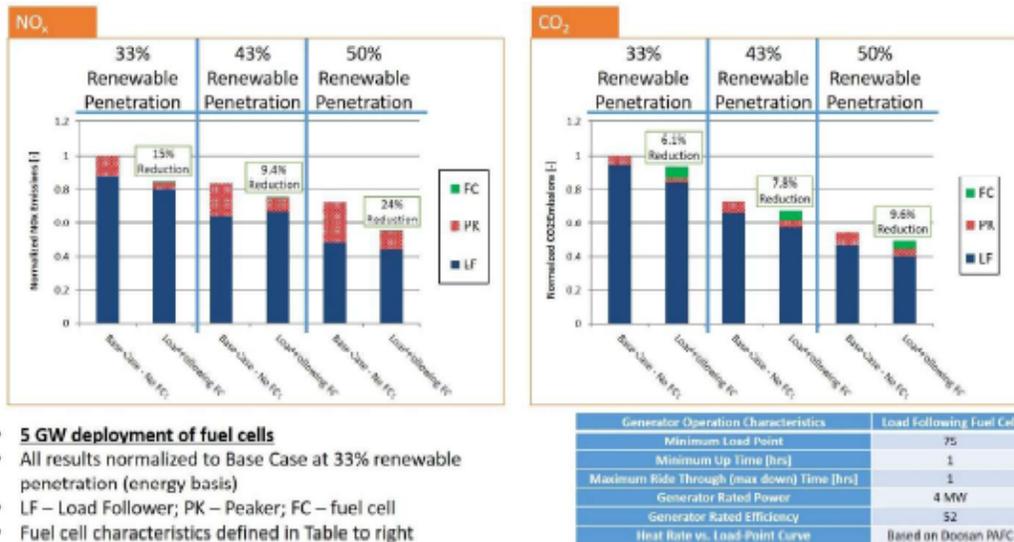
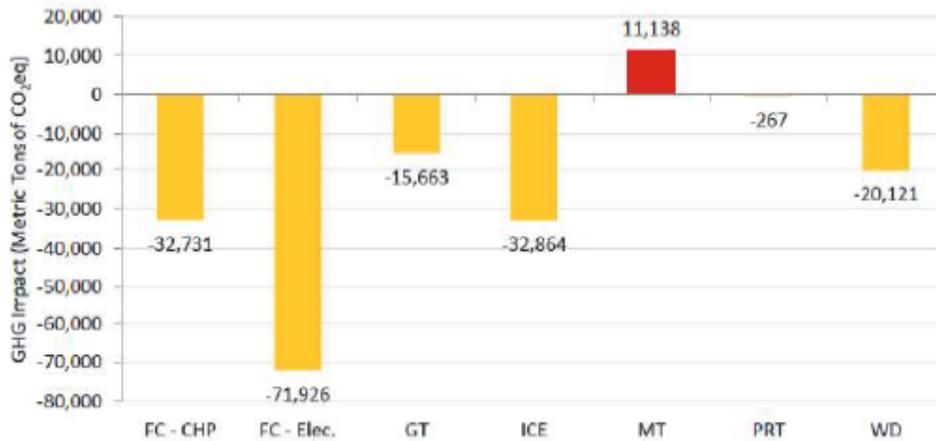


Figure 1: Grid Simulation Modeling of 5 GW Fuel Cell Deployment in California with Different Renewable Penetrations²

¹ "Stationary Fuel Cell Benefits in a Low-Carbon California Grid," Advanced Power and Energy Program, University of California, Irvine. April 30, 2013.

² Shaffer, B., Tarroja, B., & Samuelsen, S. (2015). Dispatch of fuel cells as Transmission Integrated Grid Energy Resources to support renewables and reduce emissions. *Applied Energy*, 148, 178–186.

As acknowledged in the AQMP, experiential data support these projections, namely that stationary fuel cells reduce GHG emissions in addition to NO_x emissions. As an example, a 2013 California Public Utilities Commission (CPUC) report delineates this attribute (Figure 2) based on data from fuel cell and other systems installed through the Self Generation Incentive Program (SGIP).



* FC - CHP = CHP Fuel Cell, FC - Elec = Electric-Only Fuel Cell, GT = Gas Turbine, ICE = Internal Combustion Engine, MT = Microturbine, PRT = Pressure Reduction Turbine, WD = Wind Turbine

Figure 2. GHG Reductions of Fuel Cell Systems by Technology Type⁵

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B. Fuel Cells and Energy Storage are Complementary Technologies in a Future Grid

Chapter 10 of the AQMP, “Climate and Energy,” details how California is establishing a renewable grid, while relying heavily on firm clean power generation to meet GHG and criteria air pollutant emissions targets. Energy storage is also recognized in CM #CMB-01 as a provider of grid ancillary services. Although intermittent wind and solar renewables and energy storage provide many benefits, because they are not firm capacity, they are not a firm clean power generation solution to replace central station power plants. Therefore, supporting high efficiency, low GHG, and virtually zero criteria pollutant emission options such as fuel cells remains critical. In addition to the multiple applications of fuel cells listed as onsite generation for industrial, commercial and residential buildings in the AQMP, fuel cells also function as utility scale generation. On the utility side of the meter, large-scale fuel cell systems (“TIGER

61-2

³ 2013 SGIP Impact Evaluation, prepared by Itron. April 2015, page 7-2.

Stations”⁴ are being deployed to create grid support solutions where transmission is constrained or increased reliability is sought. Examples range from a 15MW system in Connecticut, to a 30MW system in Delaware, to a 59MW system in Seoul, Korea. These resources are providing firm, clean load-following power generation to complement the increasing deployment of intermittent solar and wind renewable resources and support grid reliability in locations where it is most needed.

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In research on smart grids, microgrids, and advanced energy communities, APEP analyses have consistently shown the significant requirement of both battery electric storage (BES) and dispatchable firm clean power generation, such as fuel cell systems, to support and enable increased solar and wind generation.

B.1. Utility Grid Network Modeling

A detailed consideration of utility grid network dynamics, and their evolution over time, is required to understand the power generation and energy storage needs of a grid as it evolves toward 100% renewable operation. The California electricity system dispatch tool (HiGRID)⁵ was utilized over a portfolio of scenarios to evaluate various forms of storage (e.g., batteries, pumped hydro, compressed air, and flow batteries) and power generation (e.g., gas turbines, fuel cells) to manage a high-penetration of renewable solar and wind resources and achieve, overall, a stable and resilient 100% renewable grid. Results include the following:

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- The fundamental characteristics of hydrogen energy storage and fuel cells, which allow independent sizing of power (MW) and energy (MWh) capacities, make both essential grid support technologies for a 100% renewable grid,
- The use of natural gas fuel cells (with current performance) can today reduce greenhouse gas emissions more than energy storage for cases of 33% and 50% renewable energy (see Figure 3),
- The ratepayer costs for use of natural gas fuel cells to achieve these higher GHG reductions are lower than the costs of corresponding energy storage technologies to achieve lesser GHG reductions (see Figure 4),

⁴ TIGER: Transmission Integrated Grid Energy Resource.

⁵ J. D. Eichman, F. Mueller, B. Tarroja, L. S. Schell, and S. Samuelsen, “Exploration of the integration of renewable resources into California’s electric system using the Holistic Grid Resource Integration and Deployment (HiGRID) tool,” *Energy*, vol. 50, pp. 353–363, 2013.

- If biogas resources can be sufficiently increased, they can best be used in fuel cells to produce additional GHG reductions with ultra-low criteria pollutant emissions,
- Fuel cells today can operate with dynamic load-following characteristics and are evolving to have very significant ramping capabilities which will enable even higher renewable solar and wind deployment,
- The natural gas system can evolve to store massive amounts of renewable fuel, preferably hydrogen made from otherwise curtailed renewable power, which future fuel cell systems can use to produce zero GHG and zero criteria pollutant emission power,
- In addition to fuel cells, battery technologies are also essential to grid support in the 100% renewable case with their characteristics of relatively fixed power and energy capacities (for shorter term and smaller sized energy storage), and
- Inverters used by both battery and fuel cell systems can be used to enhance grid reliability and other attributes by providing ancillary services in the future.

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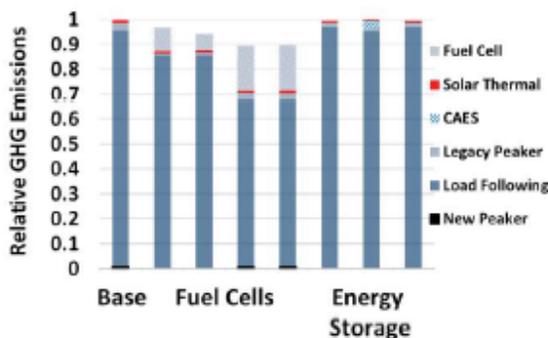


Figure 3. 33% Renewables: CO₂eq Emissions⁶

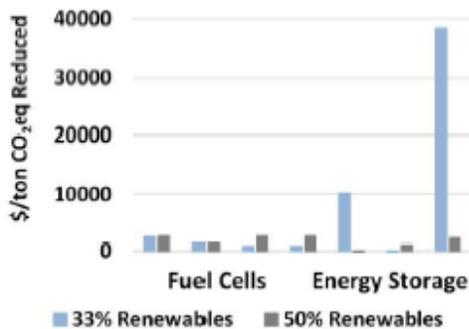


Figure 4. CO₂ Reduction Cost per Ton Reduced⁶

B.2. Distinguishing Characteristics

There is an important need to distinguish the technical capabilities and features that are offered by BES from those that are offered by firm (e.g., 24/7) clean power generation. A brief summary of these grid support characteristics is provided in Table 1. Note that firm clean power generation produced by fuel cell systems has the advantages of providing firm capacity additions

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⁶ Forrest, K., Shaffer, B., Tarroja, B., Samuelsen, S., "A Comparison of Fuel Cell and Energy Storage Technologies' Potential to Reduce CO₂ Emissions and Meet Renewable Generation Goals", *ECS Transactions*, 2016. 71(1), 193-203

to the grid, generating power at efficiencies between 43% - 65%, providing spatially separate charging and discharging, and separate power and energy capacity sizing. BES systems have the advantages of faster dynamic ramp rate, 100% of capacity dynamic ramping range, and higher round-trip efficiency. These distinguishing characteristics make BES preferred in some grid support applications and firm clean power generators preferred in others. For example, both BES and clean power generators can operate dynamically. Applications that require very fast ramp rates (e.g., frequency control) will prefer BES, whereas grid locations that need capacity additions will prefer firm, clean power generators. BES systems are not generators, so they must be installed in tandem with power generators and understood to consume some of the power generated whenever they are used. If round-trip efficiency is the most important characteristic desired in a grid support application, then BES systems are preferred. However, if it is desired to store a massive amount of energy, then the separate power and energy sizing characteristic of firm, clean power generators - coupled with electrolyzers and hydrogen storage - are preferred and are more cost effective. Finally, by using the existing natural gas pipeline infrastructure, which has no requirement for infrastructure investment (e.g., new transmission wires) to move the energy throughout the region, firm clean power generators are preferred, especially if the location of charging (e.g., desert solar farm) is separated from the desired location of discharging (e.g., major coastal city).

Because of these distinguishing characteristics and the preferred applications that result, it is critical to realize that both BES and firm clean power generators are important technologies for a sustainable and reliable utility grid network. Both of these emerging technologies require and deserve policy support for meeting California climate and air quality goals.

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Table 1. Some Distinguishing Technical Characteristics of BES and Clean Power Generation for Grid support

<i>Characteristic</i>	<i>Clean Power Generation</i>	<i>Battery Energy Storage*</i>
Firm Capacity	Yes	No (SOC [†] dependent)
Dynamic Ramp Rate	Fast (type dependent)	Faster
Range of Dynamic Operation	20% - 100% of capacity (type dependent)	100% of capacity
Power Generation Efficiency	43% - 65%	NA
Round-trip Storage Efficiency	40% - 60%	70% - 85%
Spatially Separate Charging/Dis-charging	Yes	No
Separate Power & Energy Capacity Sizing	Yes	No

* BES here refers to the most common type of rechargeable battery systems deployed in the SGIP program (i.e., lithium ion) and does not include flow batteries

† SOC: State of Charge

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B.3. Importance of Rate Structures

There is also an important need to identify the manner in which firm clean power generation and BES are being dispatched on the utility grid network. For the most part, firm, clean power generation is today dispatched as a base-load resource due to the financial incentives that promote the 24 hours a day, 7 days a week (24/7) continuous operation of the equipment to garner the best rate of return on investment. However, if rate structures were developed to provide a financial incentive for firm, clean power generators to operate dynamically, producing more power during some times of the day and less during others, then the inherent capabilities of firm clean power generators to operate dynamically would be exercised by those participating in the SGIP program.

Similarly, BES systems are currently dispatched by participants in the SGIP program in a manner to garner the best rate of return on investment. In the case of BES, since these systems store energy rather than produce power, there are certain times of the day in which they consume

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electric power and other times of the day in which they discharge electric power. Currently, this means that BES systems are typically charged at night when time-of-use (TOU) electric rates are low and discharged during the day when TOU rates are high.

Figure 5 presents a typical TOU daily rate structure for both the summer period (typically the months of June, July, August, and September) and winter period (typically October – May). Note that typically the differences between on-peak and off-peak prices in the winter are less than those in the summer, which may lead to circumstances under which energy arbitrage (i.e., charging BES systems when prices are low and discharging them when prices are high) may not be financially viable at all. That is, operations, maintenance, and degradation may cost more than the value of the energy price difference times the round-trip energy efficiency. Typically summer TOU prices have 3 levels: off-peak, mid-peak, and on-peak as shown in Figure 5. Also typical is the larger difference in price between off-peak and mid-peak and on-peak prices that make BES use for energy arbitrage more financially attractive. Note, that in all cases whenever a BES system is dispatched, it would be charging between the hours of 11:00pm and 8:00am and discharging between 8:00am and 11:00pm.

Figure 6 presents the hourly average breakdown of renewable power generation for a winter day (December 1, 2015) in California. Note that renewable power generation ranges from 1,600 MW to about 2,500 MW (averaging about 1,700 MW) between the hours of 11:00 pm and 8:00 am when BES systems are most likely to charge. Conversely, between the hours of 8:00 am and 5:00 pm the renewable power ranges from 2,500 MW to a peak of 7,100 MW with an average of approximately 6,100 MW. This is a period in which BES systems are likely to discharge and as a result tend to shift less renewable power from night to day and also exacerbate the potential for renewable power over-generation and curtailment.

Figure 7 presents the hourly average breakdown of renewable power generation for a summer day (June 3, 2016) in California. Note that renewable power generation ranges from 3,000 MW to about 4,100 MW (averaging about 3,600 MW) between the hours of 11:00 pm and 8:00 am when BES systems are most likely to charge. On the other hand, between the hours of 8:00 am and 7:00 pm the renewable power ranges from 4,000 MW to a peak of 9,200 MW with an average of approximately 8,300 MW. This period of high renewable power generation is the same period in which BES systems are likely to discharge. As a result, the typical dispatch of

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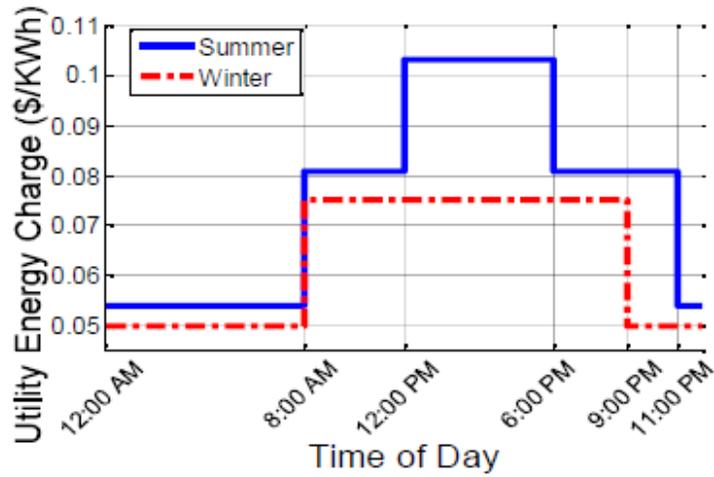


Figure 5. Typical time-of-use (TOU) rate structures for California IOU service territory.

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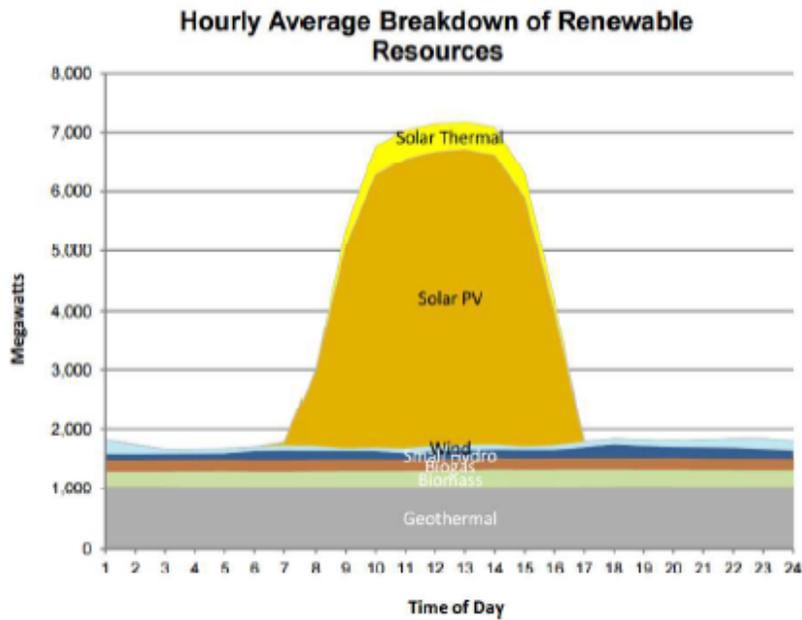


Figure 6. Average renewable power production in California on December 1, 2015.⁷

⁷ CAISO, available on-line at: http://content.caiso.com/green/renewrpt/20151201_DailyRenewablesWatch.pdf

BES systems under current rate structures tends to shift less renewable power from the night to compete with more renewable power during the day and also tends to exacerbate the potential for renewable power over-generation and curtailment.

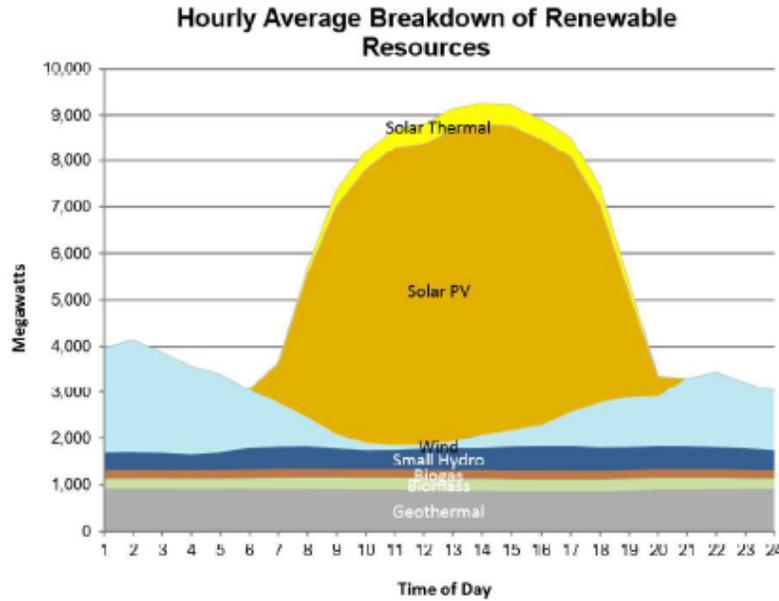


Figure 7. Average renewable power production in California on June 3, 2016.⁸

This unfortunate set of current conditions has led to the situation that BES systems are today performing a negative function on the grid, leading to increased grid dynamics and actually increasing the GHG emissions of the grid. The fact that BES systems produced a net increase of GHG emissions is confirmed by the latest information available from analysis of BES performance in the SGIP program.⁹ Even though a very limited number of BES systems were evaluated in this study, TOU rate structures have not changed and, as a result, one should expect that BES systems in the SGIP program will continue to be dispatched in ways that are economically attractive while increasing GHG emissions.

Finally, an important need for work on rate structures is in order to (1) enable economic

⁸ CAISO, available on-line at: http://content.caiso.com/green/renewrpt/20160603_DailyRenewablesWatch.pdf

⁹ Itron, 2013 SGIP Impact Evaluation, April, 2015.

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operation of both BES and firm clean power generators in a manner that best supports the introduction of more intermittent renewables, and (2) support grid reliability and sustainability. BES rate structures are required to incentivize charging during periods of high (excess) renewable power generation and discharging during periods of low renewable power generation and high demand (e.g., winter evening peak demand period). Firm, clean power generation rate structures are required to incentivize turn-down of power generation when renewable power generation is high (excess) and ramp-up of power generation when renewable power is low and demand is high. In addition, for both BES and firm, clean power generation, rate structures must be developed and implemented that value the ramping capabilities of both technologies and provide utilities with the tools to pay SGIP technologies for providing valuable ancillary services (e.g., Volt-VAR support, frequency regulation).

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III. Conclusion

The AQMP appropriately proposes the inclusion of fuel cell systems that are available today to replace combustion generation. The ability of fuel cell systems to produce electricity, heating, cooling and generate hydrogen is unique. In addition to the direct replacement of traditional combustion sources in CM CMB-01 and CMB-02, CMB-03, fuel cell systems are also well-suited as a part of a renewable grid that can exclusively manage the dynamics of an intermittent renewable grid through attributes such as load-following and ramping ability (from 0-100%) in combination with firm, local capacity.

Responses to Comment Letter from National Fuel Cell Research Center (NFCRC)
(Comment Letter 61)

Response to Comment 61-1:

Staff appreciates the support and notes the information provided.

Chapter 10 in the Revised Draft Plan has been updated to expand the discussion on fuel cells and power-to-gas activity.

Response to Comment 61-2:

Staff notes the information provided. Chapter 10 in the Revised Draft Plan has been updated to expand the discussion on fuel cells and power-to-gas activity.

Response to Comment 61-3:

Staff notes the information provided. Chapter 10 in the Revised Draft Plan has been updated to expand the discussion on fuel cells and power-to-gas activity.

Response to Comment 61-4:

Staff notes the information provided. Please see Response to Comment 61-3 regarding fuel cells and power-to-gas activity.

Response to Comment 61-5:

Staff notes the information provided. Please see Response to Comment 61-3 regarding fuel cells and power-to-gas activity.

Comment Letter from the REALTORS Committee on Air Quality (Comment Letter 62)

REALTORS[®] Committee on Air Quality

Carol Banner, Chairman

*106 South Grand Avenue
Pasadena, CA 91105
323/342-9373*

August 19, 2016

Dr. Philip Fine
Deputy Executive Officer
South Coast Air Quality Management District
21865 East Copley Drive
Diamond Bar, CA

SUBJECT: Comments on the Draft 2016 Air Quality Management Plan

Dear Dr. Fine:

The REALTORS Committee on Air Quality (RCAQ) is a voluntary coalition of 35 Associations of REALTORS that serve the South Coast Air Basin. We strongly support clean air in concert with housing affordability and availability, a competitive economy, and overall quality of life.

The Draft 2016 AQMP is a bold move beyond previous AQMPs that relied on undefined “black box” measures to meet federal standards. The following comments identify our support for realistic and effective features of the Draft AQMP, along with several caveats about the Plan’s impact on housing:

- **Take Full Advantage of Co-Benefits.** The AQMP should take credit for existing and future energy efficiency and conservation programs, greenhouse gas reductions and other existing programs by state, regional and local agencies that provide emission reduction co-benefits, without duplicating efforts. This integrated approach will save money in the long-run.
- **Employ Incentives.** RCAQ supports the proposed use of incentives, rather than sole reliance on command and control regulations, to accelerate penetration of clean technologies in residential properties. The AQMP estimates that \$1 billion is needed for the next fifteen years to fund a wide range of incentives for all sectors of the economy. RCAQ urges the District to supplement the AQMP with a detailed action plan to establish the reasonable availability of needed incentive funds.
- **Avoid Negative Impacts on Housing Affordability, Availability.** A group of proposed control measures would impact new and existing housing in the air basin. This

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includes measures aimed at energy conservation beyond SB 350 requirements, cleaner space and water heating, and more stringent wood-burning fireplace controls, and additional requirements for new development and redevelopment above and beyond Title 24, among others.

We want to focus the District's attention to the current and projected critical housing deficit within the basin. The unmet demand for workforce housing is particularly acute. Mandated retrofits or new features imposed when a property is transferred will push housing costs up and erode affordability; the increased cost typically gets mortgaged for 20 to 30 years, compounding the impact on affordable housing. Cost increases to for-sale housing will also cause a ripple effect on the cost of the rest of the housing stock, including rentals. In order to better understand this dynamic, we request that the District provide information on the cumulative socio-economic impacts of the suite of proposed measures that impact the housing sector as part of the forthcoming Socio-Economic Analysis.

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We urge the District to insure that the AQMP does not exacerbate the region's shortage of shelter – especially affordable shelter. Control measures that impact housing must be conceived of as “win-win” measures that benefit housing and air quality concurrently. For this reason, we support the proposed incentive-based approach for ECC-03 as the most powerful way to motivate property owners and residents to incorporate cleaner, more energy efficient features and technologies in existing homes, without triggering unintended economic and health impacts associated with increasing housing costs at point of sale. Incentive programs will provide an efficient way to track and monitor the penetration of new technologies in housing.

• **Provide Ample Review Time for Draft AQMP, PEIR, and Socio-Economic Analysis.**

As of this date, neither the Program EIR nor the Socio-Economic Analysis are available to review in concert with the Draft AQMP. We urge the District to insure the opportunity for a comprehensive review of all parts of the AQMP, supported by a series of public workshops in September and October. The comments conveyed in this letter are based only on the Draft Plan and appendices available as of August 19th.

62-4

• **Push for Federal Support and Cooperation.** No matter how ambitious the District is in regulating pollutants under its authority, our air basin will not meet federal clean air standards without full federal cooperation to reduce emissions under its control. One area where this is especially apparent is the need to clean the heavy-duty truck fleet serving the South Coast basin, a significant portion of which originates outside California. RCAQ supports District efforts to secure a national clean-truck regulation that will not only clean the South Coast Basin's fleet, but reduce pollution and diesel particulates in communities all across the nation. A nationwide standard would level the playing field, allowing the South Coast Air Basin to remain competitive in the goods movement arena, which encompasses a third of California's economy.

62-5

We look forward to discussing these comments with District staff so that they can be addressed in the Final Draft 2016 AQMP to be released in September. In addition to our overarching messages, **Attachment A** presents detailed recommendations on seven proposed control

measures that would affect housing affordability and availability. Please contact Carla Walecka, RCAQ representative on the AQMP Advisory Group, at 323-342-9373 or cwalecka@earthlink.net with any questions you may have about these comments.

Sincerely,

A handwritten signature in cursive script that reads "Carol Banner".

Carol Banner, Chair
REALTORS Committee on Air Quality

Attachment A

**REALTORS Committee on Air Quality (RCAQ)
Comments On Proposed AQMP Control Measures**

ECC-02, Weatherization above and beyond SB 350 requirements

RCAQ supports the integration of clean new technologies into homes, We agree that the District should harness the emission reduction benefits of existing and planned state, federal and local energy efficiency programs and incentives.

ECC-03, Enhancement in Building Energy Efficiency and Smart Grid Technology Beyond SB 350

As noted in our cover letter, the air basin has a critical housing shortage and soaring housing costs. The District should proceed beyond the statewide level playing field set by SB 350 only if it can insure cost-effective results that do not harm housing affordability and availability, or discourage needed expansion and replacement of our housing stock. Therefore, we support the District's proposed incentives to encourage homeowners to upgrade their homes with cost/effective weatherization and energy efficiency features. This measure should allow home owners and residents to install the most cost-effective and appropriate technologies and appliances for their specific conditions and uses; one-size-fits all approaches must be avoided.

Further, the proposed control measure description should consider a variety of different types of incentives aimed at homeowners, utilities, and vendors for maximum cost/effectiveness. RCAQ looks forward to working with the District and other stakeholders to help identify the kinds of incentives and outreach necessary to motivate property owners to install the latest energy efficiency features in their homes, in a manner that does not place undue pressure on housing affordability and availability.

This measure needs to be linked with proposed FLX- 01, Education and Public Outreach, to inform property owners, residents and local jurisdictions of the availability of new technologies and models for space and water heating, low emission appliances, and energy cost savings and air quality benefits of retrofits and replacements.

As this measure is refined, we urge the District to more precisely describe the scope of surplus savings anticipated, as well as the amount of incentive funding required to achieve those surplus emissions savings. We are not able to comment specifically on the reasonableness of these two aspects at this time.

ECC-04, Cool Roof Technology and Emission Reductions

RCAQ supports District efforts to refine cool roof requirements to insure no adverse emission impact. In the event that retrofits are needed for any existing residential reflective roofs installed under the current requirements, we urge the District to provide financial incentives to those property owners.

CMB-02, Commercial and Multi-Family Residential Space and Water Heating

This measure would tighten the District's current boiler regulation, but a sense of scale is lacking in the control measure description: how many multi-family retrofits are assumed to yield a 30% NOx emission reduction by 2023, and 60% by 2031? How much acceleration of normal change-out patterns is needed? What is the expected average cost per multi-family unit? We also recommend that the timetable for implementation be tied to the commercial availability of new, cost-effective compliant boiler models. We strongly support implementing multi-family boiler change-outs through incentive programs aimed at cost/effective retrofits in order to avoid harming rental housing affordability.

CMB-04, Restaurant and Residential Cooking

This proposed measure includes residential cooking in addition to restaurant appliances. However, the control measure description does not discuss what the goal is for the residential sector. Until this is more fully developed through discussions with stakeholders, we recommend that the AQMP measure focus only on commercial applications. We recommend that any future efforts to change residential cooking appliances focus on incentives and education to motivate residents to change-out their old appliances for cleaner burning ones.

BCM-09, Tighter Wood Burning Fireplace Restrictions

This measure should be implemented only as a back-up measure if needed to attain the federal PM 2.5 standard. In the control measure description, we urge the District to maintain the ability for residents to use grandfathered wood fireplaces on as many days as possible during the winter season while not hindering attainment. We further urge the District to continue its effective incentive program for voluntary gas-log fireplace change-outs. RCAQ has supported this approach since wood burning restrictions were first added to the AQMP. Cost/effective incentives should be tailored to benefit those portions of the basin that exceed the federal PM 2.5 standard.

EGM-01, Emission Reductions from New Construction and Redevelopment

While we understand that state regulations require SCAQMD to consider a rule similar to the San Joaquin Valley's Rule 9510 development fee because it is "reasonably feasible", we do not support applying the same approach for the South Coast Air Basin. By adding costs to new construction, this rule would not only impact the cost of new homes but would have a ripple effect on the affordability of all housing in the basin. We note that new housing contributes to emission reductions by meeting current codes regarding Green materials, energy use, congestion mitigation, trip reduction ordinances, CEQA air quality mitigations, etc.

As drafted, this measure does not include emission reduction estimates or cost estimates due to uncertainty about how the measure would be structured, and does not specify the degree to which it overlaps with existing RTP/SCS strategies, Title 24, and other existing requirements that reduce emissions. For example, new construction consistent with SCAG's RTP/SCS contributes to mobile source emission reductions at the regional level that are already captured in the AQMP baseline. It is important not to double-count or duplicate emission reductions already being implemented. Until such time as this measure can be described and quantified, with a sound legal basis, it should remain in the portion of the AQMP that is not part of the enforceable commitment.

Conducting a thorough investigation through a multidisciplinary advisory group must be a prerequisite to moving forward on any kind of EGM-01 rule impacting housing. We note that the previous Proposed Rule 2301 Working Group has not met for years and would need to be reconstituted. The Realtor community would like to be involved in any EGM-01 advisory group.

Inconsistent Cost/Effectiveness Rankings

Tables 6-4 through 6-7 contain cost/effectiveness rankings for measures in Appendix IV-A. The tables assign cost effectiveness rankings even to measures that are not quantified. For example, EGM-01 is assigned a cost effectiveness ranking of 5 in the absence of either cost or emission reduction estimates. Is the “5” ranking for EGM-01 equivalent to the “5” ranking for other partially quantified and unquantified measures in this chart? A footnote acknowledges that emission reductions and costs will be determined after projects are implemented, which appears to contradict the “5” ranking.

Further, the least cost effective measures in Table 6-6 are assigned a value of “5,” while the least cost effective measures in companion Table 6-5 are assigned values of 12, 13 and 14. Is a “5” for EGM-01 equivalent to a “14” for Improved Breakdown Procedures?

We recommend that all cost-effectiveness rankings be revisited after the Socio-Economic Analysis is complete. The ranking system needs to be clearer, and the ranking values need to be comparable across mobile and stationary sources measures.

Responses to Comment Letter from REALTORS Committee on Air Quality (RCAQ)
(Comment Letter 62)

Response to Comment 62-1:

Staff appreciates the participation in the development of the 2016 AQMP and agrees with taking advantage of the co-benefits achieved with the implementation of existing programs regulating GHGs or improving energy efficiency. As such, the Plan includes measures such as ECC-01 and ECC-02 that seek criteria pollutant reduction credit from such programs.

Response to Comment 62-2:

Staff appreciates the support for incentives and refers the commenter to Response to Comment 26-3 regarding the development of the Financial Incentive Funding Action Plan.

Response to Comment 62-3:

Staff understands the concern with housing and refers the commenter to Response to Comment 38-3 regarding the measure focused on new development and re-development projects. Support for control measure ECC-03 is appreciated. It should be noted that ECC-03 would provide voluntary incentives to encourage energy efficiency. For more information on socio-economic impacts please refer to the 2016 AQMP Socioeconomic Analysis (<http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/socioeconomic-analysis>).

Response to Comment 62-4:

The release of the Draft AQMP in June 2016 was designed to allow the public to become familiar with the proposed strategy and provide comments to be included in a Revised Draft Plan. Release dates have been staggered for the Draft Program Environmental Impact Report (PEIR) and Socioeconomic Assessment in order for the supporting documents to analyze the latest version of the Plan. As such, the costs and benefits analysis was released August 31, 2016 and the PEIR was released mid-September in time for review of the Revised Draft Plan that was released early October. Similarly, Appendix V and VI did lag behind the release of the Draft Plan but were available by September and provided over 30 days to review and comment. All those comment periods overlapped to allow for a comprehensive, concurrent review by the public.

In addition, staff is providing a 60-day public review and comment period for the PEIR and while each of the draft Socioeconomic chapters have been given a 30-day public review and comment period, a complete updated Socioeconomic Assessment with appendices was released in November for another 30-day public review and comment period. Comments on the Revised Draft Plan were encouraged to be provided 30-days after its release so staff could incorporate changes into the Draft Final Plan released in December.

Response to Comment 62-5:

Staff agrees that the Plan requires support on the federal level to provide a level playing field across the nation with a national clean truck regulation. Please see Responses to Comments 30-5 and 54-2 regarding “fair share” reductions from the federal, state and local levels.

Response to Comment 62-6:

Staff appreciates the support from the commenter.

Response to Comment 62-7:

Staff appreciates the participation in the development of ECC-03 and looks forward to future participation in the upcoming workgroup. Energy usage within the residential sector shows a correlation with household income. ECC-03 will assist removing some of the financial barriers by provided incentive funds to help lower the upfront capital equipment cost and also lower operation and maintenance costs as compared to an older existing appliance or application. The incentives proposed in ECC-03 would be used to improve housing and make it more affordable to incorporate energy efficiency. The availability of homes would not be affected.

Staff agrees that public outreach and education are essential to making the incentive program successful and fully intend to incorporate this into the program. Along with the upcoming working group with stakeholders staff intends to seek a collaboration with solar contractors, who review residences for solar panel additions, to promote program and encourage solar panel purchasers to incorporate additional zero and near-zero appliances (as mentioned in ECC-03) to into the home which would be coupled with the solar energy being generated.

Response to Comment 62-8:

Staff appreciates the support from the commenter. Staff will determine whether or not it is cost effective to install retrofits before proceeding to change requirements. A public working group will be formed if incentives are considered.

Response to Comment 62-9:

The control measure does not propose to amend existing boiler requirements to make them more stringent. The technology proposed in the AQMP is available now. The proposed programs provide incentives for commercial and multifamily property owners to convert to currently available ultra-low NOx units with emissions significantly lower than rule requirements in the short term and cost effective zero and near zero emission alternatives for the long term. Incentives would help property owners purchase new more efficient and lower NOx units near the end of the useful life of their existing units. An estimate of the incremental cost of purchasing lower emission units and the incentive per unit are identified in the AQMP and the socioeconomic assessment for the AQMP. Many businesses or buildings would have one unit. However, for businesses and buildings with multiple units, the cost can be estimated based on the number of units the owner chooses to replace. Staff's estimates of emission reductions, cost per unit, and the population of units is provided in the AQMP and the socioeconomic assessment for the AQMP.

Response to Comment 62-10:

The control measure does focus on commercial cooking appliances. All the proposed reductions are from incentives for commercial cooking appliances. However, in the long term, cost effective energy efficient or low NOx residential appliances could also be incentivized or included in a manufacturer based regulation.

Response to Comment 62-11:

Rule 445 is currently structured to curtail use of wood-burning devices through forecasting so called “no-burn” days, which otherwise allows for the use of grandfathered wood fireplaces on as many days as possible during the winter season. In addition, control measure BCM-09 seeks to expand the use of incentives associated with voluntary gas-log fireplace change-outs through the use of higher incentives or expansion of the eligible geographic area, focusing on expanding the effectiveness of the program. Additional analysis called for by this control measure will determine whether additional curtailment for 24-hour PM_{2.5} concentration reduction purposes are appropriate and necessary to assist in attainment of the annual average federal PM_{2.5} NAAQS.

Response to Comment 62-12:

Please see Response to Comment 64-12 regarding San Joaquin Valley’s Rule 9510 and Response to Comment 57-4 regarding emission reduction estimates.

Response to Comment 62-13:

The cost-effectiveness ranking is determined based on the best available information at the time of SIP submission. In Table 6-4, although cost effectiveness has not been quantified for BCM-08 and BCM-09, they are assigned a ranking of “4” relative to other TBD measures that are ranked at “5”, based on the estimated minimal cost of implementation.

The ranking in each table is relative to other measures in the same table. For example, the cost-effectiveness of the measure that is assigned a ranking of “4” in Table 6-4 is not equivalent to the 4th most cost-effective measure in Table 6-5. Inter-comparison across mobile and stationary measures could be done by relating the cost effectiveness in dollars/ton.

The Preliminary Draft Socioeconomic Report was released on August 31, 2016 with a comment period of 60 days. The Draft Socioeconomic Report was released on November 19, 2016, with an additional public review and comment period of 30 days that ended on December 19, 2016. Both released versions covered the estimates of costs, cost-effectiveness, and benefits of the plan and were released earlier to maximize the review time for the public and stakeholders.

Comment Letter from Richard Luczynski (Comment Letter 63)

DRAFT 2016 AIR QUALITY MANAGEMENT PLAN



2016 AQMP Comment Form

Please enter your contact information, comments and/or upload comment files below. The information collected may be used to provide further information about public workshops and hearings, and other events related to the 2016 AQMP. Responses to comment will be compiled and included in the final Plan package.

***Fields Required to Submit a Comment**

Commentor Contact Information

Commentor's Name * Richard Luczynski	Organization * No Affiliation	Address 942 N. Chester Ave		
Email Address * rluczynski@gmail.com	If not representing a specific organization, please enter "No Affiliation".	City Pasadena	State CA	Zip Code 91104
Phone Nbr (626)798-2030		a		

Comments (Unlimited Size)

AQMP, You can have all the measurements of Air Quality posted in some web site, but until people can see those numbers each day, with the health risks they are subjecting themselves too each day, they will never make the connection of the accumulation effects they are doing to their health. You need to do a much better job with educating the public through as many venues as possible. Even though each of the pollutants found in the Air Quality information is given a value there is still some harm to the health of everyone who breathes the air where they live, work and play. I suggest you install more real time Air Monitors along all Freeways because the air will have different values in each location. So let people see and hear from whatever sources that will explain the harm that is caused each day just breathing the air in their communities. Maybe when people understand the harm caused they will move faster to solve those problems. At present we are just taken out of the decision process and letting Business and Government continue to kick the problem down the road, thinking in another ten or 15 years it will disappear. Let's move faster by showing the people the harm that is being caused by bad air today. In my community of Pasadena, CA.. I don't see any helpful Air monitoring equipment used to inform people of a potential health risk, but I do see signs about traffic problems, Alerts and Sporting and Concert events. So a sign certainly can be used for Health Alerts from Air Quality. Good or Bad.

63-1

Upload Additional Comment and Supporting Files (30 Mb Maximum per file)

AQMP Comments Files

Note: Supported upload files include all versions of Microsoft Office, jpeg, tiff, PDF, mp3, mp4, and text files.

Commentor Signature *

Richard J. ...

For More Information Contact: Angela Kim (akim@aqmd.gov) (909) 396-2590

Responses to Comment Letter from Richard Luczynski
(Comment Letter 63)

Response to Comment 63-1:

Staff agrees the public outreach and education is critical in establishing an informed public. As such, the 2016 AQMP includes a measure, FLX-01, that is designed to provide education, outreach and incentives for consumers to contribute to clean air efforts. Examples include consumer choices such as the use of energy efficient products, new lighting technology, “super-compliant” coatings, tree planting, transportation choices, and use of lighter colored roofing and paving materials which reduce energy usage by lowering the ambient temperature. With regard to the air quality data, staff does provide current air quality data online of all locations in our jurisdiction (<http://www.aqmd.gov/home/library/air-quality-data-studies>) in both the form of a map as well as written data. In addition, the forecasted air quality data and the historical air quality data from the past is provided from the same webpage.

With regards to air monitoring, since 1977 the SCAQMD has monitored air quality in the region and currently operates 38 stations (<http://www.aqmd.gov/docs/default-source/default-document-library/map-of-monitoring-areas.pdf>) to assist in understanding the air quality for various locations. Separately, we do have monitors along the freeways but the location decisions are made in collaboration with U.S. EPA. Near-roadway studies have been conducted (<http://www.aqmd.gov/docs/default-source/air-quality/air-quality-monitoring-studies/Near-Road-Monitoring/special-monitoring-studies.pdf?sfvrsn=2>) and staff encourages the public to read the published results also available online at <http://www.aqmd.gov/docs/default-source/air-quality/air-quality-monitoring-studies/near-roadway-study.pdf?sfvrsn=2>.

Comment Letter from Construction Industry Air Quality Coalition (Comment Letter 64)



August 18, 2016

Michael Krause
SCAQMD Headquarters
21865 Copley Drive
Diamond Bar, CA 91765

RE: DRAFT 2016 AIR QUALITY MANAGEMENT PLAN

Coalition Members



Associated General Contractors
America-San Diego Chapter, Inc.



Building Industry Association
of Southern California



California Construction Trucking
Association



Engineering
Contractors Association



United Contractors



Southern California
Contractors Association

Dear Mr. Krause:

The Construction Industry Air Quality Coalition (CIAQC) is pleased to submit the following comments on the portions of the AQMP that have been completed and released for public review. CIAQC participated in the development of both the **BizFed** and **Southern California Leadership Council** comment letters as well. While we concur with all the comments in those letter, we want to give added emphasis to those comments and add a few that are specific to our industry.

We are generally pleased with the overall direction of the proposed plan and its emphasis on incentives to achieve the proposed emission reductions. Incentives have been used effectively in other air quality programs to achieve extra emission reductions. In particular in the Carl Moyer program and the SOON program to achieve early emission reductions from off-road construction equipment.

1. **SCAQMD needs to make it a top priority to improve the accuracy of Photochemical Modeling Ozone Emission Reduction Predictions.** It is becoming more and more difficult and expensive to reduce emissions as we approach the level of zero in our quest for clean air. Since modeling is used extensively to predict the "emission" reductions needed it is important to get the numbers right. We are aware of independent analysis which indicate that the two previous plans developed by AQMD under predicted the emission reductions. This was based on real-time monitoring data in which actual readings indicate faster reduction that the model predicted. Achieving the emission reductions is extremely costly and it is important that employers not be required to reduce "phantom emissions" that never really existed in the first place.

64-1

2. **We are concerned about the effort to control growth and the use of indirect source controls.**

It is extremely difficult to construct new development in the South Coast Air Quality Management District. The California Environmental Quality Act (CEQA) and the myriad of agency rules and regulations have generated a housing and employment crises in Southern California. CARB has already adopted the most stringent rules in the nation for on and off-road sources. These measures will achieve significant reduction and have come at great cost to the construction industry in both dollars and jobs. Having SCAQMD add an additional layer of regulation will only punish an industry that is still struggling to recover from the recession of 2007.

64-2

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Major Funding Provided by the Construction Industry Advancement Fund and the Fund for Construction Industry Advancement



Coalition Members



Associated General Contractors
America-San Diego Chapter, Inc.



Building Industry Association
of Southern California



California Construction Trucking
Association



Engineering
Contractors Association



United Contractors



Southern California
Contractors Association

3. **The Plan appears to rely heavily on premature death and mortality to justify the extraordinary cost of the proposed emission reductions.** It appears increasingly that the science identifying premature death from PM 2.5 is uncertain at best. Despite the air quality challenges in Southern California, California residents have the lowest mortality rate of all 50 states but Hawaii. Further Southern California has a lower mortality rate than the state as a whole. Even the authors of the studies cited by SCAQMD in their health effects chapter admitted that several years ago that their data did not support a finding of premature death from PM2.5 in California, or the western states for that matter. Regardless of the Federal standards and the resources used by the Federal regulators to set those standards, if the California evidence challenges those decisions, you owe it to our community to report those inconsistencies. 64-3

4. **We are concerned about the vagueness of the Off-Road emission targets and timing in the Draft Plan.** The Zero Emission Off-Road Emission Reduction Assessment; Zero Emission Off-Road Work-site Emission Reduction Assessment and the Zero Emission Diesel Requirement would all seem to directly impact the construction industry. However, these are all designated and "Not Yet Quantified", in both the 2023 and 2031 time-frame. Most of this equipment is very expensive to both acquire and operate. Business plans for equipment replacement are made many years in advance. The industry is already under heavy regulatory pressure to replace virtually all of its on-road, off-road and portable equipment in the time frames considered by the plan. This added uncertainty could have the unintended effect of slowing the turnover of diesel equipment while the long range plans are developed. 64-4

CIAQC appreciates the openness and willingness of the SCAQMD staff to engage our industry in the development of this AQMP. We want to continue to work closely with your staff as the specifics for the plan are developed. Our industry has many knowledgeable and technically skilled individuals. We are willing to share our expertise with your staff to write an Air Quality Management Plan of which we can all be proud.

Thank you.

Sincerely,

Michael Lewis, Senior Vice President
Construction Industry Air Quality Coalition

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Main Funding Provided by the Construction Industry Advancement Fund and the Fund for Construction Industry Advancement

Responses to Comment Letter from Construction Industry Air Quality Coalition (CIAQC)
(Comment Letter 64)

Response to Comment 64-1:

Numerical models have a certain level of uncertainty and limitations, but SCAQMD uses U.S. EPA guidance, a state-of-the science modeling platform and the most updated emissions inventory. Also, SCAQMD is willing to collaborate with stakeholders to improve modeling performance and emission estimation. For more specific responses, please see Responses to Comment Letters 52 and 58.

Response to Comment 64-2:

The SCAQMD staff has not concluded that a future regulation similar to San Joaquin Valley APCD Rule 9510 is the appropriate control method for the South Coast Air Basin. However, as stated in EGM-01, the SCAQMD must evaluate San Joaquin's rule as feasible measure to implement in the South Coast Air Basin. In addition, proposed measure EGM-01 is not intended to control growth, but rather identify actions that can mitigate emissions and potentially result in additional emission reductions. These actions can be regulatory or voluntary in nature and will be identified through a public process. SCAQMD staff believes that through the public process, actions can be identified that may either not place undue economic burden to the industry or minimize the economic impact to the industry.

The SCAQMD mobile source measures are proposed to help implement the State Mobile Source Strategy "Further Deployment of Cleaner Technologies" measures. The SCAQMD is identified as an implementing agency along with CARB and U.S. EPA. As such, many of the SCAQMD mobile source measure are seeking to identify actions that potentially result in additional emission reductions that can go towards meeting the "Further Deployment" measures emission reductions.

Response to Comment 64-3:

In the latest Integrated Science Assessment of Particulate Matter (2009), the U.S. EPA determined that the scientific evidence is sufficient to conclude that PM_{2.5} causes premature mortality. Specifically, given multiple lines of scientific evidence from a broad range of studies, the overwhelming scientific consensus is that PM_{2.5} does, in fact, cause premature death. The fact that California has a low age-adjusted mortality rate does not preclude the population from experiencing the negative health effects of poor air quality. In fact, the Draft AQMP Appendix I (Health Effects) already discusses several epidemiological studies conducted in California and Southern California that link PM_{2.5} exposures with increased mortality, especially mortality from cardiovascular causes. The epidemiological studies summarized in the Draft Appendix I include studies that show strong associations between PM_{2.5} and premature deaths, as well as studies showing weaker or less certain associations, and those that show no effect, such that the readers can be informed of these studies, and can refer to the U.S. EPA Integrated Science Assessments or to the individual research publications for additional detail. While there are a small handful of studies that show no effect, the vast majority of the studies (including several conducted in California) show that PM_{2.5} is linked to increased mortality risk.

Beyond public health benefits, another justification of the Plan is simply that we legally need to meet the state and federal standards within the specified time frames. The socioeconomic analysis provides information about the potential incremental costs, benefits, and macroeconomic impacts associated with the Plan, and it quantifies these effects where data and methodologies are available. The purpose of the

socioeconomic analysis is therefore to further inform public discussions and the decision-making process associated with the adoption of the Plan, but it is not part of the “justification” of the Plan.

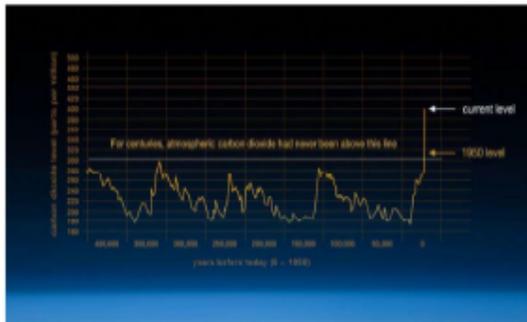
Response to Comment 64-4:

The comments are related to the measures included in the State Mobile Source Strategy. Your comment will be forward to CARB.

Comment Letter from Del Amo Action Committee (Comment Letter 65)

August 19, 2016

Climate change: How do we know?



For if people do these things when the tree is green, what will happen when it is dry?" Luke 23:31

Climate Change Chart from NASA

From Florence Gharibian: Florencegharibian@yahoo.com

Chair of the Del Amo Action Committee, participant in the Los Angeles Environmental Justice Network, Department of Toxic Substances Control (DTSC), Branch Chief, LA Enforcement Program (Retired).

The comments on the AQMP in this correspondence address:

- Placing a priority on facilities that pose an eminent and substantial danger to public health.
- SCAQMD as the primary regulatory agency enforcing air regulations at Stationary Sources.
- The importance of an effective enforcement program in ensuring regulatory compliance.
- Proposal for a program to encourage new clean air technologies.
- The importance of accurate petroleum refinery air monitoring.
- SCAQMD role in achieving more sustainable management of solid waste.

As I write these comments a fire storm burns out of control in San Bernardino County. The severity of the fires is a result of the California drought and unusually hot weather. 2016 is the hottest year on record across the globe. It is my firm belief that Climate Change is the result of the pollution of the earth. The existence of mankind hangs in the balance.

65-1

I submit these comments today because I believe that nothing is more important than protecting our environment, stopping pollution and cleaning up the damage already done.

Please let me tell you about the people in my life whose health was damaged by air pollution.

I met a dear friend in 1985 when I transferred from the USEPA to the State of California, moved to Los Angeles and became an inspector in training. She was one of the most diligent inspectors at the DTSC. Several years later she was working in the gulf on the 2010 BP Deep Water Horizon spill. While she was there a US refrigerated logistics provider had a major release of ammonia. She was one of over 150 people exposed to the ammonia during the release. Her lungs were seriously damaged. Her health permanently impaired.

On June 1, 2012, I lost my husband Joseph Gharibian. This handsome and wonderfully unique man died at age 65 of pulmonary fibrosis. He spent much of his career working as a pipe line draftsman in a refinery in Abadan, Iran. Almost one year later on May 31, 2013, I lost a dear friend to lung cancer. She never smoked.

I know mothers who take their children to the hospital emergency room frequently due to asthma. I know how difficult it is to spend the night in the emergency room with a loved one and then attempt to resume your normal life the next day.

I know many people have this sadness in their lives.

On August 19, 2016, the Los Angeles Times had two environmental articles. The articles were together on the same page. The first article is about lead findings at three elementary schools located near Exide. I am ashamed when I read articles about Exide. We should all be ashamed.

The headline for the second article is "Clean Tech Backs Emission Bill." Mark Bauhaus is quoted in the article, "Business must stand up and say this is important." Catherine Reheis-Boyd, president of the Western States Petroleum Association is quoted to say she supports addressing climate change but fears the State's policies are "putting it at a competitive disadvantage." Does her comment mean the refineries might leave Los Angeles?

I attended and spoke at the March 4, 2016, SCAQMD Board meeting when Barry Wallenstein was dismissed. An earlier agenda item on a SCAQMD rule offered the opportunity for a number of people to speak out regarding a new rule. Apparently the final rule as adopted by the Board was an industry modified version. Senator Kevin de Leon sent correspondence to the Board requesting reconsideration of the rule. A large number of people spoke in support of the rule. An impression was created when one of the speakers asked that everyone supporting the rule stand up. Of course most of the people who stood up and supported the rule are professionals working for the petroleum industry. The people representing Environmental Justice/injustice communities are often outnumbered. I saw this again on August 16, 2016, at the SCAQMD Advisory Committee meeting. The network of professionals ready to support industry appears to be the majority on the Committee.

The new acting SCAQMD Executive Officer, Wayne Nastri offered his proposed Mission Statement and draft Goals and Objectives at a recent Board meeting:

Mission Statement

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

I found Wayne Nastri's statement of goals and objectives in the accompanying document far more persuasive than statements in the draft AQMP. I suggest that his document be incorporated in the AQMP. The 15th goal in the document calls for work with residents and community leaders in disproportionately impact communities to remedy their air quality concerns. The 16th goal discusses an assessment of the SCAQMD community response program and suggests community education on how to file a citizen complaint. My comments also discuss citizen complaints but suggest a more responsive SCAQMD.

65-1
Con't

The Del Amo Action Committee

The Del Amo Action Committee works with the community neighboring the Del Amo/Montrose Superfund sites. It is correct and appropriate for the people living and working this community to be concerned about;

- Health and Safety threats from a company repackaging large volumes of Chlorine from railroad tank cars in a plant in close proximity to where they live.
- Vapor intrusion in their homes coming from pollutants in the soil and groundwater from Montrose Chemical, the Del Amo waste pits and other major industrial facilities currently operating or closed.
- Major safety threats due to hydrofluoric tanks at the Exxon/Mobile Refinery less than three miles from their community.

It is correct and appropriate for all LA's citizens to be concerned about clean air in the Los Angeles Basin. It is correct and appropriate for all of us to be concerned about Climate Change because we are all living on a small planet where climate change has the potential to create deserts and floods and de-population of large areas of this planet. Recently NASA released a report reflecting the shrinking groundwater resources across our planet. Groundwater in the Los Angeles area is precious and must be protected. The world's largest underground aquifers – a source of fresh water for hundreds of millions of people – are being depleted at alarming rates, according to [new NASA satellite data](#) that provides the most detailed picture yet of vital water reserves hidden under the Earth's surface;

65-1
Con't

The June 11, 2016 New York Times include an editorial written by Richard Conniff. The editorial is entitled, Dear Conservatives You Can Go Green Again. With recent polls suggesting that climate change has begun to loom ominously for many Republicans as it does for the majority of Democrats, it may be time for big, bold, even alarmingly bipartisan thoughts. In the end, our need for clean air to breathe, safe water to drink, a climate that does not change too drastically and forests, oceans and wildlife that remain healthy and resilient has almost nothing to do with whether we are Republicans or Democrats, conservatives or liberals, and everything to do with being fellow residents of Planet Earth, with no place else to call home. So here's the idea: Why don't we all just take a walk and have a long conversation about how we can fix up the old neighborhood together?

The South Coast Air Quality Management District Board is empowered to improve air quality and is responsible for taking the right steps to make that happen.

The South Coast Air Quality Management District has always and will continue to have a pivotal role in improving air quality in Los Angeles and surrounding areas. An Air Quality Plan should be a foundational document for the continuing and future work of the South Coast Air Quality Management District. This document must not reflect unacceptable compromise with industries that do not want to do enough to end the pollution they create.

The comments in this correspondence are based on the following foundational principals:

- Three Foundational Principals for Governing Effective Environmental Regulatory Organizations**
1. The cultural and effectiveness of any organization begins with leadership at the top.
 2. New Technologies have driven clean air, clean water and solid waste management. New Emerging Technologies provide the key to further sustainability progress.
 3. Laws, rules and regulations are not effective without oversight and enforcement.

1. The SCAQMD needs to fine tune the ability to recognize and respond to situations and facilities that pose an Imminent and Substantial endangerment.

The draft Plan includes a commitment to prioritize existing conditions that “*represent an imminent and substantial endangerment to public health or environment.*” 110(a)(2)(G)]. The SCAQMD has knowledge of existing conditions at businesses in the basin that represent an imminent and substantial endangerment to public health and the environment. Those conditions must be prioritized and the risks eliminated.

65-2

Citizen complaints can be a source of information regarding imminent and substantial endangerment. Often those complaints come from employees of a company doing unsafe and dangerous things. The ability to respond to high priority citizen complaints is critical. This involves having the right people take the complaints. Those people must have an ability to recognize a high priority complaint and contact the right AQMD inspectors to respond to the complaint. Latter in this document I will discuss two situations involving potential substantial endangerment to public health.

2. New Technologies pave a path to the future. The SCAQMD must invite and encourage the development of New Technologies. These new technologies will provide effective steps in achieving clean air. The use of new technologies is apparently defined by some as the “Black Box”. Open the box, open the door and welcome the future.

The draft Air Quality Plan discusses incentives funding. A small amount of that funding could go to the creation of a New Environmental Technologies Office perhaps in conjunction with Cal/EPA. The office would have an advisory committee with members from the academic community and industrial community. Proposals for new technologies would be encouraged. The proposals would then be evaluated by technical experts in the appropriate field.

65-3

The New Technologies Group could have an advisory committee with the knowledge and ability to bring new technologies forward. This committee could be made up of members of the academic and research communities. Please seriously consider my proposal.

3. The SCAQMD is responsible for enforcing laws and regulations.

The SCAQMD must have an enforcement program capable of monitoring compliance and taking enforcement at all stationary sources in the District. Stationary source compliance with permits, laws and regulations is essential to meeting Air Quality Objectives. A strong enforcement program is critical in assuring stationary source compliance is achieved. Estimates of air quality improvement are based on permitted stationary sources in compliance with their permits, laws

65-4

and regulations. Companies operating in serious non-compliance pollute the environment and hinder progress toward cleaner air. All of Cal/EPA's Boards and Departments are developing Supplemental Environmental Project (SEP) guidelines to be used in penalty determinations. The SCAQMD should develop SEP guidelines.

Wayne Nastri's goals document calls for the inspection of all Major or RECLAIM sources at least annually and inspections of chrome plating facilities quarterly. 20,000 site visits for compliance evaluations and inspections of 3,300 portable equipment units. In addition 1,800 asbestos demolition or renovation activities. He suggests the continuation of an evaluation program for select industries.

I suggest another inspection priority; the 9 petroleum refineries posting a WARNING notice in the Los Angeles Times this week. The notice warns the public that the companies have Chemicals known to the State of California to cause, cancer, birth defects and other reproductive harm. The notice was published by BP America, Exxon Mobil Corporation, Chevron, Shell Oil, Tesoro, Phillips 66, AERA Energy, VENOCO, LLC and Valero. The inspections should be done even if it does place these companies at a competitive disadvantage.

I pray the SCAQMD has the enforcement personnel and resources to complete this critical work. Strong enforcement requires management support, trained and capable inspectors and strong legal support.

4. The Petroleum Industry must maximize air pollution reduction.

A fire at the Chevron refinery in Richmond in August 2012 raised public questions and concerns about refinery safety and emergency response in California. Following a directive from the Governor Cal/EPA formed an Interagency Task Force on Refinery Safety. The Task Force membership includes ten state agencies, U.S. EPA, and local agencies from areas of the state that contain refineries. On July 2013 a report on "Improving Public and Worker Safety at Oil Refineries" was completed. Can I assume the SCAQMD participated in this work? On July 16, 2016, California announced regulatory proposals to improve safety at the refineries. The regulatory proposals are intended to make California refineries safer both for workers and surrounding communities.

Recently the California Department of Industrial Relations and the California Office of Emergency Services published draft regulations to improve worker safety at refineries and adequate emergency response to a fire or release. The new regulatory programs should support the work the SCAQMD does with the refineries in our area.

The petroleum industry infrastructure in Los Angeles is antiquated (most of the refineries began operating in the 1910-1920 time period). The petroleum refineries have high risks for accidents and pose continuing health threats to the people living near and working in the refineries.

Wayne Nastri's 5th goal statement calls for the further development of enhanced emissions/ambient monitoring capabilities. Under this goal the SCAQMD would conduct comprehensive research by evaluating a variety of advanced optical remote sensing technologies for the purpose of providing SCAQMD and the public with enhanced real and near real time monitoring capabilities that will ultimately result in improved control efficiencies and compliance. Four advanced optical technologies will be initiated and demonstrated in the field to characterize fugitive VOC emissions

65-4
Con't

65-5

from refineries, gas stations, oil wells and other point sources. This work will be additive to in stack and ambient real time demonstrations. The use of these air testing technologies will advance the SCAQMD's ability to better monitor fence line air emissions from refineries.

65-5
Con't

Last summer I testified at a USEPA hearing in Wilmington regarding refinery safety. I also prepared correspondence on the subject for submittal as a public comment. I've included that correspondence with these comments.

5. Sustainable Solid Waste Management Programs. Recently I attended a work shop sponsored by the Los Angeles Department of Public Works. The workshop showcased programs underway to maximize sustainability in solid waste management. The Los Angeles Environmental Justice network is very concerned about potential dangerous air emissions from trash to energy processes. The South Coast Air Quality Management District can provide support in the effort to modernize solid waste management by doing air quality monitoring to ensure the new trash to energy processes do not pollute the air and pose a danger to communities near the facilities.

65-6

During the Wilson Administration I was the Director of the Inland Empire Permit Assistance Center. One of Governor Pete Wilson's top priorities was to improve California's Economy. His administration convened public meetings in Los Angeles with major industry sectors. The sectors in Los Angeles included the entertainment industry, the media industry, the electronics industry and the garment industry. The Wilson Administration may have anticipated input regarding burdensome regulations stifling growth. The comments from representatives from the four sectors were surprising. When moderators sought information regarding impediments to further expansion and growth in the industries, when participants answered questions regarding why their employees don't want to move to the Los Angeles basin, all the representatives gave similar responses. They were and likely remain:

65-7

- Environmental Pollution
- Constantly congested and dangerous freeways
- Inadequacies in K-12 education

It was also interesting to learn the difficulties the sectors experienced when finding qualified employees. Participants identified two attributes their employees needed, the inability to get along with others and work in a team and the ability to find new alternatives and creative problem solving skills.

Comments on policy statements in the draft SCAQMD plan

Eliminate reliance on future technologies (CAA 182 (e)(5)) measures to the maximum extent possible by providing specific control measures which have quantifiable emission reductions and associated costs.

65-8

I don't understand the need for a goal that states that the AQMD will deny the possibilities of emerging or future technologies to the **maximum extent possible**. This statement implies that ranking high with the AQMD are existing control measures with quantifiable emission

reductions and associated costs. The cynical might suggest this means doing it all the same old way.

Why? Why is the first plan objective eliminating reliance on future technologies to the maximum extent possible? What could possibly be forward thinking in regard to this objective? What will be achieved by solely relying on current, specific control measures which may not be progressive? Why adamantly reject new technologies as the first step out of the gate?

Calculate and take credit for other planning efforts (e.g., GHG reduction targets, energy efficiency and transportation).

65-8
Con't

First, what does this mean? Second, why are the only words abbreviated in this statement GHG (I presume the abbreviation is for Green House Gas)? Third, what does this objective hope to accomplish? Does it mean that if the District plans something or if the regional planning agency plans something emission reduction credit will be given to the SCAQMD for this?

65-9

Develop a strategy with fair-share emission reductions at the federal, state and local levels.

This is an unclear statement also. Does it mean that if the basin doesn't meet air quality standards the AQMD can put the responsibility for failure on the CA Air Board or the USEPA? I'm not familiar with a fair-share emission reduction.

The plan goes on to say that the District will prioritize non-regulatory, win-win approaches. Does non-regulatory mean no rules, no enforcement? In addition special consideration and prioritization of non-regulatory strategies that contribute to the economy of the area will be utilized to reduce Ozone and PM.2.5 emissions?

65-10

It seems safe to say that the AQMD Plan objectives are not inspiring or possibly even understandable. I recommend the inclusion of Wayne Nastro's recent draft Mission Statement and Goals in the AQMP.

The plan does call for the Prioritize existing conditions that *represent an imminent and substantial endangerment to public health or environment. 110(a)(2)(G)*.

The SCAQMD has knowledge of existing conditions at businesses in the basin that represent an imminent and substantial endangerment to public health and the environment.

April 7, 1990 Los Angeles Times.

Declaring that the risks of hydrofluoric acid are unacceptable in urban Los Angeles County, the South Coast Air Quality Management District on Friday became the first government agency in the country to move toward phasing out the hazardous chemical at four oil refineries and a major i Despite objections from industry, the air quality agency set a tentative deadline of Dec. 31, 1994, for eliminating the acid at the five largest users in Los Angeles County--four oil refineries and a refrigerant manufacturing plant. The 11-1 vote came after a two-year study triggered by major oil refinery accidents involving the acid in Torrance and Texas. Only Los

Angeles County Supervisor Mike Antonovich, an AQMD board member who argued that the move would eliminate jobs, voted against the proposal.

May 9, 2016 Daily Breeze

The Daily Breeze reported on the near miss when the Exxon Mobile air pollution equipment exploded. Equipment falling to the ground during the explosion narrowly missed the hydrofluoric acid tanks nearby. As a Representatives Ted Lieu and Maxine Waters wrote a letter to the South Coast Air Quality Management District, which is studying safer alternatives to the use of the acid. When exposed to air in high enough quantities, the acid can form a toxic, ground-hugging cloud that could kill or injure thousands. In 2016 The Daily Breeze also reported:

The region's air pollution watchdog has committed to studying a viable alternative to a potentially lethal chemical that puts thousands at risk of death or injury who live near the ExxonMobil refinery in Torrance and the Valero refinery in Wilmington.

From April 1990 to May 2016 is a long time for the SCAQMD to study an issue that could injure or kill thousands. Please think about what would happen if an accident did occur and thousands were injured and take the necessary action to eliminate the use of hydrofluoric acid at refineries.

In March 2016, the SQAMD made a decision to fire Barry Wallenstein, a man with extensive knowledge and experience. Numerous environmental organizations spoke out in opposition to this action. We all got one minute to express our concern. As mentioned earlier in this correspondence, the earlier agenda item was the dominant topic in the meeting. I now wish I would have taken the opportunity to speak under that agenda item. The people who spoke under that agenda item got three minutes. The majority of those speakers represented the petroleum industry.

I returned to the podium and asked for one more minute. I think everybody wondered what I was doing, I even did. In my effort to condense what I planned to say from about two minutes to one I failed to speak God's words.

In Isaiah chapter 24 the 8th Century BC prophet, poet and politician predicted that the earth would be devastated. All will be the same, the priest and the people, the master and the servant, for mistress and maid, the seller and buyer, the borrower and lender. The earth will be completely laid to waste. It will dry up and wither. Experts on Climate Change also warn us all of this devastation. They warn that the time when Climate Change will cause this wide spread devastation is uncertain. Thank you for considering my comments and the tremendous work underway at the SCAQMD.

Sincerely,

Florence Gharibian

65-10
Cont

Responses to Comment Letter from Del Amo Action Committee (Florence Gharibian)
(Comment Letter 65)

Response to Comment 65-1:

Staff appreciates the work done by the Del Amo Committee and shares the air pollution concerns in the region that affects the environment and public health of the population. The Draft Plan has been revised to highlight the proposed regulatory action and reiterate the importance on focusing on Environmental Justice areas.

In regard to the AQMP advisory group, it is comprised of approximately forty individuals drawn from a cross-section of the community representing major businesses, small businesses, environmental groups, government agencies and academic researchers. The membership was originally approved by the SCAQMD Governing Board at its February 7, 2014 meeting.

Response to Comment 65-2:

Staff agrees that response time is critical in determining the potential problem and source of the problem. The SCAQMD has a well-established complaint line, effective permitting program, educated and available enforcement team, an extensive monitoring system, on-going source testing practices, as well as experienced public outreach division. The SCAQMD is also a CEQA lead agency that evaluates the impacts of large air polluting projects and oversees implementation of measures to mitigate significant adverse impacts. Staff intends to continue to prioritize complaints of dangerous situations and work to remedy the situation to the best of our ability.

Response to Comment 65-3:

Staff agrees with the need to deploy new cleaner technologies in all appropriate areas. The Revised Draft Plan includes new language to prioritize maximizing emission reductions utilizing zero-emission technologies when cost-effective and feasible and near-zero emission technologies in all other applications.

Staff appreciates the suggestion for creating a New Environmental Technologies Office. The SCAQMD currently has a Technology Advancement Office that cosponsors low- and zero-emission and clean fuel technology development and demonstration projects in a cooperation with private industry, technology developers, and local, state, and federal agencies.

Response to Comment 65-4:

Please see Response to Comment 65-2 regarding the established permit program and other effective tools implemented by the SCAQMD. The SCAQMD has a strong enforcement program that has a mandate under both state and federal law to enforce health standards. Staff appreciates your comment on inspection priorities. The suggestion regarding the development of SEP guidelines is not part of the AQMP, but will be directed to the General Counsel's office.

Response to Comment 65-5:

The 2016 AQMP is comprised of a series of regulatory control measures including one that would assess the RECLAIM program (CMB-05) and another focused on gas handling from non-refinery flares (CMB-03)

which primarily can be found at oil and gas production sites. In addition, there is a proposed control measure (FUG-01) to improve detection of leaks with some of the new technologies mentioned by the commenter.

Response to Comment 65-6:

Staff shares the concern regarding new processes that could generate unwanted secondary impacts and in particular how it would affect air quality.

Response to Comment 65-7:

Air pollution is not only a deterrent for new businesses and employees, it also affects the health and work productivity of the existing workforce, and thus potentially impacting the success of businesses. These concerns are more reasons to continue to work towards reducing air pollution in our region.

Response to Comment 65-8:

The concern raised by the commenter requires clarification. The Clean Air Act (CAA) allows for areas of extreme non-attainment to rely on future technologies that have yet to be developed as part of the emission reduction package that is used in the modeling to demonstrate future attainment of the federal air quality standards. It is commonly referred to as a long-term measure or “black box” because the specific action to achieve those reductions is undefined. Again, this is allowable under the CAA but the Plan objective quoted by the commenter is a goal to eliminate reliance on a “black box” and actually define a pathway to achieve all of the future emission reductions. New technology is not being rejected but rather defined and promoted. Staff knows that zero and near-zero emission technology will be key to meeting the standards. The Plan defines the targeted sources such as on-road vehicles, off-road equipment, aircraft, ships and locomotives, and promotes the deployment of zero emission technologies, when cost effective and feasible, and near-zero emission technologies in all other applications.

Response to Comment 65-9:

Some measures will achieve emission reductions of criteria pollutants by determining the co-benefits from the implementation of existing regulations, such as greenhouse gas (GHG) requirements and energy efficiency programs. The SCAQMD will be responsible for tracking the emission reductions and justifying why those reductions will be permanent, enforceable, surplus and quantifiable before earning credit for those reductions in the State Implementation Plan (SIP).

Response to Comment 65-10:

Please see Responses to Comments 30-5 and 54-2 regarding the meaning of “fair share” reductions and Chapter 10 of the Plan for more information regarding climate change concerns.

Regarding safety concerns of hydrofluoric acid, since it is not a criteria pollutant it is not included in the AQMP. However, Proposed Rule 1410 - Hydrogen Fluoride Use at Refineries is currently scheduled for consideration in 2017.

Comment Letter from Clean Energy (Comment Letter 66)

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Todd R. Campbell
Vice President, Public Policy & Regulatory Affairs

Dr. William A. Burke
Chairman, South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

September 9, 2016

Re: Comments on the Draft Air Quality Management Plan

Dear Chairman Burke:

On behalf of Clean Energy, please accept the following comments concerning the proposed *Air Quality Management Plan (AQMP)*.

Clean Energy has been a highly active stakeholder in exploring and recommending public policies for how the South Coast Air Quality Management District (AQMD) can meet its federally mandated clean air goals. Failure to remedy the transportation sector will result in AQMD's inability to meet the reductions of nitrogen oxide (NOx) required by the 2023 and 2031 federal deadlines, respectively. It is vitally important that such remedies promote both public health and a strong economy to achieve critical air quality, energy, and social justice goals. We hope that our comments will help to further improve upon the final document.

The draft *AQMP* proposes to implement several air quality measures with an emphasis on mobile sources, "the principal contributor to our air quality challenges." We are pleased the *AQMP* in part integrates ARB's *State Implementation Plan*, which relies upon the findings by ARB in the *Mobile Source Strategy* discussion draft that calls for the statewide deployment of 900,000 low NOx trucks powered by 50% renewable fuel blends by 2031. Specifically, this document calls for low NOx trucks that can reduce NOx emissions by at least 90% over current medium- and heavy-duty truck emission standards or 0.02 grams. Renewable fuel blends could include but are not limited to biodiesel, renewable diesel and renewable natural gas. Clean Energy and the Natural Gas Vehicle industry stand ready, willing and able to help AQMD meet its attainment goals.

WHO ARE WE?

As North America's largest provider of natural gas transportation fuel with over nineteen years of leading industry experience, Clean Energy provides construction, operation and maintenance services for refueling stations nationwide. We have a deep understanding of the growing marketplace, and our portfolio includes over 589 stations in 43 states, including a significant presence of 165 stations in California.

Already used as a clean, low carbon source of energy around the world, natural gas is abundant and proven to be a cost-saving alternative fuel to diesel and gasoline. Natural gas for transportation fuel strengthens our economy with lower fuel costs, increases our energy security, and significantly benefits our environment by reducing carbon emissions and smog-forming NOx emissions by up to 23% and 90%, respectively, relative to diesel fuel. Carbon emissions are reduced even further – approximately 80% to 90% - when renewable natural gas (RNG) is used to power our engines compared to diesel.

We believe it is imperative that the final draft of the *AQMP* focus on the most cost-effective measures to reduce NOx, including in-state RNG production and near zero emission vehicles that can partially or

66-1

completely run on RNG, which can provide the most significant reductions in NOx and provide the most immediate benefits for disadvantaged communities.

Next Generation Heavy-Duty Engines Powered by RNG is a Game Changer for State and Non-Attainment Regions

In May 2016 a groundbreaking report was released entitled *Game Changer*¹ – sponsored by several stakeholders including the South Coast AQMD – which concluded there should be an immediate start to deploying zero-emission and near-zero-emission heavy-duty vehicle (HDV) technologies on a wide-scale basis in the United States. In sync with many recent documents being produced by the Air Resources Board, the report states that, “(e)xpeditious action is needed to reduce smog-forming emissions from HDVs to restore healthful air quality—as is legally required under the federal Clean Air Act—for approximately 166 million Americans who reside in areas with exceedingly poor air quality. At the same time, to combat global climate change, the United States must aggressively reduce greenhouse gas (GHG) emissions from HDVs, which are the fastest growing segment of U.S. transportation for energy use and emissions.”

The report further identified that near-zero engine strategies result in 3 to 8 times more NOx reductions and have 5 to 14 times more greenhouse gas emission reductions simply because near-zero trucks are four times more cost-effective compared to fuel cell or electric vehicle options at this time. In addition, these engines help meet Short-lived Climate Pollutant reduction goals by reducing black carbon and methane, especially if renewable natural gas fuel blends are used to power the engine.

Summary

Los Angeles Metro is committed to moving into ZEB's as aggressively as practical. However, Metro's Zero Emission program also needs to be fiscally prudent, and built around proven, operational technologies.

- Wide variety of Zero and Near-zero emission options available today, and more coming.
- **Technical Maturity?** Available ZEB technology options are not suitable to every transit application. All ZEB options reviewed to date have technical, economic and/or operational trade-offs that would restrict immediate broad scale adoption at Metro.
- **Scale?** ZE technologies that work for a 10 or 100 bus fleet may not be operationally suitable for a 2,000+ bus fleet like Metro's.
- **Any Game Changers?** Not that we've seen. At this time we do not see logical opportunities to "Leap Frog" directly into ZEB operation on a broad scale. The transition to ZEB's is expected to take several years. All ZE technologies are evolving rapidly, and Metro is continually re-assessing all ZEB and Near ZE technology options.
- **Low NOx, Near Zero CNG?** At least with Los Angeles Metro's fleet, there will be immediate air quality and economic benefits to pursuing a "Near ZE" approach using Low NOx engines and RCNG for the next 3-5+ years.

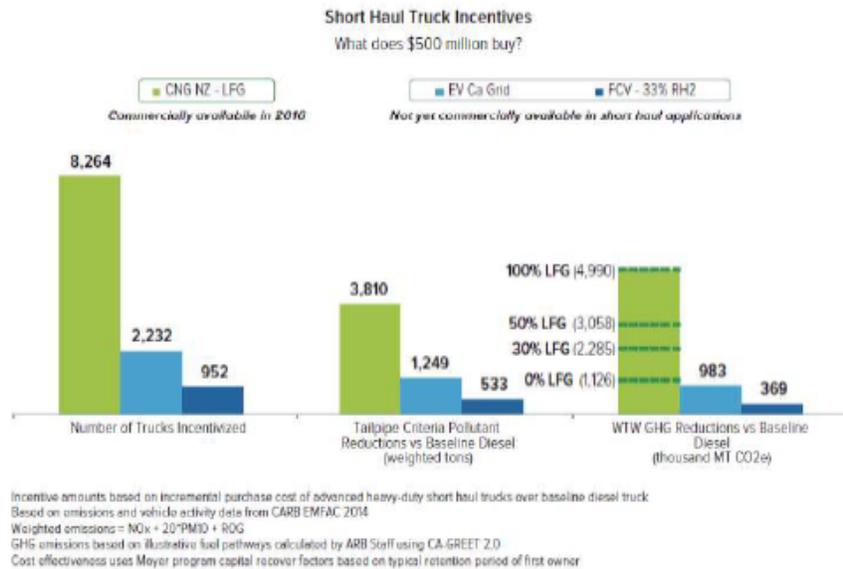
 Metro

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For example on cost-effectiveness, on the *APTA Clean Propulsion Committee Webinar* held on Thursday, June 30, LA Metro provided an assessment that they can get more cumulative greenhouse gas emission reductions over the next 40 years with low NOx engines using RNG at a cost that is \$3-5 billion lower than zero-emission based alternatives. This is a major declarative finding for the RNG pathway with empirical data from the second largest transit fleet in the country.

And please consider this analysis by GNA considering short haul truck incentives:

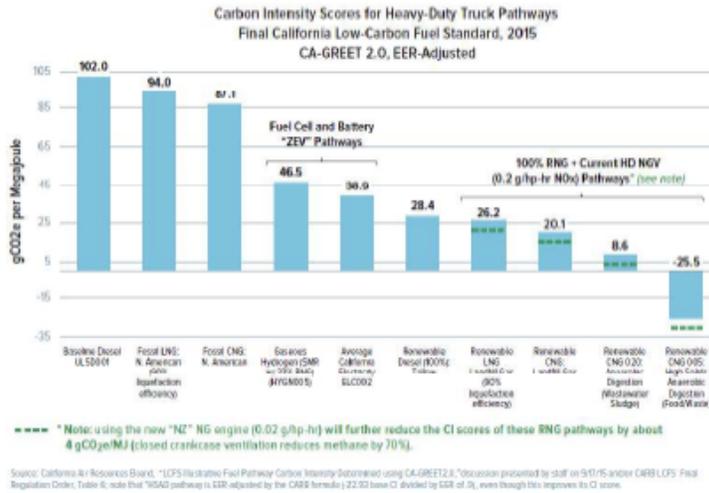
¹ <http://ngvgamechanger.com/>



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The AQMD will NOT reach NOx and other goals without dedicating significant resources to the heavy-duty class 7 and 8 transportation sector to decrease its dependence upon diesel fuel use and increase the use of much cleaner low carbon fuels. To this end, the recent ARB-certified Cummins Westport's 0.01 g/bhp-hr NOx heavy-duty engine will play a significant role as it is a game changer for the transportation sector and public health. The 9L engine is now available for deployment and the 12L is expected to be certified by late 2017.

These engines will provide immediate environmental and health benefits, especially to disadvantaged communities. Returning to the ARB *Mobile Source Strategies Discussion Draft*, it specifically states on page 59, "Based on ARB staff's technology assessment, the most viable approach to meeting the 2031 and 2030 goals is low-NOx trucks." In other words, the only technically feasible way to meet the 2031 federal 8-hour ozone standards and the state's low carbon fuel and petroleum reduction goals is to deploy 900,000 low NOx trucks powered by 50% renewable fuel blends by 2031.



These low-NOx engines set at the 0.02 g/bhp-hr standard, powered by conventional or renewable natural gas, or a blend of the two, will achieve greater environmental benefits than any electrified system for 1/5th to 1/10th the cost and far fewer operational and logistical challenges, as natural gas technology can be seamlessly integrated into large natural gas fleet operations such as drayage, goods movement, refuse, transit, and airport operations.

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Game Changer supports the argument why AQMD must pursue all advanced technology choices, not just a focus on zero emission vehicle tailpipe strategies that have yet to be fully commercialized and are only forecasted to replace 23,000 "last mile" delivery trucks over the next 15 years. The AQMP should take a close look at the success stories that were enjoyed by the San Pedro Bay ports through their implementation of a joint *Clean Air Action Plan* and *Clean Truck Plan*. If we are ever to move away from polluting trucks and toward near-zero and zero emission strategies, we need to be able to have the mechanisms in place that can cull out aging trucks and replace those trucks with cleaner options.

It is unclear if the great state of California has any plans to require near-zero emission or better levels for trucks until 2023. Thus, it is clear the only way to deploy the sheer volume of near-zero trucks required to meet federal clean air standards is to develop a number of strategies at the local and state levels that include meaningful truck incentives, the phase out of older model year trucks throughout the freight system, the acceleration of RNG production statewide, and other innovative strategies.

Specific Recommendations to Meet AQMP's NOx Targets

- The AQMP Must Include Specific Fleet Rules for Low NOx Adoption

The challenges to reduce NOx emissions in a very brief amount of time from the mobile source sector is daunting. Specifically, the South Coast Air Basin for example must reduce its NOx emissions from mobile sources by 70% by 2023 and 80% by 2031 to reach federal ozone attainment. Such a goal would require approximately 272,000 low-NOx trucks meeting a 0.02 gram optional low-NOx value or better to be deployed in 6.5 years. One challenge for the AQMD is that the *State Implementation Plan* does not even establish a California engine standard for medium- and heavy-duty trucks at a 0.02 gram NOx value until the very year

66-2

that both the South Coast and the San Joaquin Valley are expected to reduce mobile source emission by roughly 70%. We suggest AQMD work to remedy this.

Much like the Air Resources Board's desire to accelerate zero emission-based strategies in both transit, last mile delivery, and airport shuttle fleets as outlined in the proposed document, AQMD also needs to consider creative and innovative ways to promote near zero emission trucks and buses. Specifically, AQMD should consider additional measures that touch upon fleet operations that could deploy optional low-NOx trucks and buses well before 2023. Namely, the goods movement sector would be a prime candidate for such a measure as our state's sea and inland ports, airports, railyards, and warehouses could dramatically improve regional and state air quality with the adoption of commercially available low-NOx strategies.

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Further, unlike current commercial ZEV technology that is mired by cost, limited range, weight, durability, and infrastructure issues, low-NOx technologies powered by natural gas in the 6.7L and 8.9L are certified today, proven in the field, supported by existing infrastructure, and are far more cost-effective in price and operation. Additionally, an 11.9L low-NOx natural gas engine is expected to be certified as early as Q4 2017 making it possible for AQMD to consider a measure covering the goods movement sector as early as 2018-19 for implementation purposes. Providing this immediate relief to communities that are already heavily burdened by ozone, particulate, air toxics, and carbon pollution should be embraced as such measures would immediately help address air toxics goals and petroleum reduction targets while improving the opportunity to attain healthier federal ozone levels by 2023 and 2031. Consequently, such an inclusion of goods movement measures capable of deploying early low-NOx engine trucks will help make the case that both a state and federal low-NOx rulemaking is technically feasible by 2023 and 2024, respectively.

Concluding Remarks

California has aggressive emissions goals that CANNOT be realistically met without accelerating the adoption of near-zero strategies like natural gas fuel in the heavy duty vehicle sector. Most importantly, this technology is both proven and available today. Failure to provide AQMP measures that are more inclusive of near-zero emission strategies will almost certainly compromise the successful implementation of the following state goals:

- Mandated federal 8-hour ozone attainment goals for NOx reduction in 2023 and 2031;
- Improved conditions for disadvantaged communities;
- Meet the LCFS goal of 10% greenhouse gas emissions (GHG) by 2020 and 30% by 2030;
- 40% GHG reduction by 2030;
- 50% petroleum reduction by 2030;
- 80% GHG reduction by 2050;
- Significant reductions in short-lived climate pollutants.

66-3

We would like to thank AQMD staff for providing the opportunity to share our views and for considering our comments. We look forward to continuing our participation and partnership with you in this healthy discussion and process.

Sincerely,



Todd R. Campbell
Vice President, Public Policy & Regulatory Affairs
Clean Energy

Responses to Comment Letter from Clean Energy
(Comment Letter 66)

Response to Comment 66-1:

Staff appreciates the support in implementing the 2016 AQMP, in particular the mobile source strategy. Staff echoes the importance of promoting both public health and a strong economy to achieve air quality, energy and social justice goals. In response to the commenter's interest in cost-effective paths to achieve the standards, the Revised Draft Plan has been modified to prioritize maximizing emission reductions utilizing zero-emission technologies when cost-effective and feasible and near-zero emission technologies in all other applications.

Response to Comment 66-2:

Staff shares the concern regarding the timing of implementation of a low-NOx standard in the state of California but also recognizes the effort that will need to take place before adoption and implementation of such a new standard. However, the modeling does not include reductions from those standards in 2023 and still demonstrates attainment as a result of other actions proposed to be fully implemented by 2023.

Response to Comment 66-3:

As discussed in Response to Comment 66-1, the Plan is seeking to achieve reductions in the near-term with the cleanest, most cost-effective technologies, as well as promoting incentives to advance deployment of cleaner technologies.

Comment Letter from Earthjustice (Comment Letter 67)



September 9, 2016

Wayne Nastri
Executive Officer
South Coast Air Quality Management District
21865 Copley Dr.
Diamond Bar, CA 91765
wnastri@aqmd.gov

Re: Comments on Draft 2016 Air Quality Management Plan (“AQMP”)

Dear Mr. Nastri:

On behalf of the undersigned organizations, we submit this comment letter on the Draft 2016 Air Quality Management Plan (“AQMP” or “plan”). Overall, the plan has several systemic problems that must be fixed. First, there is an over-reliance on incentives and a lack of regulatory measures. Second, the South Coast Air Quality Management District (“South Coast AQMD” or “air district”) does not commit to use all of its authority to reduce all reasonably achievable emissions and advance clean energy and clean transportation. Finally, the South Coast AQMD has failed to include viable and legally required contingency measures. These three issues must be addressed in the revised draft AQMP.

67-1

Before moving to the substance of our letter, we must address process issues. Initially, we respectfully request that the South Coast AQMD provide ample time for stakeholders to review and comment on the revised draft AQMP. Because this is the most important air plan in the last two decades, we need to make sure the plan is done correctly. That cannot happen in a rushed manner to meet arbitrary deadlines when we have already missed the initial deadline. As of today, one critically important document still has not been released – the Attainment Demonstration. In addition, the district has not released its macroeconomic impact analysis,

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environmental justice analysis, or California Environmental Quality Act (“CEQA”) alternatives analysis. Accordingly, we request at least 60 days to comment on the revised draft with these documents included. In addition, we request that the staff provide ample time to incorporate comments and responses to comments into the plan and the accompanying documents prepared in response to CEQA requirements.

67-1
Cont

I. The Air Quality Public Health Crisis Demands Action.

Our organizations have come together under a simple premise: South Coast air basin (“South Coast”) residents should not get sick, have existing respiratory illnesses worsened, or die prematurely as a result of breathing. They have a fundamental human right to breathe clean air. Despite statements in the AQMP that pollution levels are getting better, recent monitoring results have shown that pollution reductions, particularly for ozone, are leveling off. In fact, the region continues to receive an “F” from the American Lung Association for ozone and fine particulate matter.¹ The public health imperatives that result from this failing grade are not abstract; our members and allies are suffering myriad harms from the high levels of pollution. To remedy these harms, we need a strong plan that sets us on an enforceable and mandatory path to clean air. The law requires this, and this is what the lungs of everybody in the region deserve, especially those of our children and grandchildren.

67-2

II. Incentive Programs Cannot Form the Primary Basis of the Entire Plan.

The AQMP relies too heavily on incentive programs. While our organizations are not opposed to incentive programs per se, the unprecedented level of voluntary incentive programs in this plan should create pause for everybody. The U.S. Environmental Protection Agency (“EPA”) has made clear that voluntary incentive-based programs are only allowed to cover a relatively small subset of emissions reductions necessary to achieve the National Ambient Air Quality Standards (“NAAQS”). In elaborating on this position, EPA has stated:

67-3

The limit is set at three percent (3%) of the total projected future year emissions reductions required to attain the appropriate NAAQS. However, the total amount of emissions reductions from voluntary measures shall also not exceed 3% of the statutory requirements of the CAA with respect to any SIP submittal to demonstrate progress toward, attainment of, or, maintenance of the NAAQS.²

Recent presentations from your agency and the California Air Resources Board (“CARB”) have sought to focus on what percentage voluntary incentive programs make up –

¹ American Lung Association, 2016 State of the Air Report, 59-60, available at <http://www.lung.org/local-content/california/documents/state-of-the-air/2016/sota-2016-full-report.pdf> (The only exception is Orange County, which received a “pass” for annual P.M 2.5; Orange County received an “F” for ozone and 24 hour PM2.5).

² Memorandum from Richard D. Wilson, Acting Assistant Administrator for Air and Radiation, to EPA Regional Administrators, re “Guidance on Incorporating Voluntary Mobile Source Emission Reduction Programs in State Implementation Plans (SIPs),” October 24, 1997.

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with barely any mention of regulations – in terms of planned emission reductions. In the presentation at the AQMP Advisory Group meeting held on August 16, 2016, South Coast AQMD staff noted that “[f]rom base year (2012), adopted regulations contribute to 68% NOx reductions by 2023 and 80% NOx reductions by 2031.” This misses the point. We need large amounts of reductions moving forward – even beyond the regulations on the books now. We should be discussing what percentage of the future reductions needed come from voluntary incentive programs as opposed to mandatory and enforceable regulations. Besides, even in this scenario, the percentage reliant upon incentives amounts to unprecedented levels that EPA has never approved.

Even if the South Coast AQMD decides to move forward with this incentive laden approach, the preface concedes “[s]ecuring the necessary funding will not be easy, but through coordinated advocacy and outreach, integrated planning, coalition building, key partnerships, and political will, it is within reach.”³ These “buzz words” mean nothing when it comes to creating an enforceable plan. Political will or coalition work does not convert a voluntary and unfunded program into a legally compliant enforceable plan. The plan does not include assurances that adequate funds are available to carry out the plan as required by Section 110(a)(2)(E) of the Clean Air Act.⁴

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Finally, while we are very happy that the AQMP has committed to move beyond the often abused “black box,” which has prevented clean air progress in the region, we are concerned that the current approach creates a whole new set of problems. This stems from the fact that the South Coast AQMD acknowledges that “specific technologies needed to achieve the ozone standards are well-defined.”⁵ But, instead of requiring these technologies or asking CARB to require these technologies, the plan proposes an unfunded voluntary incentive-based approach to incorporate these technologies into the region. The District has exchanged a “black box” for an “empty cash box,” which will not work and does not meet the mandates of the federal Clean Air Act and California’s Health and Safety Code. Securing sufficient funding to achieve attainment under the proposed scenario would take a miracle. State and federal law do not allow the South Coast AQMD to rely upon miracles to demonstrate future compliance in its clean air plans. Attainment demonstrations must be based on legally enforceable, quantifiable, verifiable, and reasonably achievable emission reductions, not wishful thinking and unrealistically optimistic theoretical projections about securing funds from unwilling sources. Flying pigs and \$14 billion for clean air investments exist only in fantasy. The AQMP must be based in reality.

III. The AQMP Must Include Additional Commitments to Regulations.

At the August 16, 2016 AQMP Advisory Group meeting, the South Coast AQMD staff mentioned that they had previously looked under every stone for control measures. We are

67-4

³ Memorandum from Richard D. Wilson, Acting Assistant Administrator for Air and Radiation, to EPA Regional Administrators, re “Guidance on Incorporating Voluntary Mobile Source Emission Reduction Programs in State Implementation Plans (SIPs),” October 24, 1997.

⁴ Draft AQMP, Table 1-3.

⁵ Draft AQMP, Preface and ES-4.

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pleased that they noted they would look again to see if there are control measures that could aid in achieving the NAAQS and the California Ambient Air Quality standards (“CAAQS”). However, also during that discussion, we became concerned that there was an improper lens in which staff will be reviewing control measures. We are fearful that in evaluating proposed control measures, South Coast AQMD staff will summarily dismiss proposed control measures out right claiming the pollution reductions are too few given the work to adopt a regulation.

First, we must express extreme frustration with the pattern of inaction in prior State Implementation Plans (“SIPs”) to advance strategies to close the “black box”. For decades, many of our groups have been pushing the South Coast AQMD to identify what it will take for the region to meet ozone NAAQS. Despite these consistent pleadings, this has never happened. Now, staff appears to claim that the lack of time before 2023 means regulatory control strategies are precluded because of timing related to passing regulations and providing sufficient time for the clean technology to be implemented.

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Second, when looking at regulatory options, the staff seems hyper-focused solely on the 2023 attainment deadline. While we acknowledge the importance of this deadline, we must be mindful that we cannot make the same mistakes we have made for decades in planning – i.e. not adopting regulations soon enough to tackle the “black box”. Thus, we need to think about what actions need to be put in place now for the 2031 deadline given we have 15 years.

Finally, we suggest that the South Coast AQMD view potential regulatory strategies under the notion of not allowing new development and replacement of equipment to make matters worse. Clean energy and clean transportation options exists now, and there is no reason we should be allowing continued use of polluting equipment moving forward, when the current plan’s strategy is just to raise taxpayer dollars and fees to pay to replace that equipment down the road.

IV. The District’s Control Strategy Must be Enhanced.

While there are many regulations that should be adopted, we suggest enhancements to the following regulations now.

A. CMB-02 – Emission Reductions from Commercial and Residential Space and Water Heating (NOx).

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CMB-02 is a very important commitment for the air district. However, the current measure as drafted makes little to no sense. Importantly, the South Coast AQMD should at a minimum make sure that future development does not incorporate technologies that will need to be replaced in five or ten years, and will require raising taxpayer dollars and fees to pay for these replacements.

Importantly, the AQMP concedes: “One readily available option is to use electric water and space heaters.”⁶ The Draft AQMP further concedes: “[t]he initial purchase price of these

⁶ Draft AQMP, at IV-A-61.

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units is often less than gas water heaters and furnaces.”⁷ Even if electric heaters are not desirable for consumers, the Draft AQMP discusses “air to air heat pump water heaters,” which are “reasonably priced” and are a cost-effective option for reducing NOx and heating water for residences and small commercial properties.” The South Coast AQMD should adopt regulations requiring cost effective equipment in the AQMP given that the cost-savings exist now.

Second, we are concerned about raising \$50,000,000 to pay to replace 50,000 swimming pool heaters in the South Coast air basin. Even though we vehemently disagree with using taxpayer dollars to replace pool heaters in single family homes, even if the District pursues this approach, the cost is very high – i.e. \$50,000 per ton of NOx reduced. And like water heaters, there is no reason we should be allowing new pools to be built without requiring available zero emission technologies.

Third, the measure should include requirements on space heating. Space heating represents 37% of residential gas use and 36% of commercial gas use in California, totaling approximately 2.79 billion therms of natural gas consumption per year.⁸ Most space heating is powered by direct combustion of natural gas, contributing to significant NOx emissions. There are several options for zero emissions (or low emissions) space heating technologies that do not rely on direct combustion of natural gas or propane. One of the best options is a ductless mini-split system heat pump space heater.

Ductless mini-split-system heat pumps are an excellent option for heating and cooling in new construction, home additions, multi-family (condo or apartment) housing, and to improve comfort in poorly heated or cooled rooms. Mini splits have no ducts, so they avoid the energy losses associated with the ductwork of central forced air systems. Duct losses can account for more than 30% of energy consumption for space conditioning, especially if the ducts are in an unconditioned space such as an attic.

B. MOB-01 – Emission Reductions at Commercial Marine Ports (NOx, SOx, CO).

We are outraged that the South Coast AQMD in the fine print on page 109 of Appendix IV-A is proposing to abandon the important Port Backstop Rule – IND-01. Abandoning this rule has taken place with no public process. Instead, the public has been forced to find out about this change by small font buried in an Appendix of the Draft AQMP. The egregious nature of this change is compounded by the concession that the ports “collectively are the single largest fixed source of air pollution in Southern California.”⁹ If the South Coast AQMD dares to abandon its prior commitment to make sure the ports live up to their voluntary promises, the approach outlined in MOB-01 will not protect our air.

⁷ *Id.*

⁸ California Residential Appliance Saturation Survey (2009). Commercial End Use Survey (2006)

⁹ Draft AQMP, at IV-A-110.

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We are aware of few other industries that are allowed to write the rules of how they will achieve emissions reductions. The South Coast AQMD needs to provide more details on how much pollution reductions the Ports of Los Angeles and Long Beach need to achieve. It is not appropriate to kick the can down the road in identifying how many reductions in precursor emissions must occur to facilitate meeting deadlines in 2019, 2022, 2023 and 2031.

It is important to be clear about the need for a port backstop rule and why the South Coast AQMD adopted IND-01 in the first place. After enormous pressure from community groups, environmental organizations, and air quality regulators, the Ports adopted a Clean Air Action Plan in 2006. In that plan, the Ports made commitments to meet certain air pollution reduction milestones. South Coast AQMD incorporated those commitments into the baseline emissions inventory in the last AQMP. Failure to deliver those emission reductions would make the emissions inventory inaccurate and bring the attainment demonstration into question. In response, the Ports argued vehemently against the inclusion of a backstop rule commitment in the last AQMP. Their objections brought into question the honesty and sincerity of their Clean Air Action Plan commitments. Port air pollution must be controlled and reduced in order to attain state and federal air quality standards. Caving into the Ports and abandoning IND-01 makes the achievement of those emission reductions uncertain, and brings into question the accuracy and thoroughness of the new baseline emissions inventory.

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Finally, ambiguities in the draft plan make it impossible for commenters to provide competent input on the strategy. Importantly, the measure states the following –

This AQMP measure is designed to provide an ability for the Ports' actions to be credited in the State Implementation Plan after the emission reductions have occurred. If the actions are to be credited in the SIP, assurance must be provided that, if emissions do not continue to meet projections, the Ports working with affected stakeholders will develop and implement actions to get back on track, to the extent that cost-effective and feasible strategies are available. A demonstration to U.S. EPA will need to be made that the actions meet U.S. EPA's guidance in order to be credited into the SIP.¹⁰

Commenters must see the actual commitments and the demonstration that will be made to U.S. EPA. Given this, we require that this information from the Ports be provided in the revised draft AQMP to provide commenters the ability to provide input. This could be done at an upcoming AQMP Advisory Group meeting because both ports have representation on the group. The need to really push the ports to clean up their pollution is exemplified by the August 19th letter they submitted on the AQMP. These port authorities clearly do not see the urgency in meeting clean air standards because they argue that the AQMP can ignore deadlines before 2031. Moreover, they do not want to be held accountable for reducing emissions. These port authorities need to understand that the Clean Air Act creates mandatory duties to bring clean air to the South Coast; we have long since past the time when we can allow the ports to solely rely on voluntary programs to clean up their highly polluting operations.

¹⁰ Draft AQMP, at IV-A-111.

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C. Fleet Rules

Ample legal authority exists to push forward clean vehicles ranging from light duty equipment to heavy duty equipment. Even though local jurisdictions like the South Coast AQMD are preempted by federal law from adopting emissions standards and limitations, they have authority to adopt fleet rules and indirect source regulations.

The District may “direct[] state and local governmental entities to purchase, procure, lease, or contract for use of vehicles meeting specified air pollution criteria.” *See Engine Mfrs. Ass’n v. South Coast Air Qual. Mgmt. Dist.*, 498 F.3d 1031, 1045-46 (9th Cir. 2007). However, this authority is not boundless because rules governing purchases of new vehicles by private actors (at least, beyond those under contract with a government entity) are likely pre-empted by the Clean Air Act. *See Engine Mfrs. Ass’n v. South Coast Air Qual. Mgmt. Dist.*, 541 U.S. 246, 258-9 (2004) (citation omitted).¹¹ But the authority exists, and the District should use it.

The District has, in the past, applied its fleet rules to state and local public entities, including the State of California, counties, cities, public districts, and private entities under contract to such entities (Advisory Notice to Fleets Subject to SCAQMD Fleet Vehicle Rules 1186.1, 1191, 1192, 1193, 1194, 1195 and 1196 (July 20, 2005- noting that rules will not be applied to private entities, or the federal government).

The government fleets in question are substantial; in 2000, the District estimated that fleets governed by the light- and medium-duty rule (Rule 1191) had a population of roughly 44,000 vehicles (Staff Report, Proposed Rule 1191, Att. 2). The Heavy Duty rule covers fleets that comprised nearly 7,000 vehicles in 2000 (Staff Report, Proposed Rule 1196, App. B).

One study found that government automobiles tend to travel an average of 12,000 miles per year, with heavier-duty trucks travelling only slightly less (11,000 miles per year).¹² These are smaller figures than within the private sector. The same study found the replacement cycle for government automobiles to range from 5 to 7 years.¹³ One would expect, therefore, the fleet rule to have relatively rapid effects.

These effects would also include support for the creation of a viable clean vehicle market and economic incentives for vehicle manufacturers to develop and sell more clean vehicles to a wider range of customers. The impact of a regional commitment to clean government fleets should not be underestimated. If the South Coast AQMD is to achieve clean air, it will have to have clean vehicles. The momentum to get the prerequisite clean vehicle development commitment from manufacturers could start with the adoption of aggressive fleet rules.

¹¹ Note, however, that EPA could authorize the District to regulate private fleets, by waiving the Act’s pre-emption provisions pursuant to 42 U.S.C. 7543(b). We recommend that the District petition EPA to do so.

¹² P.S. Hu and M.Q. Wang, *State Vehicle Fleets and Their Potential Acquisition of Alternative Fueled Vehicles under EPACT 507* (1996). <http://ntl.bts.gov/lib/000/700/722/507.pdf>.

¹³ *Ibid.*

67-7

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The Plan should commit to adopt new and update the existing fleet rules. These changes should be done to require zero emissions vehicles in fleets throughout the basin, particularly those well suited for zero emission technologies.

67-7
 Con't

D. Small Off-Road Engines (SORE).

While we understand that CARB has the general legal authority over SOREs, the District could make sure that new developments are conditioned on using zero emission models in their landscaping and lawn care. This type of use of indirect source authority will help reduce the need for incentives to reduce pollution from this large source of the emissions inventory.

67-8

E. Warehouses and Distribution Centers.

The AQMP must include a commitment to develop an indirect source rule for warehouses. The Inland Empire has seen a proliferation of these facilities in the last decade. In addition, the Southern California Association of Governments projects even more warehouse space will be built or retrofitted in the coming years. These facilities contribute to major impacts and are sited in places that routinely show high levels of ozone and fine particulate matter. Thus, it is imperative that there finally be a commitment to adopt an indirect source rule to control pollution from these facilities.

67-9

F. The NOx Regional Clean Air Incentives Market (“RECLAIM”) Commitment Does Not Resolve Fundamental Flaws with the Program.

The RECLAIM program is broken. The AQMP should commit to shifting to a command and control system that will make sure large emitters like refineries actually install pollution controls, rather than just buying credits. This is especially important since most of the refineries are in the Ports area which has the highest air toxics risk in the basin (over 1200 per million).¹⁴

67-10

V. The District Must Make Good On its Promise to Achieve Early NOx Reductions.

In February of 2015, several members of the public raised concerns about the deeply faulty particulate matter plan that was passed by the Governing Board. The South Coast AQMD promised early NOx reductions, and this has not happened. Instead, we continue to hear that the RECLAIM program fulfilled that promise, but it most certainly did not. By adopting the Western States Petroleum Association’s delayed shave proposal, any RECLAIM Trading Credits in the years between now and 2019 are simply paper reductions and will not improve air quality.

67-11

VI. The Plan Must Create an Appendix that Includes the District’s Responses to Public Comments.

South Coast AQMP staff should create an Appendix in the forthcoming Revised Draft AQMP that will include thorough responses to all the public comments submitted to the Draft Plan released on June 30, 2016. This will help ensure transparency and accountability in the

67-12

¹⁴ South Coast AQMD, Multiple Air Toxics Exposure Study IV Report (2014).

public process. During the AQMP Advisory Group Meeting on August 16, 2016, staff presented their responses to public comments submitted to date in their PowerPoint presentation. This is not sufficient. Their responses were not detailed enough, and often misinterpreted the public comments that were submitted.

67-12
 Con't

VII. The Plan Must Include Greater Commitment to Solar Technologies.

The California Health and Safety Code contains a clear mandate that air quality plans “incorporate solar energy technology into its air quality management plan in applications where it can be shown to be cost-effective.”¹⁵ It is not enough to passively take credit for other programs that the State administers. The South Coast AQMD must do more. We request the South Coast AQMD lay out plans to require solar energy technology in new construction and major remodels, and to see these incorporated into the forthcoming revised AQMP draft.

67-13

VIII. Compliance with state level CAAQS Requirements.

We are disappointed that Chapter 8 of the Draft AQMP discusses the new federal 8-hour ozone standard set at 70 parts per billion (“ppb”), but does not develop a strategy to achieve the additional 25 tons per day (“tpd”) reductions needed to meet that standard. We remind the South Coast AQMD that the current CAAQS for the 8-hour ozone standard is set at 70 ppb. The Lewis Presley Air Quality Management Act is abundantly clear that “a comprehensive basinwide air quality management plan must be developed and implemented to provide for the rapid abatement of existing emission levels to levels which will result in achievement and maintenance of state and federal ambient air quality standards and to ensure that new sources of emissions are planned and operated so as to be consistent with the basin’s air quality goals.”¹⁶ There is no basis for the conclusion that this plan can ignore the current state ambient air quality standard for the 8-hour ozone standard, which was established in 2008. Importantly, we reserve the right to provide additional comments on this issue at the moment because Chapter 6 of the Draft AQMP cross references more details being provided in “Appendix VI: Compliance with Other Clean Air Act Requirements,” which has yet to be released. The South Coast AQMD website states that this appendix was expected to be released in early August. It’s already the beginning of September, and the public has not seen anything yet. Due to this delay, we request that the South Coast AQMD provide the public with a 30-day comment period after the release of this appendix in order to provide comments based on specific information, and not just a placeholder on the website.

67-14

IX. Conclusion

We appreciate your consideration of these comments. We request that our comments and the staff response to our comments be included in the administrative record for any decision being made by the South Coast AQMD Governing Board about the AQMP and for any

¹⁵ Cal. Health & Safety Code, § 40404.5.
¹⁶ Cal. Health & Safety Code, § 40402(e).

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environmental impact review under CEQA. We hope that the agency will actually listen to our input as opposed to many decades of instances when our comments have been ignored. The health of ourselves and our children and grandchildren is at stake.

67-14
Con't

Sincerely,



Adriano Martinez
Angela Johnson Meszaros
Earthjustice

Evan Gillespie
Sierra Club

Michele Hasson
Center for Community Action & Environmental
Justice

Martha Dina Argüello
Physicians for Social Responsibility-Los Angeles

Fabiola Lao
Coalition for Clean Air

Bahram Fazeli
Communities for a Better Environment

David Pettit
Natural Resources Defense Council

Taylor Thomas
East Yard Communities for Environmental Justice

Responses to Comment Letter from Earthjustice
(Comment Letter 67)

Response to Comment 67-1:

The 2016 AQMP does propose a number of regulatory measures aimed at reducing NO_x and VOC emissions from a variety of stationary and mobile sources. These regulatory measures were established after a thorough analysis of all ozone-emitting sources and available methods and technologies to further reduce emissions. Incentive-based approaches are focused on accelerating high-emitting sources to transition to cleaner technologies sooner than would take place under regulations. Some sources are beyond the authority of the SCAQMD. Incentives are one way to gain emission reductions sooner than natural turnover of vehicles and equipment. Accelerating the deployment of cleaner technologies before future rulemaking is established allows the new technology to be commercially available, achieved in practice, feasible in more applications, cost effective, as well as publicly acceptable. The specific sources of funding have yet to be finalized, but staff is working on developing the Financial Incentive Funding Action Plan that maps out the possible opportunities to ensure the proposals have secured funding. Such funding is being sought on a federal, state and local level. To ensure the reductions are creditable in the SIP, the U.S. EPA does require these reductions to be quantifiable, surplus (beyond regulations), permanent and enforceable. With such integrity elements in place, the incentive actions can be effective and provide lasting improvements.

The release of the Draft AQMP in June 2016 was designed to allow the public to become familiar with the proposed strategy and provide comments to be included in a Revised Draft Plan. Release dates have been staggered for the Draft Program Environmental Impact Report (PEIR) and Socioeconomic Assessment in order for the supporting documents to analyze the latest version of the Plan. As such, the costs and benefits analysis was released August 31, 2016 and the PEIR was released mid-September in time for review of the Revised Draft Plan that was released early October. Similarly, Appendix V and VI did lag behind the release of the Draft Plan but were available by September and provided over 30 days to review and comment. All those comment periods overlapped to allow for a comprehensive, concurrent review by the public.

In addition, staff is providing a 60-day public review and comment period for the PEIR and while each of the draft Socioeconomic chapters have been given a 30-day public review and comment period, a complete updated Socioeconomic Assessment with appendices was released in November for another 30-day public review and comment period. Comments on the Revised Draft Plan were encouraged to be provided 30-days after its release so staff could incorporate changes into the Draft Final Plan scheduled to be released in early December. Finally, at their October meeting, the SCAQMD Governing Board accepted delaying consideration of the 2016 AQMP until February 2017.

Response to Comment 67-2:

Staff understands and shares the same concerns regarding public health due to poor air quality in our region.

Response to Comment 67-3:

Please see Response to Comment 67-1 regarding the regulatory efforts put forth in the Revised Draft Plan.

Staff appreciates the support for the incentive programs and understands the concern with the amount of needed funding. A Financial Incentive Funding Action Plan was prepared as a companion document to the 2016 AQMP (<http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/draftfinancialincentivefunddec2016.pdf?sfvrsn=6>). The plan will provide an analysis of potential funding opportunities and proposed actions to be taken to secure the funding identified in the AQMP. The Financial Incentive Funding Action Plan will also include activities to pursue funding, the schedule, and reporting commitments. As shown in that Plan, even a very small VMT fee could generate \$1 billion annually. Staff does not intend to rely on a single funding source. Pursuing the funding will require an analysis of authority, formation of a stakeholder working group, creation of a national collaborative comprised of National Association of Clean Air Agencies (NACAA) for state/local air agencies, private sector members (engine manufacturers, Manufacturers of Emission Controls Association (MECA), trade associations, labor unions, etc.) and non-government organizations (local, state, national). Collaboration with the state will include California Air Pollution Control Officers Association (CAPCOA) and state/local partnerships, and other stakeholders. U.S. EPA has indicated that incentive measures may be approvable under the “enforceable commitments” mechanisms which would allow a greater percent of reductions than the 3% referred to in the comments.

Response to Comment 67-4:

The Revised Draft Plan includes the addition of future rulemaking for two of the previously incentive-only measures (CMB-01 and CMB-02). Please see Response to Comment 67-1 regarding the role incentive measures can play in achieving fast approaching deadlines by 2022 and 2023 for the 1-hour and 1997 8-hour ozone standards, respectively. Achieving these standards solely through regulation would not be realistic.

Response to Comment 67-5:

CMB-02 includes future rulemaking and will impose feasible requirements for space heating and water heaters. Staff will consider the technologies mentioned and encourages manufacturers to submit additional information supporting the feasibility and cost effectiveness of proposed technologies.

Response to Comment 67-6:

With regard to the facility-based measures including MOB-01, during the public process, SCAQMD staff will seek input and comments on identifying actions that could be voluntary or regulatory nature. The SCAQMD staff will report to the SCAQMD Governing Board on progress in identifying actions. However, if actions are not identified or incentive funding is not sufficient to achieve additional emission reductions, the SCAQMD staff will recommend to the SCAQMD Governing Board the development of rules within the SCAQMD authority or other enforceable mechanisms. Staff is proposing that a recommendation be made within one year from the adoption of the Final 2016 AQMP. The new language can be found in the updated MOB-01 write-up located in Appendix IV-A of the Revised Draft Plan.

Response to Comment 67-7:

MOB-08 has been modified to reflect enhancing the existing fleet rules and the updated MOB-08 description can be found in Appendix IV-A of the Revised Draft Plan. Requiring zero-emission public fleets may require additional authority from the state legislature since current law sets a benchmark of “methanol or other equivalently clean burning alternative fuels.” H&S §40447-5

Response to Comment 67-8:

Staff appreciates the comment and is aware of the emission reduction opportunities in the small off-road engines (SORE) category. In order to increase the penetration of new low emission and zero-emission equipment in SORE category, MOB-11 is proposing to expand the District's existing lawn mower and leaf blower exchange program to cover larger commercial lawn and garden equipment that are subject to federal preemption or may not be required to turnover to newer equipment. This expansion will be accomplished by increasing the number of exchange events and available funding for these programs. In addition, other SORE equipment may also be considered for exchange programs for accelerating the turnover of existing engines. Finally, such cleaner SORE equipment could be a mechanism for complying with EGM-01 regarding new development.

Response to Comment 67-9:

Please see Response to Comment 67-6 regarding the facility-based measures, including warehouses.

Response to Comment 67-10:

CMB-05 proposes a re-assessment of the RECLAIM program, which has been modified to reflect a serious consideration of phasing out the program and shifting to a command and control system. The updated CMB-05 description can be found in Appendix IV-A of the Revised Draft Plan.

Response to Comment 67-11:

The 2016 AQMP is a comprehensive Plan with committed reductions to be achieved in both 2023 and 2031, thus attaining the ozone standards by the required deadlines. Staff continues to work on regulation and other program implementation to reduce NOx emissions both in the short-term and the long-term.

Response to Comment 67-12:

A separate document will be provided with all the comment letters received that will also include specific responses to each of the comments. The release of this document is expected to be in December after the release of the Draft Final Plan.

Response to Comment 67-13:

Solar technologies are discussed throughout the 2016 AQMP and are considered as an option in a number of proposed control measures including the energy climate change (ECC) measures. Solar technologies can be cost-effective for NOx reductions when combined with other technologies and will also be considered for other measures such as CMB-01 and CMB-02.

Response to Comment 67-14:

Staff is aware of the need to work toward achieving the state standards that are in some cases more stringent than the current federal standards, although the strengthening of the federal standards are beginning to align with the state standards. The challenge of meeting the federal standards has been an on-going struggle for this region for a variety of reasons such as technological feasibility and wide-range public acceptance of new technologies and products. The 2016 AQMP represents an "all of the above"

approach, and thus the maximum feasible continued progress towards meeting State standards is assured.

Please see Response to Comment 67-1 with regard to the timing of the release of supporting appendices and the ample time provided for public review and comment.

Comment Letter from Alteryg Systems (Comment Letter 68)

DRAFT 2016 AIR QUALITY MANAGEMENT PLAN



2016 AQMP Comment Form

Please enter your contact information, comments and/or upload comment files below. The information collected may be used to provide further information about public workshops and hearings, and other events related to the 2016 AQMP. Responses to comment will be compiled and included in the final Plan package.

*Fields Required to Submit a Comment

Form Information

Date Created 09/27/2016	Time Created 9:26 AM	AQMP Year 2016
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Commentor Contact Information

Commentor's Name* CORINNE VITA	Organization* ALTERGY SYSTEMS If not representing a specific organization, please enter "No Affiliation".	City	State	Zip Code
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Comments (Unlimited Size)

Can you include language in the control measure for customers who put in fuel cells instead of generators at NEW SITES – not removal of existing generators but using the control measure incentive to prevent them from putting in generators at new sites?

I spoke with a few customers, they may not take their generators out but they would use the incentive program to put fuel cells in at new sites where they would of put in generators.

The best control measure would include incentives for customers to take out generators and replace with fuel cells and for customers who choose to put in fuel cells at new sites instead of generators.

68-1

Upload Additional Comment and Supporting Files (30 Mb Maximum per file)

AQMP Comments Files

Note: Supported upload files include all versions of Microsoft Office, jpeg, tiff, PDF, mp3, mp4, and text files.

Commentor Signature*

For More Information Contact: Angela Kim (akim@aqmd.gov) (909) 396-2590

Responses to Comment Letter from Altergy Systems
(Comment Letter 68)

Response to Comment 68-1:

The 2016 AQMP control measure CMB-01 has already included language on development of fuel cells at new sites, as well as replacing the existing generators with fuel cells or other technologies where feasible.

Comment Letter from David W. Brown (Comment Letter 69)



Preliminary Draft
Socioeconomic Report for 2016 AQMP

Please enter your contact information, comments and/or upload comment files below. The information collected may be used to provide further information about public workshops and hearings, and other events related to the Socioeconomic Report for 2016 AQMP. Responses to comment will be compiled and included in the final Report package.

*Fields Required to Submit a Comment

Form Information

Date Created 08/31/2016	Time Created 12:16 PM	AQMP Year 2016
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Commentor Contact Information

Commentor's Name* DAVID W. BROWN	Organization* NO AFFILIATION If not representing a specific organization, please enter "No Affiliation".	City COOS BAY	State OR	Zip Code 97420
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Comments (Unlimited Size)

As someone who considers himself an environmentalist, I believe that the most exciting affordable technology to implement to drastically reduce NOx in numerous industrial applications is the Duplex Technology developed by ClearSigns Combustion. Those working for SCAQMD would do well to further investigate this technology (that is currently working at an Aesa Energy Once Through Steam Generator in California and at Kern Energy in Bakersfield in a refinery heater. It is also installed in at least several well-head flares in California (undisclosed company and location at this point but in CA per the company). Duplex can work in any flame based technology. Industrial boilers are the next frontier for the company along with industrial applications in industries like paper, chemical, cement and steel plants. Full disclosure: I am a shareholder in the company, but have no affiliation with CLIR regarding my employment.

69-1

Upload Additional Comment and Supporting Files (30 Mb Maximum per file)

Socioeconomic Report Comments Files

Note: Supported upload files include all versions of Microsoft Office, jpeg, tiff, PDF, mp3, mp4, and text files.

Commentor Signature*

For More Information Contact: Angela Kim (akim@aqmd.gov) (909) 396-2590

Responses to Comment Letter from David W. Brown
(Comment Letter 69)

Response to Comment 69-1:

Thank you for providing the Duplex Technology information to reduce NOx emissions in industrial applications. Staff will review this technology in detail during the rulemaking process.