



South Coast Air Quality Management District

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

LOCAL GOVERNMENT & SMALL BUSINESS ASSISTANCE ADVISORY GROUP MEETING

Advisory Group Members

Councilmember Carlos Rodriguez, LGSBA Chair (Board Member)
Mayor Patricia Lock Dawson (Board Member)
Supervisor Curt Hagman (Board Member)
Councilmember Jose Luis Solache (Board Member)
Felipe Aguirre
Rachelle Arizmendi
Paul Avila, P.B.A. & Associates
Geoffrey Blake, Metal Finishers of Southern California
Todd Campbell, Clean Energy
LaVaughn Daniel, DancoEN
John DeWitt, JE DeWitt, Inc.
Bill LaMarr, California Small Business Alliance
Rita Loof, RadTech International
Eddie Marquez, Roofing Contractors Association
David Rothbart, Los Angeles County Sanitation Districts

FRIDAY, JUNE 9, 2023 ♦ 11:30 a.m.

A meeting of the South Coast Air Quality Management District Local Government and Small Business Assistance Advisory Group will be held at 11:30 a.m. on Friday, June 9, 2023, through a hybrid format of in-person attendance in Conference Room GB at the South Coast AQMD Headquarters, 21865 Copley Drive, Diamond Bar, California, and remote attendance via videoconferencing and by telephone. Please follow the instructions below to join the meeting remotely.

Please refer to South Coast AQMD's website for information regarding the format of the meeting, updates if the meeting is changed to a full remote via webcast format, and details on how to participate:

<http://www.aqmd.gov/home/news-events/meeting-agendas-minutes>

OTHER LOCATION(S)

2917 Via San Jacinto
San Clemente, CA 92672

Yorba Linda Public Library

Study Room 2
4852 Lakeview Avenue
Yorba Linda, CA 92886

Lynwood City Hall

Annex Conference Room
11330 Bullis Road
Lynwood, CA 90262

Riverside City Hall

7th Floor Conference Room
3900 Main St.
Riverside, CA 92522

ELECTRONIC PARTICIPATION
(Instructions provided at bottom of the agenda)

Join Zoom Webinar Meeting – from PC or Laptop

<https://scaqmd.zoom.us/j/92459924491>

Zoom Webinar ID: 924 5992 4491 (applies to all)

Teleconference Dial In

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One tap mobile

+16699006833, 92459924491#

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

Phone controls for participants: The following commands can be used on your phone's dial pad while in Zoom Webinar meeting:

- *6 - Toggle mute/unmute
- *9 - Raise hand

AGENDA

Members of the public may address this body concerning any agenda item before or during consideration of that item (Gov't Code Section 54954.3(a)). If you wish to speak, raise your hand on Zoom or press Star 9 if participating by telephone. All agendas for regular meetings are posted at South Coast AQMD Headquarters, 21865 Copley Drive, Diamond Bar, California, at least 72 hours in advance of the regular meeting. Speakers may be limited to three (3) minutes total for all items on the agenda.

CALL TO ORDER

1. Call to Order/Opening Remarks *Councilmember Carlos Rodriguez*
(**No Motion Required**) *Chair*

ACTION ITEM:

2. Approval of April 14, 2023 Meeting Minutes *Councilmember Carlos Rodriguez*
(**Motion Required**)
[Attachment 1]

DISCUSSION ITEMS (Items 3 through 6):

3. Review of Follow-Up and Action Items *Derrick J. Alatorre*
Staff will review follow-up/action items identified in the Deputy Executive Officer
previous meeting. Legislative, Public Affairs & Media
(**No Motion Required**)
4. Proposed Updates to Best Available Control Technology Guidelines (BACT) *Bahareh Farahani*
Staff will provide information on the ongoing proposed Program Supervisor
updates to the BACT Guidelines. Periodically, after Engineering & Permitting
consultation with stakeholders through the BACT Scientific Review Committee, staff proposes amendments to the BACT Guidelines to make them consistent with recent changes to South Coast AQMD rules and regulations as well as state requirements.
(**No Motion Required**)
[Attachment 2]
5. Update on Draft Letter from LGSBA Advisory Group on CARB's Community Air Protection Blueprint *LGSBA Advisory Group Members*
LGSBA Advisory Group members will review draft letter from LGSBA on CARB's Community Air Protection Blueprint to recommend trade associations be allowed to sit on Community Steering Committees.
(**Motion Required to Present Letter**)
[Attachment 3]

6. Update on Technology Advancement Projects
Staff will provide an overview and highlights on South Coast AQMD technology advancement projects.
(No Motion Required)
[Attachment 4]

Aaron Katzenstein
Deputy Executive Officer
Technology Advancement Office

OTHER MATTERS:

7. Other Business
Any member of this body, or its staff, on his or her own initiative or in response to questions posed by the public, may ask a question for clarification, may make a brief announcement or report on his or her own activities, provide a reference to staff regarding factual information, request staff to report back at a subsequent meeting concerning any matter, or may take action to direct staff to place a matter of business on a future agenda. (Gov't Code Section 54954.2)
8. Public Comment Period
At the end of the regular meeting agenda, an opportunity is provided for the public to speak on any subject within the Local Government and Small Business Assistance Advisory Group's authority that is not on the agenda. Speakers may be limited to three (3) minutes each.
9. **Next Meeting Date** – Friday, August 11, 2023, at 11:30 a.m.

ADJOURNMENT

Document Availability

All documents (i) constituting non-exempt public records, (ii) relating to an item on an agenda for a regular meeting, and (iii) having been distributed to at least a majority of the Advisory Group after the agenda is posted, are available by contacting Van Doan at (909) 396-3117 or send the request to kdoan@aqmd.gov.

Americans with Disabilities Act and Language Accessibility

Disability and language-related accommodations can be requested to allow participation in the Local Government and Small Business Assistance Advisory Group meeting. The agenda will be made available, upon request, in appropriate alternative formats to assist persons with a disability (Gov't Code Section 54954.2(a)). In addition, other documents may be requested in alternative formats and languages. Any disability or language-related accommodation must be requested as soon as practicable. Requests will be accommodated unless providing the accommodation would result in a fundamental alteration or undue burden to the South Coast AQMD. Please contact Van Doan at (909) 396-3117 from 7:00 a.m. to 5:30 p.m., Tuesday through Friday, or send the request to kdoan@aqmd.gov.

INSTRUCTIONS FOR ELECTRONIC PARTICIPATION

Instructions for Participating in a Virtual Meeting as an Attendee

As an attendee, you will have the opportunity to virtually raise your hand and provide public comment.

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

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

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

A countdown timer will be displayed on the screen for each public comment. If interpretation is needed, more time will be allotted.

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

Directions for Video ZOOM on a DESKTOP/LAPTOP:

- If you would like to make a public comment, please click on the “**Participants**” button on the bottom of the screen.
- A list of participants will appear on the right side of the screen. At the bottom of the list, please click on the grey “**Raise Hand**” button.
- This will signal to the host that you would like to provide a public comment and you will be added to the list.

Directions for Video Zoom on a SMARTPHONE:

- If you would like to make a public comment, please click on the “**Participants**” button on the bottom of your screen.
- A new screen will pop up with the list of participants. Look for the “**Raise Hand**” button on the screen and click the button.
- This will signal to the host that you would like to provide a public comment and you will be added to the list.

Directions for TELEPHONE line only:

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



South Coast Air Quality Management District

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LOCAL GOVERNMENT & SMALL BUSINESS ASSISTANCE ADVISORY GROUP FRIDAY, APRIL 14, 2023 MEETING MINUTES

MEMBERS PRESENT:

South Coast AQMD Board Members:
Councilmember Carlos Rodriguez, LGSBA Chair
Mayor Patricia Lock Dawson
Supervisor Curt Hagman
Councilmember Jose Luis Solache

Public Members

Paul Avila, P.B.A. & Associates
Geoffrey Blake, Metal Finishers of Southern California
Todd Campbell, Clean Energy
Bill LaMarr, California Small Business Alliance
Rita Loof, RadTech International
Eddie Marquez, Roofing Contractors Association
David Rothbart, Los Angeles County Sanitation Districts

MEMBERS ABSENT:

Felipe Aguirre
John DeWitt, JE DeWitt, Inc.
LaVaughn Daniel, DancoEN

OTHERS PRESENT:

Mark Abramowitz
Harvey Eder
Teresa Garcia
Linda Krupa
Elaine Morgan
Mark Taylor, Board Member Consultant (*Rodriguez*)

SOUTH COAST AQMD STAFF:

Susan Nakamura, Chief Operating Officer
Derrick Alatorre, Deputy Executive Officer
Anissa Heard-Johnson, Deputy Executive Officer
Aaron Katzenstein, Deputy Executive Officer
Sarah Rees, Deputy Executive Officer
Lisa Tanaka O'Malley, Assistant Deputy Executive Officer

Daphne Hsu, Principal Deputy District Counsel
Mark Henninger, Information Technology Manager
Walter Shen, Planning and Rules Manager
Tom Lee, Program Supervisor
Alyssa Yan, Program Supervisor
Elaine-Joy Hills, Senior Staff Specialist
Van Doan, Air Quality Specialist
Paul Wright, Senior Information Technology Specialist
De Groeneveld, Senior Information Technology Specialist
Kristina Voorhees, Assistant Air Quality Specialist
Cindy Bustillos, Executive Secretary
Brisa Lopez, Administrative Assistant

Agenda Item #1 – Roll Call/Call to Order/Opening Remarks

Chair Carlos Rodriguez called the meeting to order at 11:30 a.m., roll call was taken and a quorum was present.

Daphne Hsu, Principal Deputy District Counsel, Legal, stated that LaVaughn Daniel and John DeWitt would not be able to participate in the meeting as an Advisory Group member from a remote location that was not noticed pursuant to Brown Act. Ms. Daniel and Mr. DeWitt could observe the meeting as a member of the public.

For additional details of the Local Government and Small Business Assistance (LGSBA) Advisory Group Meeting, please refer to the [Webcast](#), beginning at 0:37.

Agenda Item #2 – Approval of March 10, 2023 Meeting Minutes

Chair Rodriguez called for approval of the March 10, 2023 meeting minutes.

There were no public comments.

Motion to approve minutes made by Supervisor Curt Hagman; seconded by Geoffrey Blake; approved.

Ayes: Avila, Blake, Hagman, LaMarr, Rodriguez, Rothbart

Noes: None

Abstained: Campbell, Dawson, Marquez, Solache

Absent: Aguirre, Daniel, DeWitt, Loof

For additional details, please refer to the [Webcast](#), beginning at 2:45.

Agenda Item #3 – Review of Follow-Up and Action Items

Derrick Alatorre reviewed action items from the March 10, 2023, meeting.

There were no public comments.

For additional details, please refer to the [Webcast](#), beginning at 6:25.

Agenda Item #4 – Update on South Coast AQMD Mobile Source Incentive Programs

Alyssa Yan, Program Supervisor, Technology Advancement Office, provided an overview on South Coast Air Quality Management District (South Coast AQMD) mobile source incentive programs.

Mr. Avila asked if the Volkswagen Mitigation program only applied to cars. Ms. Yan confirmed that was correct. Mr. Avila asked if the funds could be used to repair the engines and inoperable refrigeration units. Tom Lee, Program Supervisor, Technology Advancement Office, replied that inoperable equipment are ineligible for the program.

David Rothbart asked how fund allocation is determined with a limited budget and if cost-effectiveness and alternative fuel technologies are considered. Ms. Yan replied that cost-effectiveness is considered for project rankings. Aaron Katzenstein, Deputy Executive Officer, Technology Advancement Office, stated that the guidelines for Carl Moyer program specifies the cost-effectiveness in dollars-per-ton.

Todd Campbell, Ms. Yan, and Dr. Katzenstein discussed Advanced Clean Fleet (ACF) regulation, funding allocation, and project prioritization.

Bill LaMarr asked if incentive programs are different from emission reduction credits (ERCs). Susan Nakamura, Chief Operating Officer, indicated that incentive fundings are used for quantifiable emission reductions under current regulations and not for compliance with future emission limits.

Geoffrey Blake asked about total emission reduction difference between zero-emission and near-zero-emission technologies with the limited budget. Walter Shen, Planning and Rules Manager, Technology Advancement Office, replied that the cost-effectiveness and emission benefits for transitioning from diesel to zero-emission busses is greater than use of other fuel types, such as compressed natural gas (CNG) or liquified natural gas (LNG). Mr. Blake asked how many busses could be converted to CNG using \$22M. Dr. Katzenstein stated that CNG busses costs approximately \$160K and zero-emission busses costs approximately \$370K and the school districts are allowed to select the type of busses to purchase.

Mr. Avila asked if it is possible to combine funding from different incentive programs to fund the same project. Dr. Katzenstein replied that stacking of different funds are possible, depending on the program requirements.

Councilmember Jose Luis Solache asked for a list of schools in Los Angeles County that have received funding.

***Action Item #1:** Provide the Advisory Group with a list of schools in LA County that have received funding for busses.*

Councilmember Solache mentioned a discussion on ACF regulation and asked if there are any incentive funding for small businesses. Dr. Katzenstein replied that the Voucher Incentive Program (VIP) is designed for independent owner or operators with 10 or less vehicles.

Mr. Campbell asked how much funding is allocated for VIP. Dr. Katzenstein replied \$8M is currently allocated to VIP and increased funds could be requested as necessary.

Harvey Eder commented on particulate matter, ozone, and contingency measures.

For additional details on the presentation and discussions, please refer to the [Webcast](#), beginning at 8:20.

Agenda Item #5 – Update on Draft Letter from LGSBA Advisory Group to Administrative Committed on CARB’s Community Air Protection Blueprint

Mr. Alatorre stated since there are four Governing Board (GB) members on the LGSBA Advisory Group and the Administrative Committee, the recommendation stated in the draft letter would be presented to the Governing Board, instead of the Administrative Committee.

Rita Loof asked for clarification on the process to submit the letter of recommendation from the Advisory Group. Chair Rodriguez confirmed that Governing Board approval is needed.

Mr. LaMarr referenced paragraph #2 of the draft letter and suggested to add additional details. Chair Rodriguez and Mr. Alatorre suggested that Mr. LaMarr and Ms. Loof edit the draft letter and provide an update at the next meeting.

Councilmember Solache expressed support for the letter.

There were no public comments.

For additional details, please refer to the [Webcast](#), beginning at 54:45.

Agenda Item #6 – Other Business

Ms. Loof stated that the proposed South Coast AQMD budget will include an increase on all fees.

For additional details, please refer to the [Webcast](#), beginning at 1:05:20.

Agenda Item #7 – Public Comment

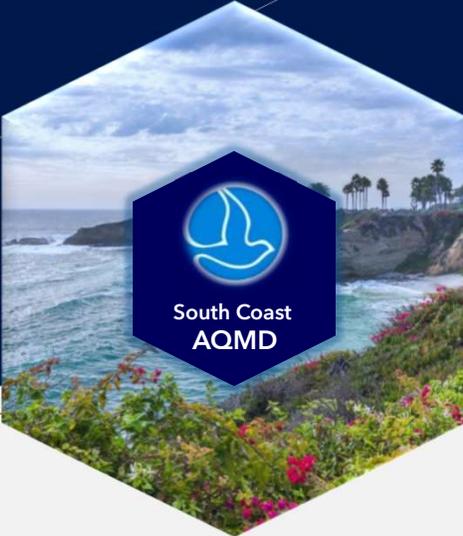
There were no public comments.

Agenda Item #8 – Next Meeting Date

The next regular LGSBA Advisory Group meeting is scheduled for Friday, June 9, 2023, at 11:30 a.m.

Adjournment

The meeting adjourned at 12:38 p.m.



Proposed Updates to Best Available Control Technology Guidelines

Local Government & Small Business Assistance Meeting
June 9, 2023

1

Background

- Best Available Control Technology (BACT) guidelines are periodically modified to reflect changes in technology that ensures new, modified, and relocated equipment are using the cleanest technologies
- BACT Guidelines are published for commonly permitted equipment:
 - Based on category or class of source
 - Source is defined as an individual permit unit
 - Engine, boiler, spray booth, etc.
 - Technical feasibility considered for the class and category of source

BACT is the most stringent emission limitation or control technique for a class and category of equipment that is:

- Achieved In Practice, or
- Contained In a State Implementation Plan (SIP), or
- Technologically Feasible and Cost-effective

LGSBA Meeting, June 2023

2

Background (Cont'd)

- BACT is a major element of Regulation XIII - New Source Review (NSR)
- During permitting, an NSR analysis is performed for all
 - New sources
 - Relocated sources
 - Modifications to an existing source
- BACT is required if NSR analysis shows that:

There is an emissions increase ≥ 1.0 lb/day

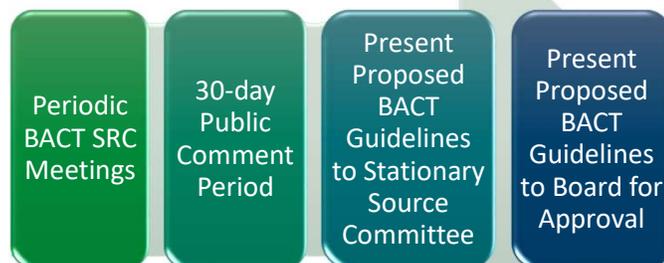
-  nonattainment air contaminant (NOx, VOC, SOx, PM10)
-  ozone depleting compound
-  ammonia

LGSBA Meeting, June 2023

3

Process to Update BACT Guidelines

- Modifications to BACT Guidelines go through a public process which includes:
 - Review of the Most Stringent Emission Limitation or Control Technique
 - Review of the Revised Cost-effectiveness Values
- Staff works with a Scientific Review Committee (SRC) which includes industry, other agencies, trade organizations, academia, and consultants



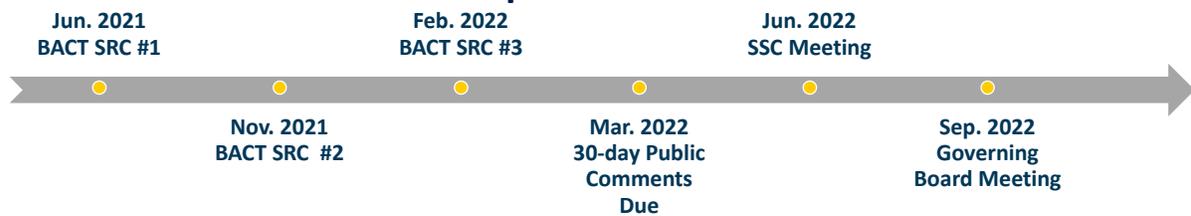
LGSBA Meeting, June 2023

4

Latest Revision to BACT Guidelines – Adopted September 2022

- **Administrative changes to the Guidelines**
- **Part B, Major Polluting Facilities (LAER/BACT) – Section I and Section II**
 - Three new & three updated listings
- **Part C, Policy and Procedures: Non-major Polluting Facilities**
 - Update maximum cost effectiveness criteria
- **Part D, Non-Major Polluting Facilities (BACT)**
 - One new & four updated listings and clarifications/updates to existing listings

Previous BACT Guidelines Update Timeline



LGSBA Meeting, June 2023

5

Summary of Proposed Updates to BACT Determinations

Equipment Category	Current LAER/BACT Limit	Proposed LAER/BACT Limit
Part B, Major Polluting Facilities (Section I)		
Tank Truck Loading Racks	Not established	VOC: 0.02 lb/1000 gals Overall control eff.: 99%
Heater	Not established	NOx: 7 ppmv @ 3% O ₂ dry
Linear Generator, Non-Emergency Electrical Generator, Natural Gas Fired	Not established	NOx: 2.5 ppmv @ 15% O ₂ dry CO: 12 ppmv @ 15% O ₂ dry VOC: 25 ppmv @ 15% O ₂ dry
Sulfur Recovery (Claus) Unit	Not established	NOx: 0.05 (lb/MMBTU natural gas) CO: 0.03 (lb/MMBTU natural gas) SOx: 12 ppmv @ 0% O ₂ dry
Fugitive Emission Sources at Petroleum Refineries	Leak Standard: 500 ppmv	Leak Standard: 200 ppmv

LGSBA Meeting, June 2023

6

Summary of Proposed Updates to BACT Determinations (Cont'd)

Equipment Category	Current LAER/BACT Limit	Proposed LAER/BACT Limit
Part B, Major Polluting Facilities (Section II)		
Boiler, Natural Gas or Propane Fired > 20 MMBTU/HR	Not established	NOx: 2.5 ppmv @ 3% O ₂ dry CO: 50 ppmv @ 3% O ₂ dry
Gas Turbine - Simple Cycle, Natural Gas	CO: 4 ppmv @ 15% O ₂ dry	CO: 2 ppmv @ 15% O ₂ dry
Part D, Non-Major Polluting Facilities		
Cannabis Extraction/Processing (Butane/Propane Mixture)	Not established	VOC Recovery Efficiency: 95%
Crumb Rubber/Asphalt Oil Blending System	Not established	VOC Control Efficiency: 90%

LGSBA Meeting, June 2023

7

Part B – LAER/BACT Determination for Major Polluting Facilities Section I – South Coast AQMD LAER/BACT Determinations Proposed New Listing based on Achieved In Practice Cases

➤ Tank Truck Loading Racks

- Vapor recovery system controls vapors generated from storage tank and loading rack operations (Permit to Operate issued in Sep. 2015)
- Max Heat Input Rate: 78 MMBTU/HR
- Emission Limit:

Emissions *	Proposed LAER Limit	Source Test Result
VOC (lb/1000 gals)	0.02	0.01

* Overall control efficiency is 99% for the vapor recovery system

➤ Heater

- Ultra Low NOx Process Burners (In operation since Mar. 2021)
- Heater rated at 12.5 MMBTU/HR is located at a terminal
- Emission Limit:

Emissions*	Proposed LAER Limit	Source Test Results
NOx (ppmv)	7	6.25
CO (ppmv)	100	<2.00

* @ 3% O₂ on a dry basis



LGSBA Meeting, June 2023

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**Part B – LAER/BACT Determination for Major Polluting Facilities
Section I – South Coast AQMD LAER/BACT Determinations
Proposed New Listing based on Achieved In Practice Cases**

➤ **Linear Generator, Non-Emergency Electrical Generator, Natural Gas Fired**

- 240 kWe linear generators, each package contains two linear generator cores (Permit to Operate issued in Apr. 2022)
- Emission Limit:

Emissions*	Proposed LAER Limits	Source Test Results**
NOx (ppmv)	2.5	1.91
CO (ppmv)	12	2.17
VOC (ppmv)	25	4.03

* @ 15% O₂ on a dry basis
** Core #2 source test results



LGSBA Meeting, June 2023

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**Part B – LAER/BACT Determination for Major Polluting Facilities
Section II – Other LAER/BACT Determinations
Proposed New Listing based on Achieved In Practice Cases**

➤ **Boiler, Natural Gas or Propane Fired > 20 MMBTU/HR (SVJAPCD)**

- Natural gas boiler with Low-NOx burner and Selective Catalytic Reduction (SCR) System, rated at 29.47 MMBTU/HR (Permit issued in Sep. 2018)
- Emission Limit:

Emissions *	Proposed LAER Limits	Source Test Results
NOx (ppmv)	2.5	1.4
CO (ppmv)	50	<0.1

* @ 3% O₂ on a dry basis



LGSBA Meeting, June 2023

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Part D – BACT Determination for Non-Major Polluting Facilities
South Coast AQMD BACT Determinations
Proposed New Listing

➤ **Cannabis Extraction/Processing (Butane/Propane Mixture)**

- Achieved In Practice Case (In operation since Mar. 2018)
 - Solvent extraction system, hot column purge, and vacuum ovens
- Emission Limit:

Emissions	Proposed BACT Limit	Source Test Result
VOC (Recovery Eff.)	95%	96.5%

- Cost-effectiveness Evaluation - In Progress



LGSBA Meeting, June 2023

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Part D – BACT Determination for Non-Major Polluting Facilities
South Coast AQMD BACT Determinations
Proposed New Listing

➤ **Crumb Rubber/Asphalt Oil Blending System**

- Achieved In Practice Case (In operation since 2018)
 - The mixing tanks are vented to air pollution control, consisting of Electrostatic Precipitator (ESP) and carbon adsorber (two canisters in series)
- Emission Limit:

Emissions	Proposed BACT Limit	Source Test Result
VOC (Control Eff.)	90%	97.6%

- Cost-effectiveness Evaluation - In Progress



LGSBA Meeting, June 2023

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Other BACT Updates Overview, Policy and Procedures

Overview

Major Polluting Facility Emission Thresholds

Table 1
Actual or Potential Emission Threshold Levels (Tons per Year)
for Major Polluting Facilities

Pollutant	South Coast Air Basin	Riverside County Portion of Salton Sea Air Basin	Riverside County Portion of Mojave Desert Air Basin
VOC	10	2510	100
NOx	10	2510	100



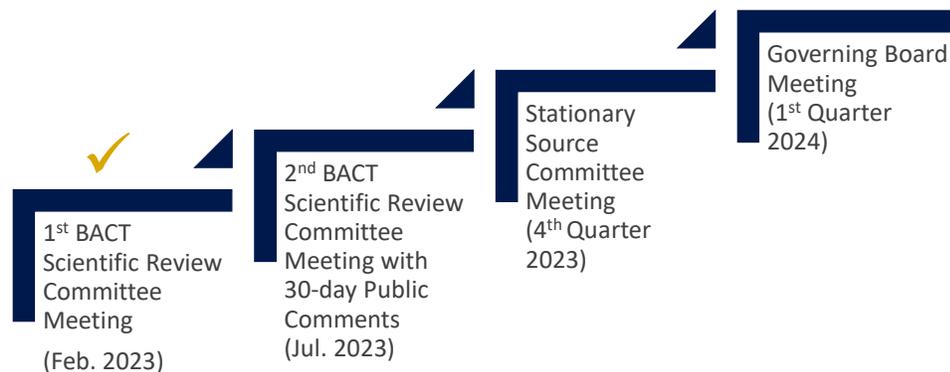
Part C - Policy and Procedures for Non-Major Polluting Facilities

- Routine update to Maximum Cost Effectiveness values based on Marshall & Swift Quarterly Cost Indexes

LGSBA Meeting, June 2023

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Next Steps



LGSBA Meeting, June 2023

14

Best Available Control Technology



Bhaskar Chandan, PE, QEP
Senior AQ Eng. Manager

Bahareh Farahani
Program Supervisor

Bettina Burleigh Sanchez
Senior AQ Engineer



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BBurleigh@aqmd.gov

[Date]

Local Government and Small Business Assistance Advisory Committee
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Administrative Committee
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Dear Administrative Committee Members,

We are writing on behalf of the Local Government and Small Business Assistance Advisory Group to ask for your support, approval, and subsequent letter to the California Air Resources Board (CARB) requesting that industry trade groups and associations be seated on AB 617 Community Steering Committees (CSC's).

When the CARB Board initially voted to approve the Community Air Protection Blueprint, they did so without explicitly prohibiting industry trade groups and associations from participating on these committees but rather left it up to the air districts to decide.

Typically, trade groups and associations are non-profit, non-partisan, 501(c) organizations that represent hundreds or thousands of businesses (mostly small businesses) spread throughout the jurisdiction of most air districts, and not just in disproportionately impacted communities. Moreover, any recommendations, decisions, plans, and rules emanating from the deliberations by these CSC's are certain to be of significance to all the members of these trade groups and associations because they will have the potential to impact all of them regardless of the neighborhoods in which they reside.

While we understand that CARB and some air districts harbor certain concerns about including industry trade groups and associations as members of these CSC's, we believe that these concerns are ill-founded and only serve to impede everyone's goal of successfully implementing a fair and equitable Clean Air Protection Program for all stakeholders.

Therefore, we are asking for your support of the concept to allow industry trade groups and associations to be enrolled and seated as members of these CSC's and request that you ask the same of the CARB Board.

Thank you for your continued commitment to improving air quality in our region.

Sincerely,

Local Government and Small Business Assistance Advisory Group
South Coast Air Quality Management District

Update on Technology Advancement Projects

Local Government & Small Business Assistance

AARON KATZENSTEIN
DEPUTY EXECUTIVE OFFICER

JUNE 9, 2023

1

Technology Advancement Office

Technology Demonstration



Manages over \$168M to fund technology demonstration projects to advance new cleaner technologies

Incentives



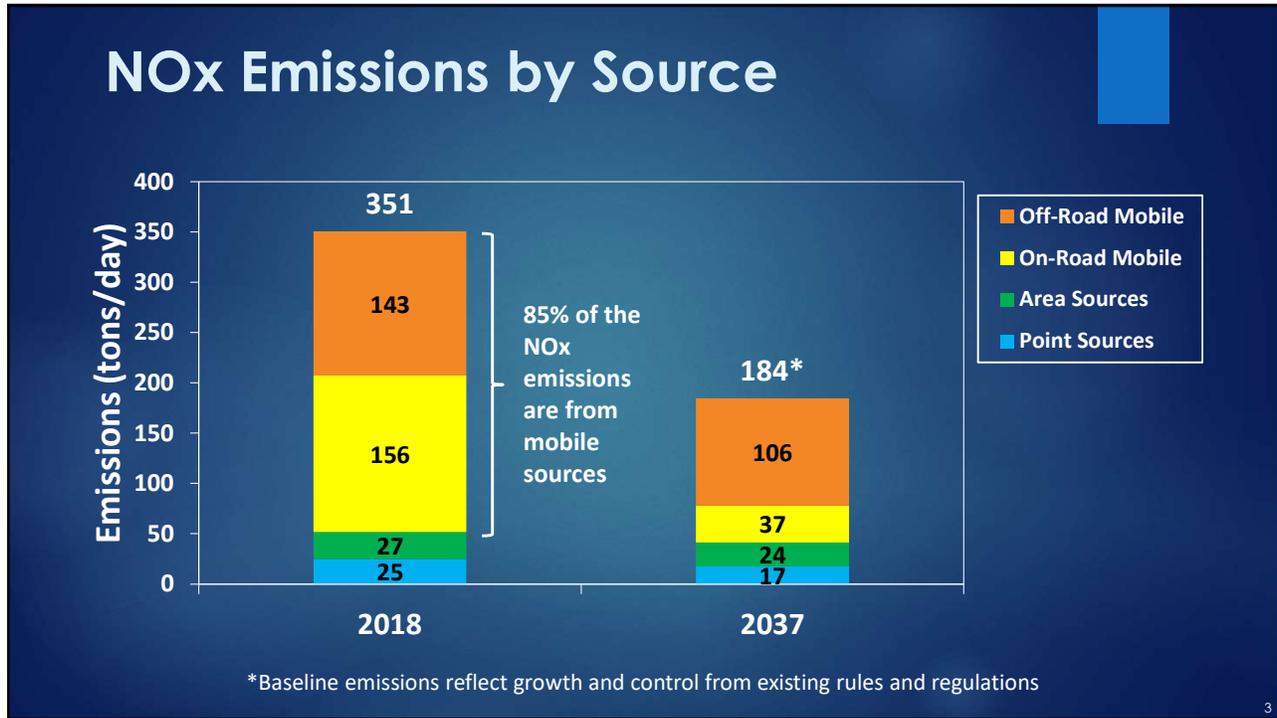
Manages over \$1.27B to fund incentive projects to accelerate emission reductions

Infrastructure

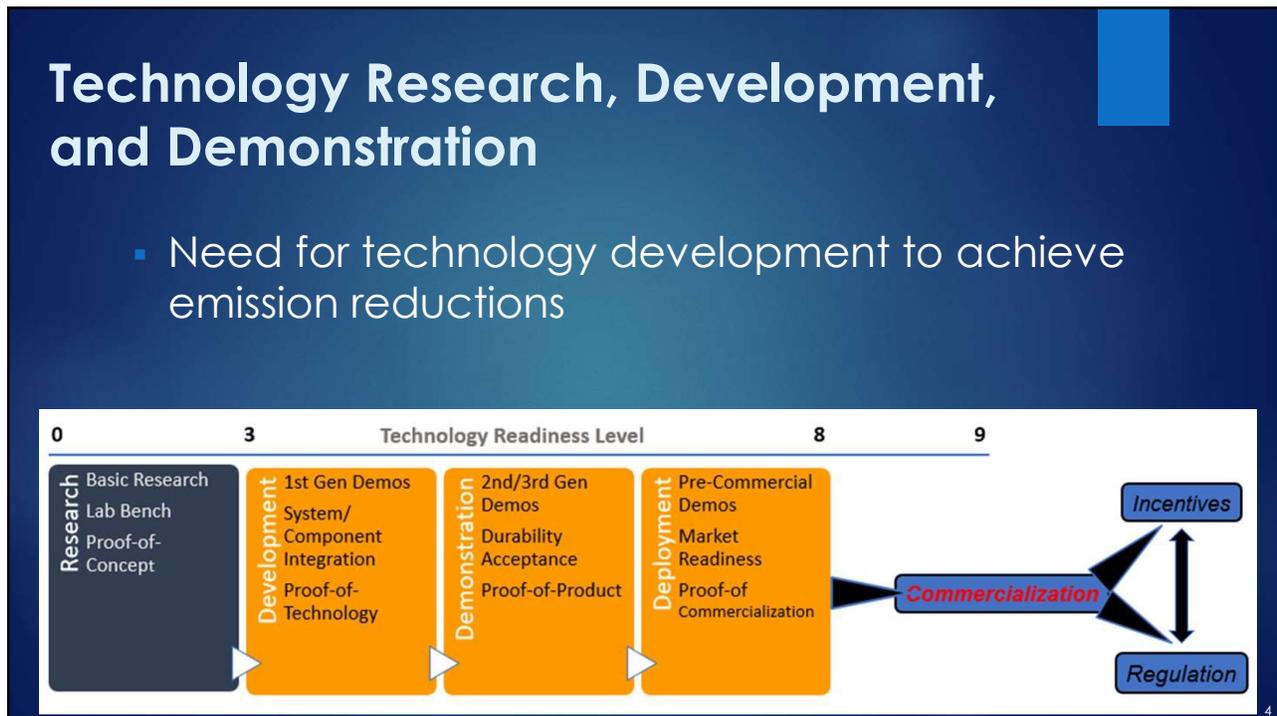


Manages over \$84M of infrastructure projects that support NZE and ZE technology deployments

2



3



4

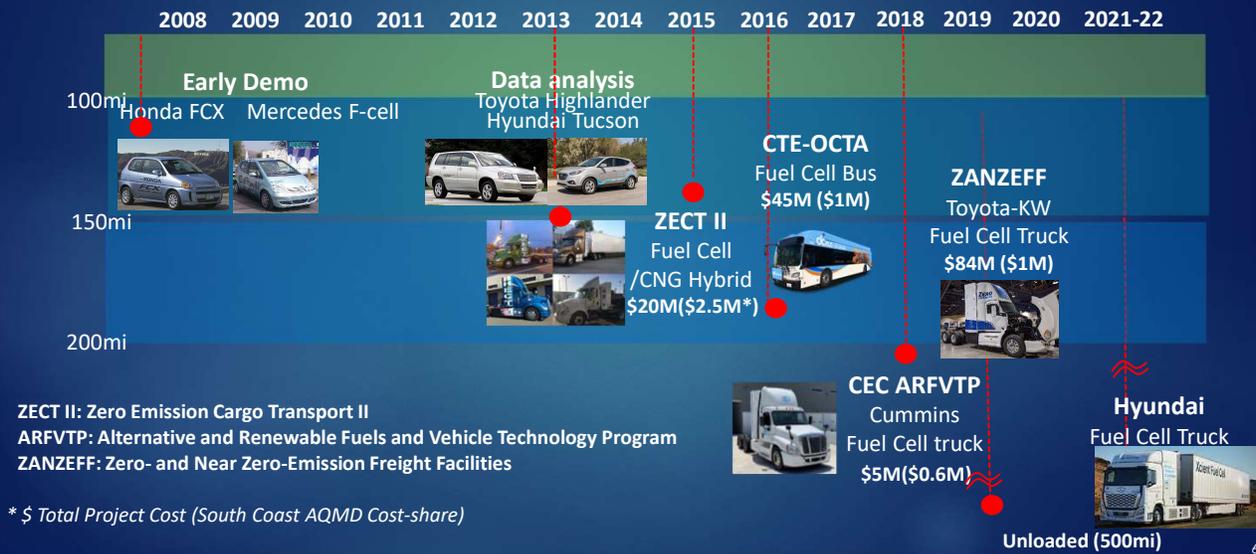
Origin of Clean Fuels Fund Program

- Established in 1988
- \$1 fee DMV registration (\$12M/year)
- Stationary source (\$400k/year)
- Research, develop, demonstrate and deploy clean technologies
- Focused on On-Road sector

5

5

South Coast AQMD Clean Fuels Program- History of Fuel Cell Vehicle Projects

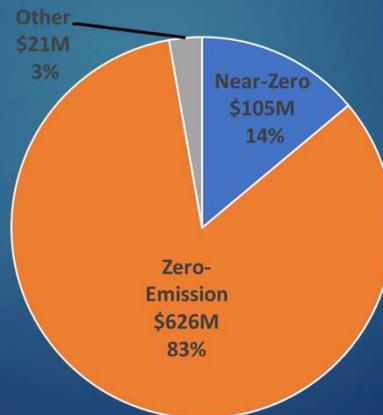


6

6

Focus on Zero-Emission Technology Demonstration Projects

Total Project Funding Since 2017
(including state and federal grants)



7

South Coast AQMD Private Public Partnerships Maximizes Project Cost-Share

Projects started in 2022



8

Zero-Emission Truck Projects

South Coast AQMD has the largest number of battery electric and fuel cell development and demonstration projects in the country

Battery Electric Projects

- Volvo LIGHTS (30 Class 8, **DHO** recently completed)
- JETSI (100 Class 8)
- EPA TAG (35)
- Volvo Switch-On (70 Class 8)
- Zero-Emission Drayage Trucks (37 Class 8)
- Prop1B (16 Class 8 trucks)



Fuel Cell Projects

- Hyundai (7 class 8)
- A-1 (2 buses)
- Sunline Transit (6 buses)
- Daimler (6 Class 8)
- Kenworth- Toyota (10 Class 8)



9

DHO

Charging Infrastructure Challenges

- Matching infrastructure construction with truck delivery
- High power requirements of trucks several megawatts
- Distribution grid capacity
- Potential delays - designing and permitting infrastructure including charging equipment
- Resiliency - backup generation
- Need for opportunity charging
- Importance of mitigating demand charges – solar, storage
- Costs



Battery Electric Truck "holding lot"



Schneider South El Monte April 20th

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Slide 9

DH0 Missing a space after 30 class 8.

Daphne Hsu, 2023-06-06T15:50:05.799

Slide 10

DH0 Global comment: Please proofread.

Daphne Hsu, 2023-06-06T15:52:14.336

2022 EPA Targeted Air Shed Program Awards



Battery plug-in hybrid tugboat

- Innovative charging infrastructure using scalable modular hydrogen power generation and battery energy storage



Six Daimler (Freightliner) Class 8 hydrogen fuel cell trucks

- Leased through Penske Truck Leasing to various Southern California fleets
- Validate reliability and effectiveness of fuel cell technology



Three prototype electric asphalt

- Utilize in real-world applications
- Test performance, explore energy storage capacity and charging infrastructure options, understand operator feedback

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Mobile Hydrogen Refueler

- Demand of off-road fuel cell equipment growing
 - No access to hydrogen fueling stations
- Mobile hydrogen refueling stations needed to support fuel cell off-road equipment and on-road vehicles
- Toyota Tsusho America Inc. with industry stakeholders developing fuel cell powered mobile hydrogen refueler for fuel cell cargo handling equipment



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Off-Road Demonstration Projects

- Water-in-Fuel Retrofit
- Project Cost: \$3.2 million (cost-shared by ports)
- MAN Energy Solutions developed and demonstrated Water-in-Fuel technology on a 9000 TEU ocean-going vessel's 2-stroke engine
- Emission benefits: 10-20% NO_x reductions in coastal operation
- Quick installation and no dry dock time



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Off-Road Demonstration Projects

OGV Multiple Fuel Flexible Injection System

- Project Cost: \$17 Million (cost-shared By Ports, EPA, MSC and Wartsila)
- Retrofit a 13,000 TEU Vessel with a Multiple Fuel Flexible Injection Platform and Gas Supply System
- Emission Benefits: 70% NO_x, PM and 25% CO₂ Reductions from a Tier II OGV
- Project Completion Q4 2025



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Off-Road Demonstration Projects

OGV Low-Pressure Exhaust Gas Recirculation (LP-EGR) Retrofit

- Project Cost: \$4 million (cost-shared by Ports and EPA)
- Retrofit a 13,000 TEU vessel with LP-EGR
- Emission benefits: 75% NO_x and 90% PM reductions from a Tier II OGV
- Project completion Q4 2025



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Off-Road Demonstration Projects

- Emissions Capture and Control System for Oil Tankers
- Project Cost: \$13 million (cost-shared by CARB)
- STAX Engineering developed and demonstrated emission control system for oil tankers
- Self-propelled spud barge powered by hydrogen fuel cell and renewable diesel
- Emission benefits: 90% NO_x, PM_{2.5} and ROG reductions from both auxiliary engines and boilers
- Project completion Q3 2024



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Off-Road Demonstration Projects

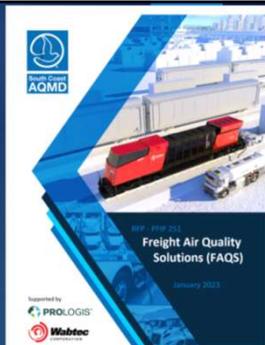
- Battery Electric Line-Haul Locomotive with Charging Infrastructure
- Project Cost: \$8.9 million (cost-shared by BNSF, Progress Rail, Caterpillar Company and EPA)
- Replace a BNSF Tier 1+ freight line-haul with an 8 MWh battery-powered zero-emission locomotive
- Two 1.4MW chargers at Barstow and Watson
- Annual remission reductions: 8.54 tons of NOx, 0.32 tons of PM2.5 and 1,125 tons of CO2
- Project completion Q4 2025



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Recent Grant Proposals Awaiting Decisions

- **CalSTA Application – Freight Air Quality Solutions (FAQS)**
 - Partners Wabtec and Prologis (\$1.65M total cost, \$76M requested)
 - Hydrogen Fuel Cell Short Line Locomotive
 - 376 heavy-duty charging stations and 19 hydrogen refueling dispensers at seven locations to support ZE truck drayage fleets
- **Port Infrastructure Development Program (PIDP)**
 - Zero Emission Freight Investment in Resilient Sustainable Transport – ZE FIRST
 - Partner Long Beach Container Terminal (\$85M total cost, \$68M application)
 - Phase 1 - design and installation battery electric charging equipment
 - Phase 2 - deploy over 200 pieces of zero-emission equipment and vehicles (Phase II)
- **CFI - Charging and Hydrogen Fueling station on I5 and I710, working with regional and state agencies**

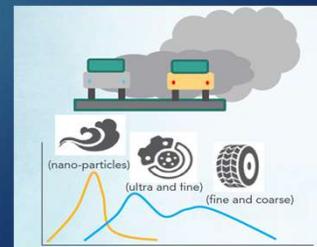
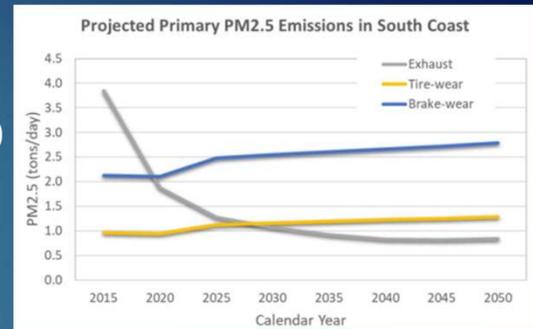


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Future Work – Non-Exhaust Particulate Matter Research

- Non-exhaust PM are projected to make up 80% of PM_{2.5} in 2050
- Brake-wear PM
 - Ultra-fine particles, high metal content
- Tire-wear PM
 - Fine/coarse particles, micro-plastic and metal content
- Health effects



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Summary

- Infrastructure: Big push to incentivize infrastructure and look at technology solutions to assist infrastructure
- Increased focus on off-road technology development
- Grant Applications: Working with regional partners and community organizations on state and federal funding opportunities for infrastructure, incentives, and technology development



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