2022 AQMP Mobile Source Working Group Meeting

December 16, 2020

Cleaning The Air That We Breathe...

Agenda

1. Welcome and Introductions
2. Introduction to 2022 AQMP Mobile Source Working Groups
3. An Overview of CARB's Mobile Source Strategies
4. Update on South Coast AQMD Facility-Based Mobile Source Measures
5. Zero Emissions Charging Infrastructure
6. Open Discussion
7. Closing Remarks

Agenda Item #1

Welcome and Introductions

Agenda Item #2

Introduction to 2022 AQMP Mobile Source Working Groups

Background – 2015 Ozone Standard

- **In 2015, the U.S. EPA strengthened the National Ambient Air Quality Standards (NAAQS) for ozone to 70 parts per billion (ppb)**
- **Nonattainment classifications for South Coast Air Basin and Coachella Valley**

Standard	Level	South Coast Classification	Coachella Valley Classification	Attainment Date
2015 8-hour Ozone	70 ppb	Extreme	Severe	August 3, 2038 (South Coast) August 3, 2033 (Coachella Valley)
2008 8-hour Ozone	75 ppb	Extreme	Severe	July 20, 2032 (South Coast) July 20, 2027 (Coachella Valley)
1997 8-hour Ozone	80 ppb	Extreme	Extreme*	June 15, 2024 (both South Coast and Coachella Valley)
1979 1-hour Ozone	120 ppb	Extreme	Attainment	February 6, 2023 (South Coast)

**Voluntary reclassification from severe to extreme in July 2019*

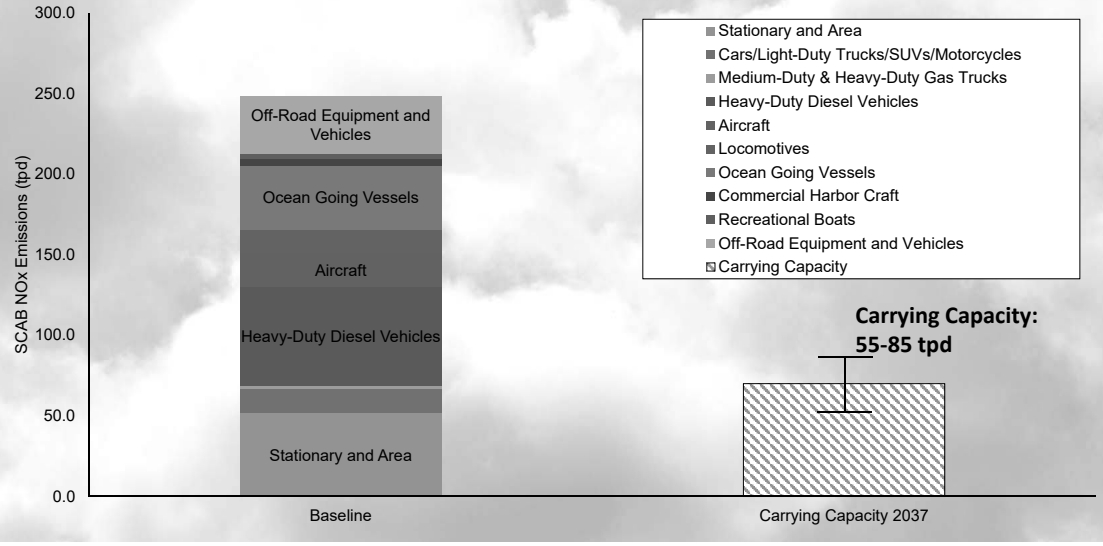
Key SIP Elements and Due Dates for 2015 Ozone Standard

	8/3/2020	8/3/2021	8/3/2022	8/3/2028
Severe and Extreme Areas	Baseline Year Emissions Inventory	Nonattainment New Source Review	Attainment Demonstration	Section 185 Fee Program (Failure to attain)
	Emissions Statement		Reasonably Available Control Measures	
	Reasonably Available Control Technology Demonstration		Reasonable Further Progress	
			Conformity	
			Contingency Measures	
	Vehicle Miles Traveled Offset		Enhanced Inspection and Maintenance Program	
Extreme Area Only		Clean Fuels for Boilers	2022 AQMP	

2037 Attainment Carrying Capacity

- 2016 AQMP modeling indicated that 70 ppb carrying capacity was approximately 70 TPD
- Final carrying capacity to reflect updated emissions inventory and modeling as well as recent ozone air quality trends
- Working hypothesis of 70-75 TPD used to develop control strategies
- New carrying capacity is expected to be in 55-85 TPD range

2037 Attainment Working Draft



Overall Control Approach for Attaining 2015 Ozone Standard

- Extensive transition to cleanest feasible technologies in mobile and stationary sources
- Regulatory measures; Incentive programs
- Eliminate/minimize reliance on 182(e)(5) measures
- Seek legislative authority where applicable
- Seek new sources of funding for new/existing incentive programs
- Work closely with state and local governments to maximize reductions from residential and commercial buildings

2022 AQMP Control Measures

- CARB's Updated SIP State Strategy for South Coast Air Basin
  - Mobile Sources
  - Consumer Products
- South Coast AQMD Control Measures
  - Stationary Sources
  - Mobile Sources
- SCAG's 2020 Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS) and Transportation Control Measures (TCM)

Legal Authority and Responsibility

Federal

Federal Sources *(Aircraft, OGVs, Locomotives)*

State

CARB SIP Strategy *(Mobile Source – On-Road Vehicles and Off-Road Equipment, and Consumer Products)*

Regional

South Coast AQMD *(Stationary and Local Mobile Source Control Strategy)*

SCAG *(Regional Transportation Plan and Transportation Control Measures)*

- **In 2018, 84% of NOx comes from mobile sources**

Mobile Source Measure Development

- Scenarios & Programmatic Concepts
- Technology mixes needed for attainment

2020 Mobile Source Strategy

SIP Measures

- CARB State SIP Strategy
- South Coast AQMD Mobile Source Measures

- Inclusion of State Measures / Commitments in the AQMP

2022 AQMP

2022 AQMP Mobile Source Working Groups

- **Four targeted categories:**
  - **Ocean Going Vessels**
  - **Aircraft**
  - **Trucks**
  - **Construction & Industrial Equipment**

For other mobile source categories, on-going public engagement processes conducted by CARB and/or South Coast AQMD will be relied upon (e.g., locomotives)

- **January/February 2021: Kickoff meetings with meetings monthly or every other month**
- **June/August 2021: Draft/final control measures**

2022 AQMP Overall Schedule

Contact Information

Zorik Pirveysian
Planning and Rules Manager
ZPirveysian@aqmd.gov

Ian MacMillan
Planning and Rules Manager
imacmillan@aqmd.gov

AQMP Mobile Source Working Groups
AQMPMobileSources@aqmd.gov

Agenda Item # 3

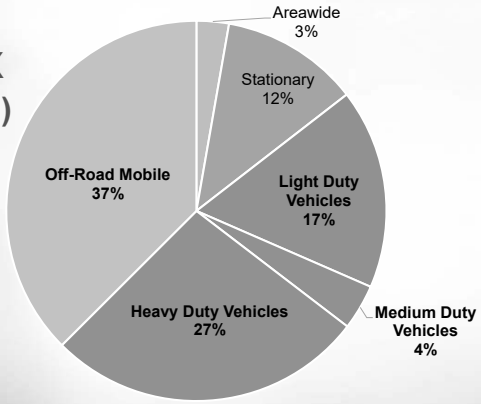
An Overview of CARB's Mobile Source Strategies

2022 AQMP Mobile Source Working Group

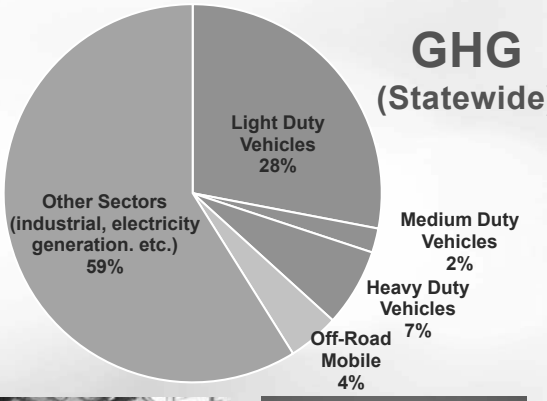
December 16, 2020

Importance of Mobile Source Emissions

NOx (SCAB)



GHG (Statewide)



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Multiple Goals

2023: South Coast & SJV Ozone

2024/25: AB 617 Communities

South Coast & SJV PM2.5

2030: GHG 40 percent below 1990

2031: South Coast & SJV Ozone

2037: South Coast & SJV Ozone

2045: Carbon Neutrality

2050: GHG 80 percent below 1990

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Executive Order N-79-20

100% ZEV sales by 2035

Full transition to **ZEV short-haul/drayage trucks** by 2035

Full transition to **ZEV buses** & **heavy-duty long-haul trucks** by 2045*

Full transition to **ZE off-road equipment** by 2035*

*where feasible

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Latest Adopted Regulatory Measures

HD Vehicle Inspection Program (HDVIP)/ Periodic Smoke Inspection Program (PSIP)

Innovative Clean Transit (ICT)

Ocean-Going Vessels At Berth

HD Omnibus

HD Engine Warranty

Zero Emission (ZE) Airport Shuttle Bus

Advanced Clean Trucks

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Measures Under Development
Anticipated Adoption: 2021

Zero Emissions Transport Refrigeration Unit

Small Off-Road Engines

Low-Emission Diesel

Commercial Harbor Craft

On Road Motorcycle

Advanced Clean Fleets & ZE Drayage

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Measures Under Development
Anticipated Adoption: 2021 – 2024

Heavy-Duty Inspection & Maintenance

Locomotives and Railyards

Cargo Handling Equipment

2021 | **2022** | **2022** | **2022** | **2023 2024**

Advanced Clean Cars II

Zero-Emission Forklift

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2020 Mobile Source Strategy Scenarios

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2020 Mobile Source Strategy

- Builds on 2016 Mobile Source Strategy
- Conceptual scenario approach
- Identifies technology mixes needed to meet air quality and climate targets
- Meets SB 44 requirements & reflects Governor's recent ZEV EO
- Informs policy development

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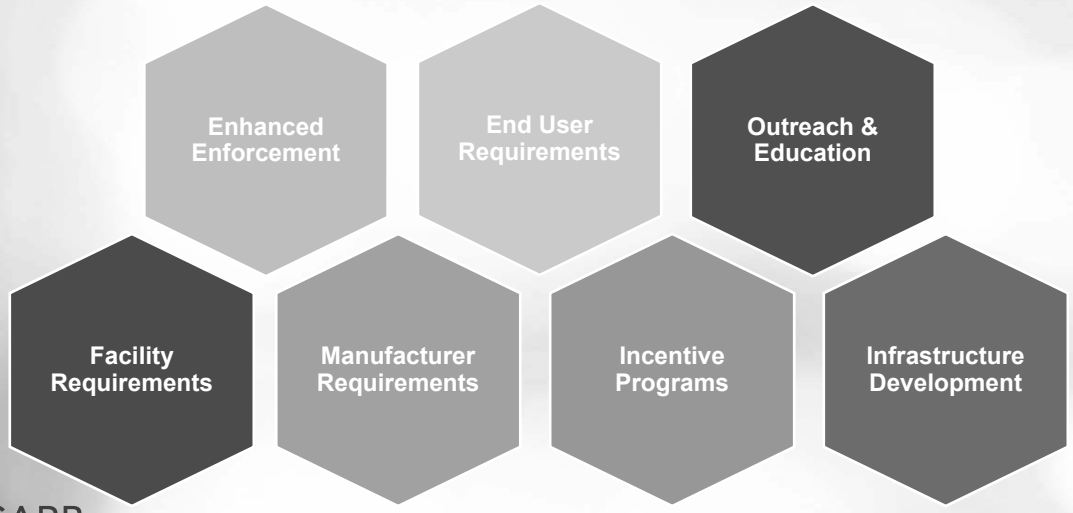
Achieving Air Quality and Climate Goals Requires Multiple Tools



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On-Road Light-Duty Vehicles

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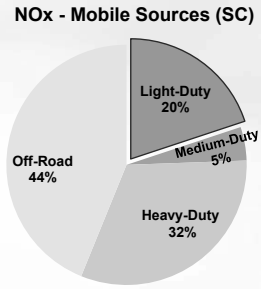
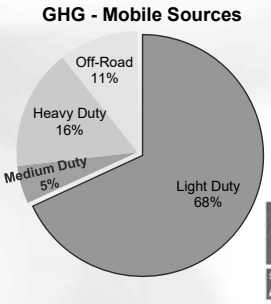
On-Road Light-Duty Vehicles

- Light-duty vehicles (<8,500 lbs. GVWR) are 20% of South Coast mobile source NOx and 68% of GHG emissions Statewide
- **Strategies** for on-road light-duty vehicles (LDVs) include:
  - Enhanced LEV and ZEV regulations through Advanced Clean Cars II for model year 2025 and newer
  - Clean Miles Standard (SB 1014)
  - VMT Reduction
  - Clean Fuels





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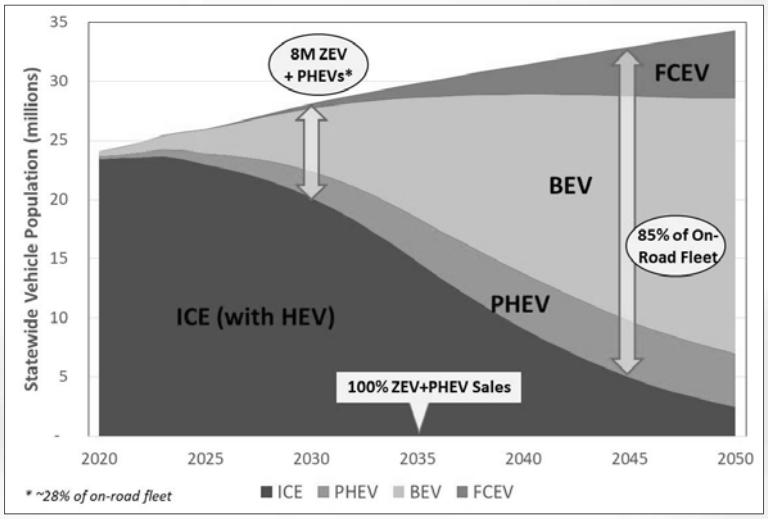
On-Road Light-Duty Scenario



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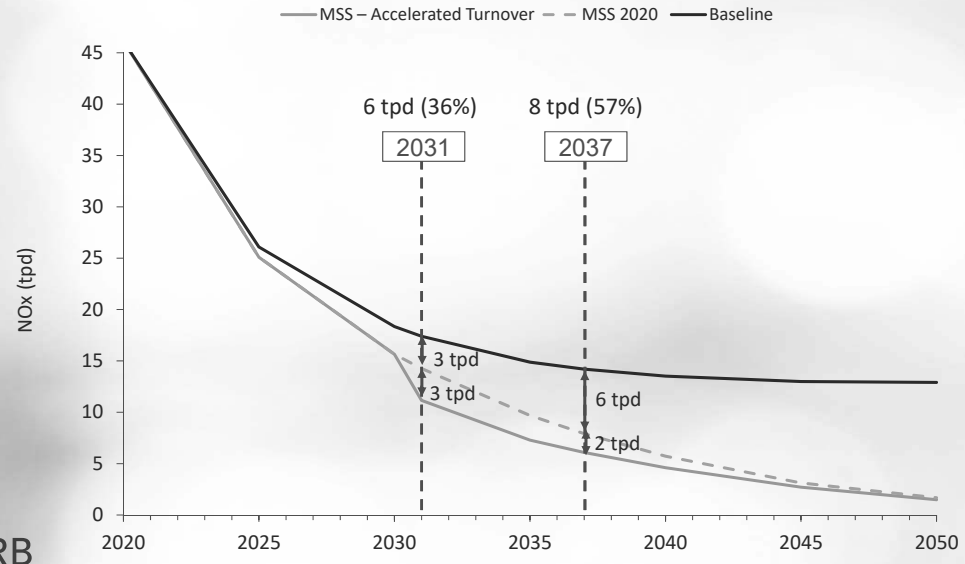
On-Road Light-Duty NOx in South Coast



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On-Road Medium and Heavy-Duty Vehicles

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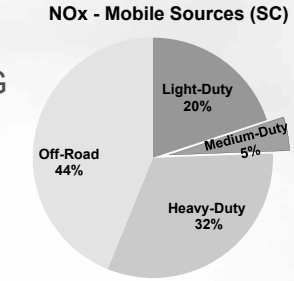
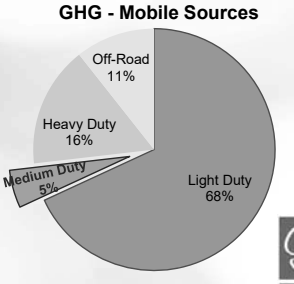
On-Road Medium-Duty Vehicles

- Medium-duty vehicles (8,501 – 14,000 lbs. GVWR) are 5% of mobile source NOx in South Coast and 5% of GHG emissions Statewide
- **Strategies** for medium-duty vehicles (MDVs) include:
  - Zero-emission technology transformation starting in 2024
    - Advanced Clean Trucks – adopted in June 2020
    - Advanced Clean Fleets – expected in late 2021
  - Enhanced LEV regulations through ACC II
  - Continued energy efficiency improvements (e.g., Phase 3)





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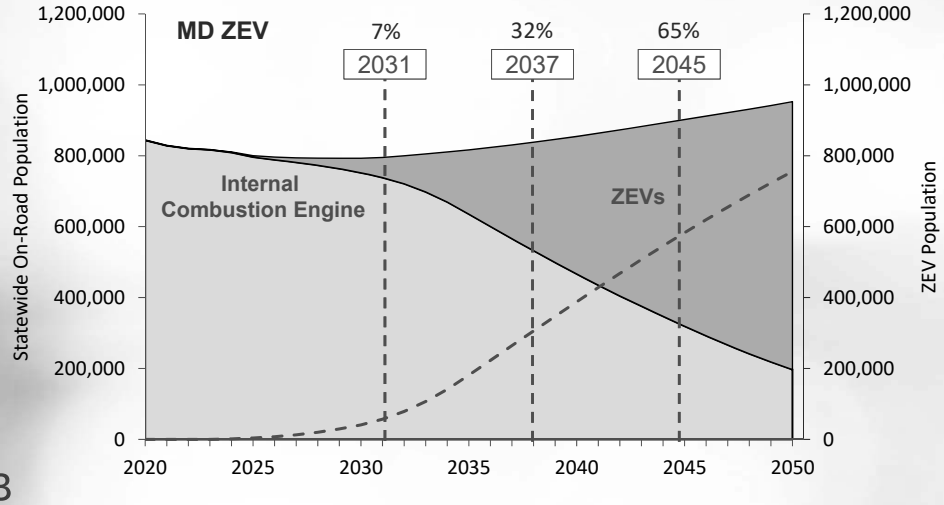
Medium-Duty Vehicles Scenario

- 100% of sales are zero emissions vehicles (ZEVs) in 2035



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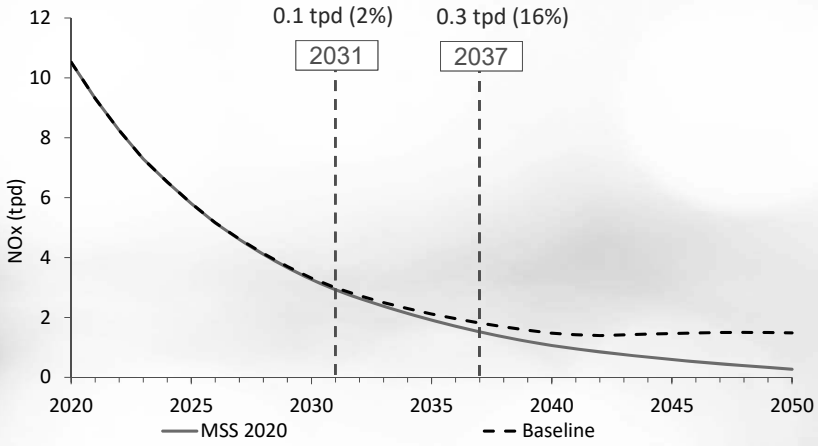
On-Road Medium-Duty in South Coast

- The scenario will result in NOx emissions that are 1 and 11 percent lower from the current baseline in 2031 and 2037, respectively



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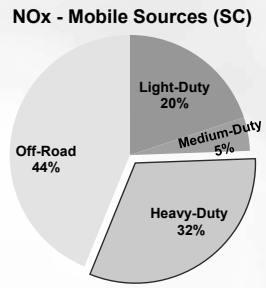
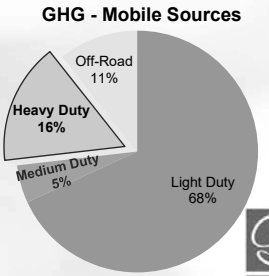
On-Road Heavy-Duty Vehicles

- Heavy-duty vehicles (above 14,000 lbs. GVWR) are 32% of mobile source NOx in South Coast and 16% of statewide mobile source GHG emissions
- **Strategies** for heavy-duty vehicles (HDVs) include:
  - Zero-emission technology starting in 2024
    - Advanced Clean Trucks (ACT) – adopted
    - Advanced Clean Fleets and ZE Drayage – expected in late 2021
  - Cleaner combustion (i.e., HD Omnibus) – adopted
  - HD Inspection & Maintenance – expected in late 2021
  - Continued energy efficiency improvements
  - Use of renewable fuels





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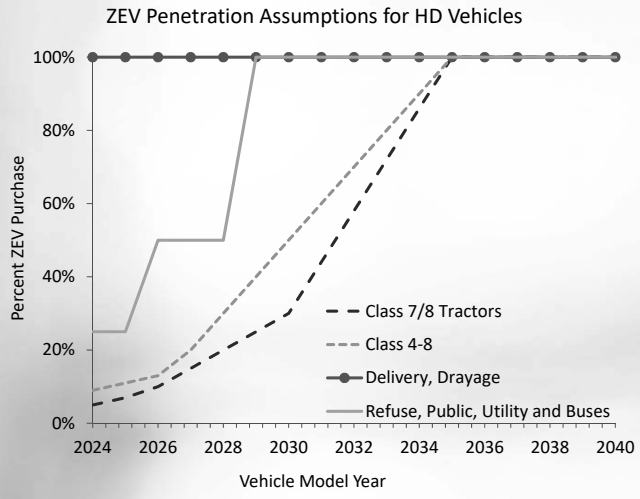
Heavy-Duty ZEV Phase-In Assumptions



- 100% ZEV CA fleet purchases by 2035
- **Delivery and drayage fleets:** 100 percent ZEV sales starting with model year 2024
- **Vehicle categories with low annual mileage or return-to-base operation:** Similar phase-in schedule as the innovative clean transit regulation
- **Other vocational and tractor vehicle categories:** ZEV phase-in matches ACT requirements until model year 2030, after which ZEV sales assumptions ramp up to 100 percent sales in 2035

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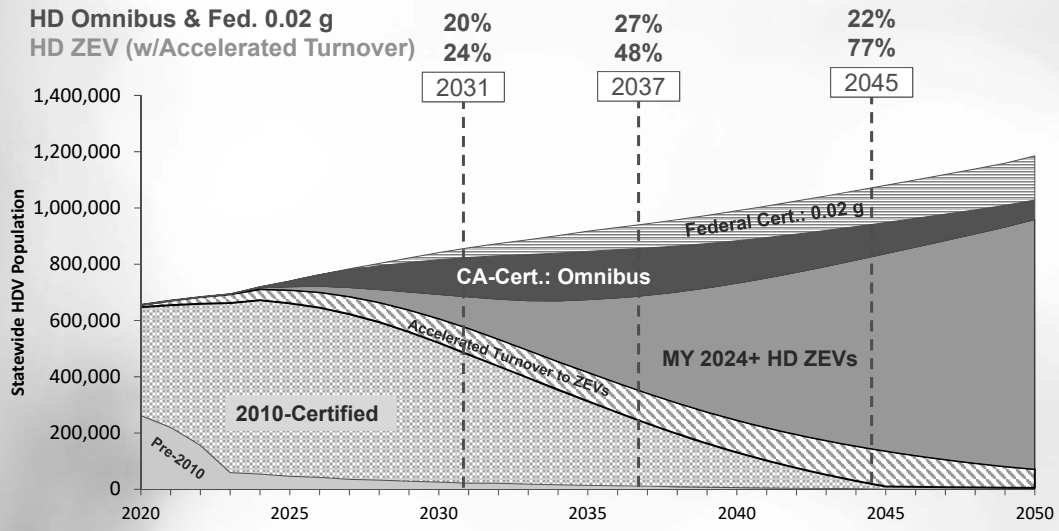
On-Road Heavy-Duty Scenario



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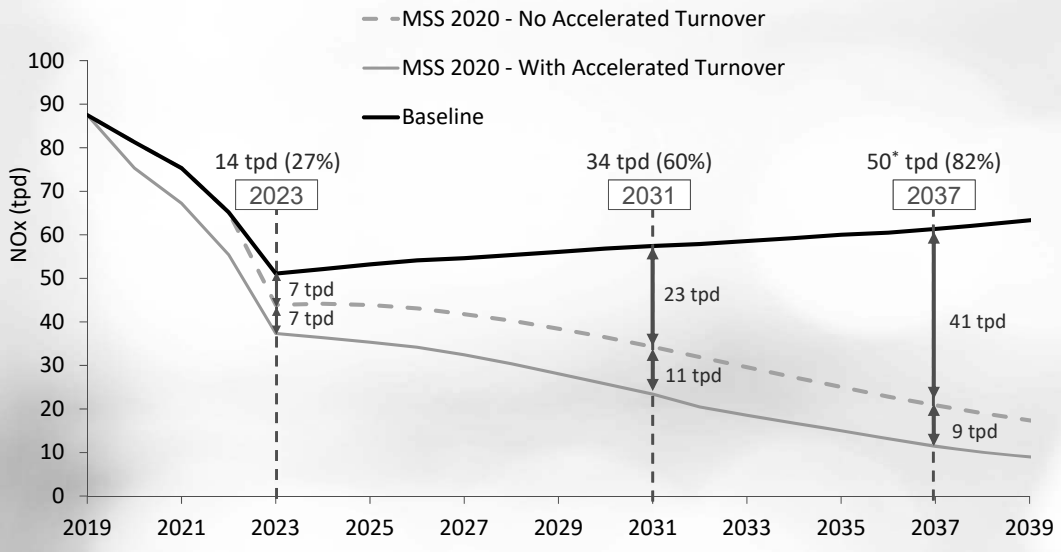
On-Road Heavy-Duty NOx in South Coast



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* These numbers include reductions from HD Omnibus and ACT regulations. The two regulations result in 14.2 tpd of NOx reduction in South Coast air basin by 2037

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Off-Road Vehicles and Equipment

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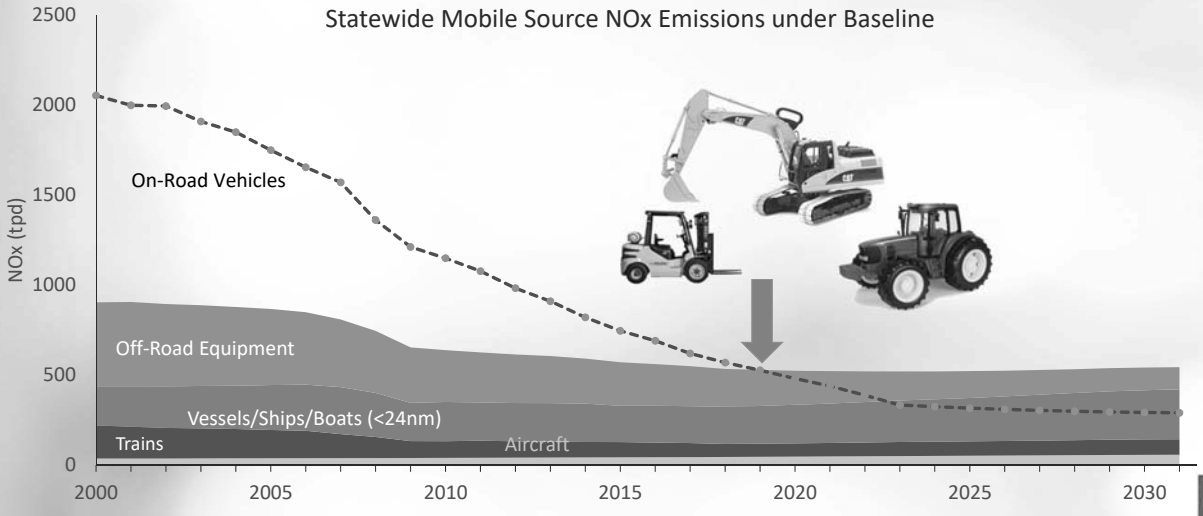
Growing Importance of Off-Road



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Ref: CEPAM 2019 Summer

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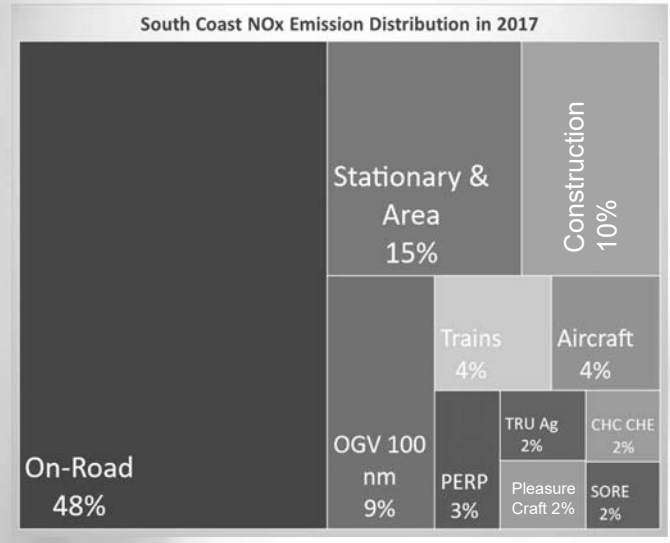
Off-Road Sector



- Off-road NOx contribution in South Coast
  - 37% in 2017
  - 44% in 2022, surpassing on-road as the ***largest*** contributor

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Guiding Principles for Off-Road Control Strategies

- Zero Emission Wherever feasible
- Cleaner Combustion Technology
- Accelerated Turnover
- Hybridization & Renewable Fuels

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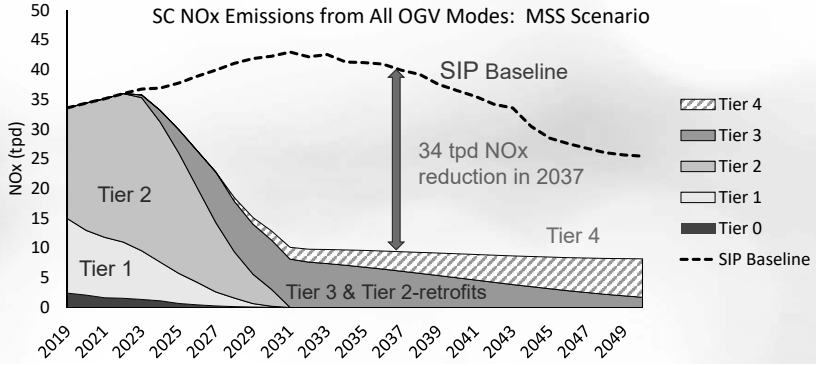
Ocean-Going Vessels (OGVs)

- **Emissions Contribution:** 20 percent of mobile source NOx in 2037
- **Adopted Rule:** Expansion of at-berth rule to cover more vessel types resulting in 2.8 tpd of NOx in South Coast air basin by 2037
- **MSS Scenario**: Address transit, anchorage and maneuvering emissions
  - Replace Tier 0/1/2 visits with Tier 3 or retrofitted Tier 2 visits by 2031
  - Introduce Tier 4 marine standards in 2028



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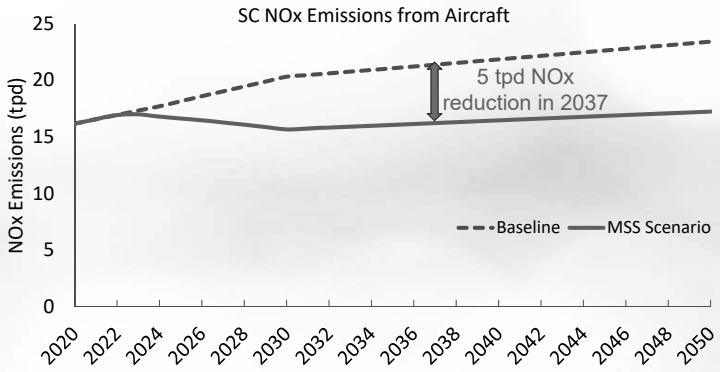
Aircraft

- **Emissions Contribution**: 11 percent of mobile source NOx in 2037
- U.S. EPA standards are technology-following and not stringent enough
- **MSS Scenario:**
  - Operational efficiency improvement: de-rated take-offs, reduce power/time during taxiing
  - Transition to zero emission auxiliary power units (APUs)



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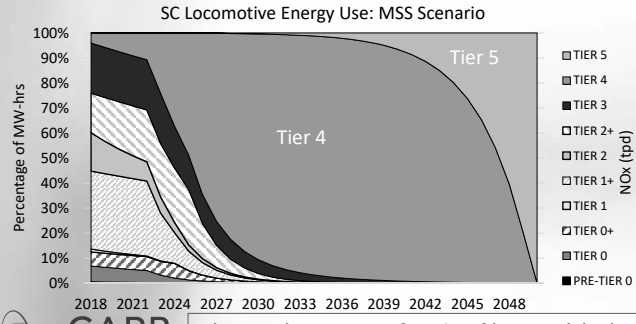
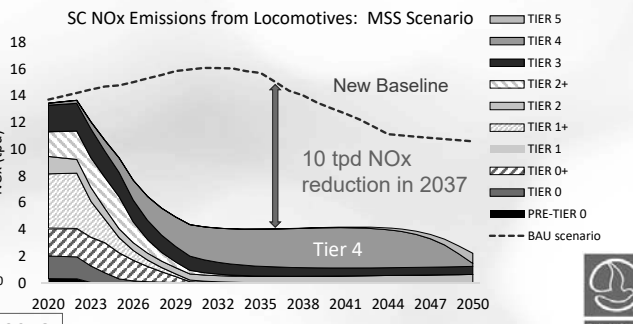
Locomotives

- **Emissions Contribution:** 7 percent of mobile source NOx in 2037
- CARB is developing regulatory concepts to reduce emissions from locomotives
- **MSS Scenario:**
  - Tier 5 locomotive standard in 2028
  - Accelerated turnover of all line-hauls to Tier 4/5
  - Replace Tier 0/0+ switchers in railyards with Tier 4/5 by 2030





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*Tier 4 only accounts for **4%** of loco activity in 2018*

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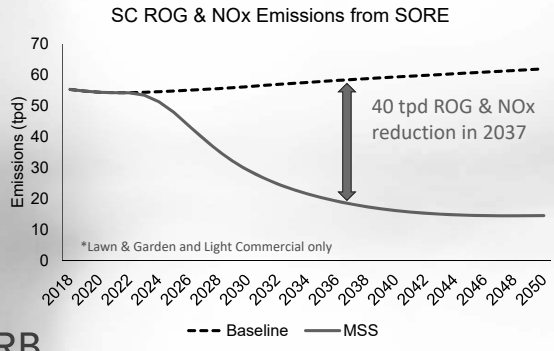
Small Off-Road Engines (SORE)

- **Emissions Contribution:** 8 percent of mobile source NOx in 2037, and a significant source of statewide ROG emissions
- CARB is pursuing regulatory measures toward full electrification
- **MSS Scenario:** all new sales will be zero-emission starting in 2025 (except for federal preempted equipment)



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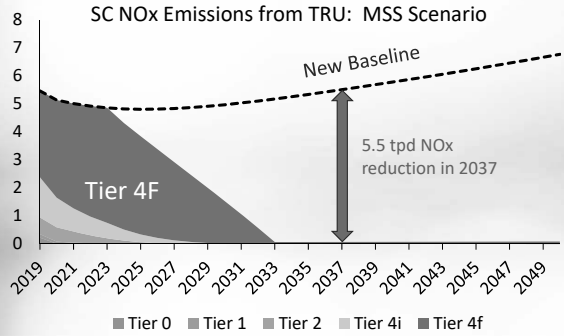
Transport Refrigeration Units (TRUs)

- **Emissions Contribution:** 6 percent of mobile source NOx in 2037
- **Rule Concepts:**
  - Transition diesel truck TRUs to zero emission
  - Stricter diesel PM standard for newly manufactured TRUs in the remaining categories
- **MSS Scenario:** Transition to zero emission TRUs from 10% in 2024 to 100% in 2033



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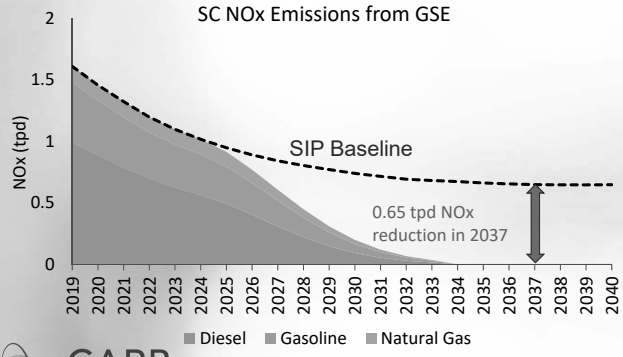
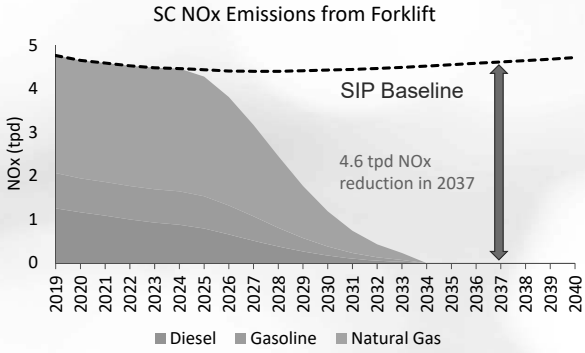
Airport Ground Support Equipment (GSE) & Forklifts

- **Emissions Contribution:** 3 percent of mobile source NOx in 2037
- **MSS Scenario:** full electrification by 2034 for GSE and Forklifts
  - **GSE:** currently 34% electric
  - **Forklifts:** electrification more suitable for moderate/low lift capacity forklifts, lift capacity threshold under development





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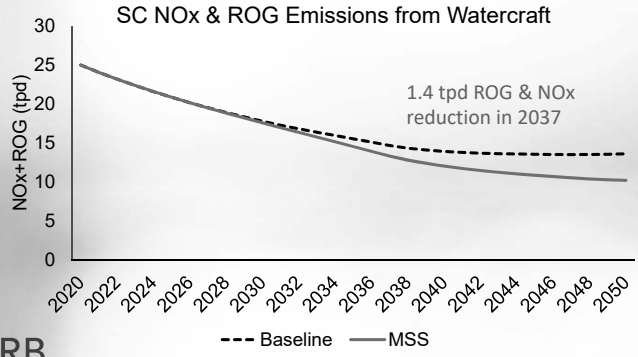
Recreational Watercraft

- **Emissions Contribution:** 3 percent of mobile source NOx in 2037, and a significant source of statewide ROG emissions
- **MSS Scenario**: More stringent THC+NOx standards along with electrification of outboard engines (<19 kW) and personal watercraft



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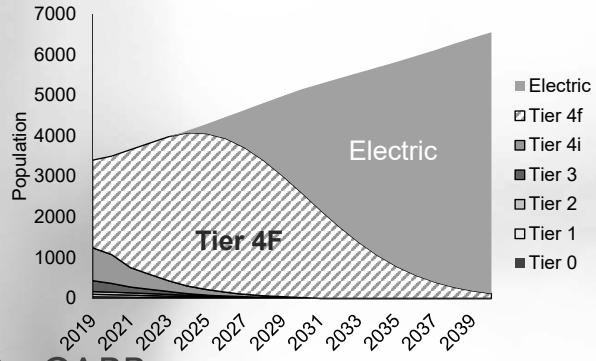
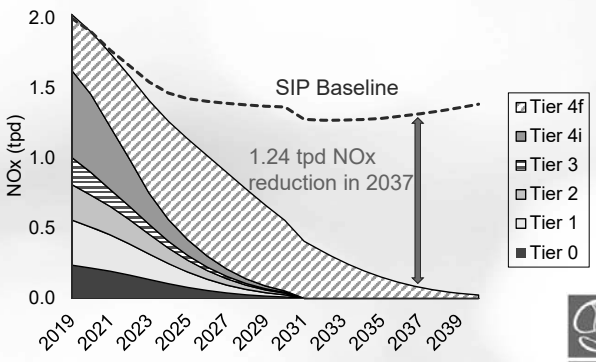
Cargo Handling Equipment (CHE)

- **Emission Contribution:** 2 percent of mobile source NOx in 2037
- Regulation being developed by CARB to reduce emissions from on-site seaport and intermodal railyard equipment
- **MSS Scenario:** begin transition to full electric operation in 2026

SC CHE Population: MSS Scenario



SC CHE NOx Emissions: MSS Scenario



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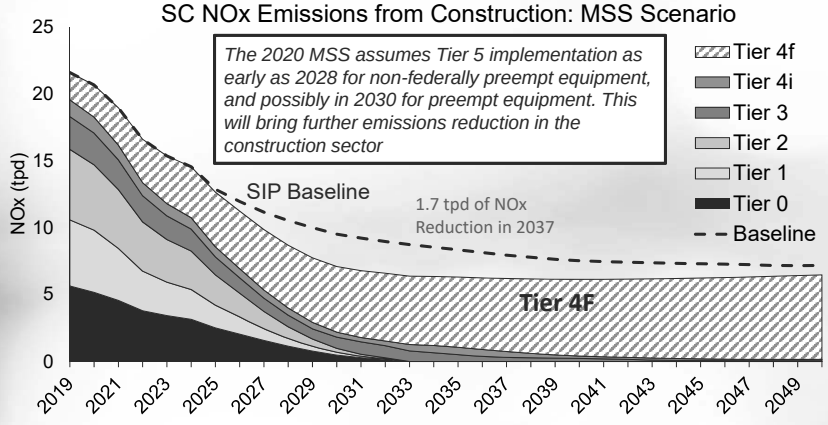
Construction, Industrial & Mining

- **Emission Contribution:** 10 percent of mobile source NOx in 2037
- **Current regulation** allows continued use of Tier 0 to Tier 2 indefinitely if meeting Fleet Average requirements
- **MSS Scenario**: full turnover of Tier 0/1/2 equipment by 2033

SC NOx Emissions from Construction: MSS Scenario



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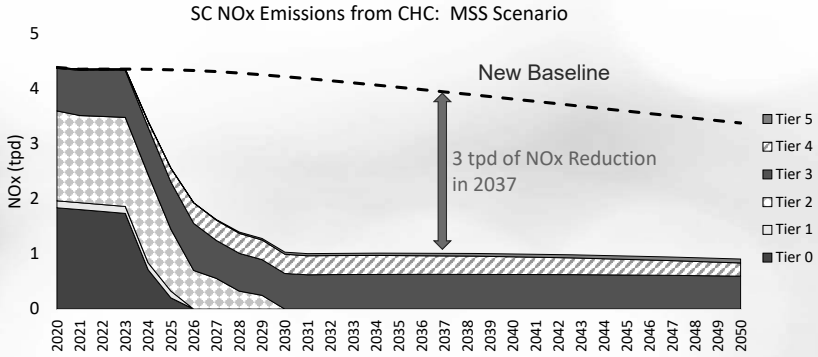
Commercial Harbor Craft (CHC)

- **Emission Contribution:** 2 percent of mobile source NOx in 2037
- **Rule Concepts:**
  - Turn over all vessels except for commercial fishing to cleanest engines and retrofit with DPF
  - Hybridization for new excursion boats and tugs; zero-emission for short-run ferries starting in 2023
- **MSS Scenario**:
  - Introduce Tier 4 standard in 2024, and Tier 5 in 2027 for all vessels
  - Hybridization for all excursion boats and tugs; zero-emission for 20% ferries starting by 2030



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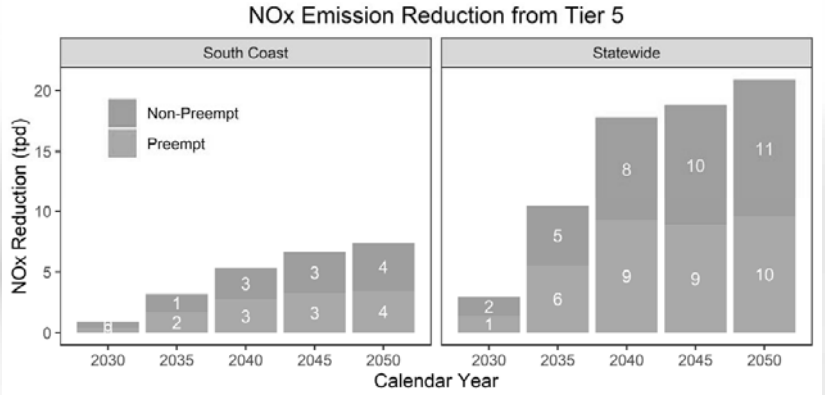
Cleaner Off-Road Engine Standards

- **Off-Road Tier 5**
  - 50%-90% NOx & PM reduction from Tier 4F
  - Implementation from 2028 - 2030
- **Additional standards:** Off-Road on-board diagnostic (OBD) and GHG standards



CARB

Interagency Coordination on Infrastructure

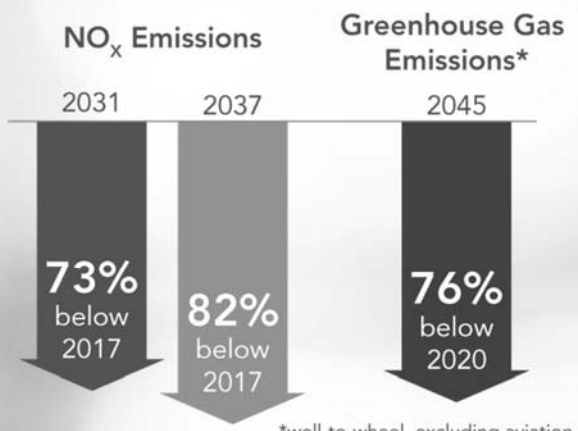
- Zero-emission technology for both on- and off-road sectors requires streamlined infrastructure build-out
- Staff have been working with CEC, CPUC, and GoBiz throughout development of the 2020 MSS
- Results from the 2020 MSS are being incorporated into the CEC's technical analysis for AB 2127 report

CARB

Potential Benefits

2020 Mobile Source Strategy

November 2020 Draft



85 percent of passenger vehicles ZEV & PHEV in 2045

77 percent of heavy-duty fleet ZEVs in 2045

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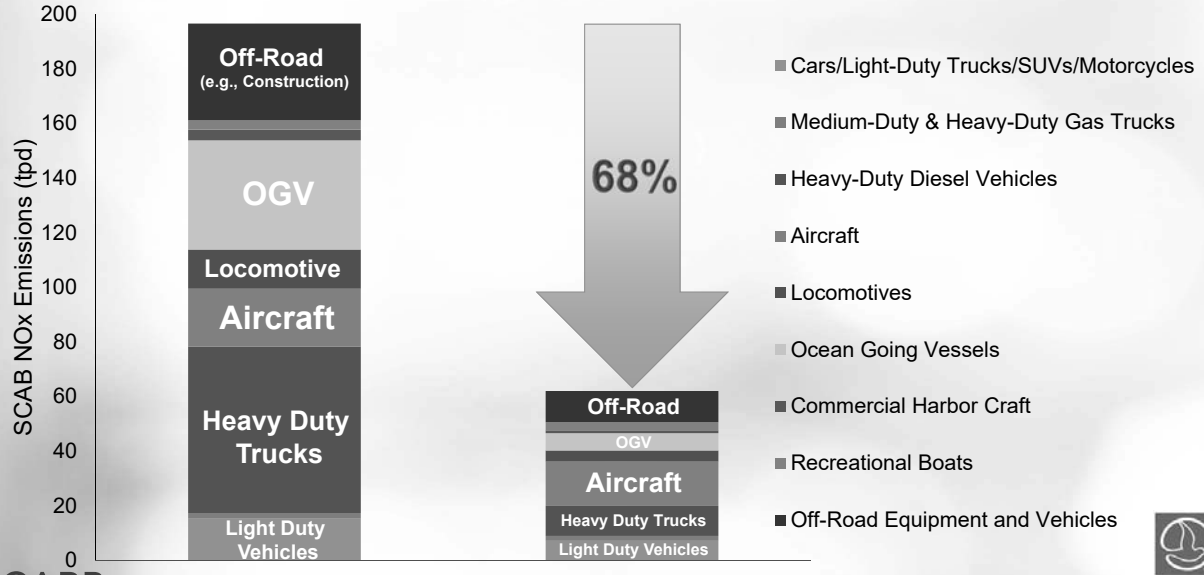
2037 NOx Reductions from MSS Concepts in South Coast Air Basin



CARB

South Coast AQMD

Contact

Sara Forestieri
Air Resource Engineer
On-Road Model Development Section
Sara.Forestieri@arb.ca.gov

Liang Liu
Air Resource Engineer
Off-Road Diesel Analysis Section
Liang.Liu@arb.ca.gov

Fang Yan
Manager
On-Road Model Development Section
Fang.Yan@arb.ca.gov

Cory Parmer
Manager
Off-Road Diesel Analysis Section
Cory.Parmer@arb.ca.gov

General inquiries on CARB's 2020 Mobile Source Strategy
MSS@arb.ca.gov

CARB

South Coast AQMD

Agenda Item #4

Update on Facility Based Mobile Source Measures

Facility Based Mobile Source Measures

- Aimed at reducing emissions from mobile sources associated with facilities (indirect sources)
  - E.g., trucks visiting warehouses or ports
- Governing Board established direction for 5 categories of FBMSMs
  - Airports
  - Ports
  - New/redevelopment
  - Warehouses
  - Rail yards

MOUs

Further research regulatory/non regulatory options

Regulations (Indirect Source Rules)

Memorandum of Understanding Approach

- Enforceable agreement to achieve emission reductions from implementation of clean air plans
- Emission reductions must meet criteria for SIP credit
  - Surplus
  - Quantifiable
  - Permanent
  - Enforceable
- South Coast AQMD backstops any shortfall

Regulatory Approach

- South Coast AQMD can create and enforce rules to regulate Indirect Sources
- Important considerations for ISR
  - Limits on legal authority (air district-state-federal, court decisions, preemption, etc.)
  - Implementation
    - Complicated relationships between facility owners, operators, cargo owners, truckers, etc.
    - Rule must be feasible for industry, and enforceable by air district
  - Cost of regulation
    - Cleaner vehicles (purchase price, fuels, infrastructure, incentives, etc.)
    - Health impact on community from emissions

An "Indirect Source" is a facility that "attracts mobile sources"

Ports

- Develop MOU between SCAQMD and Ports of Los Angeles and Long Beach to achieve emission reductions
- Based on emission reduction benefits associated with implementation of Ports 2017 CAAP measures with initial focus on:
  - Clean Trucks Program
  - Cargo Handling Equipment Procurement Planning
- Potential new incentive programs for ocean-going vessels

Draft MOU Elements

1 - Drayage Trucks
- Implement Clean Trucks Program

2 - Cargo Handling Equipment (CHE)
- Accelerate Zero Emission (ZE) and Near Zero Emission (NZE) CHE deployment with a 100% ZE CHE goal by 2030

3 - Ocean-Going Vessels (OGV)
- Reduce OGV emissions through new and enhanced incentive programs: Vessel Speed Reduction, Green Ship Incentives and Clean Ship Program

4 - Harbor Craft
- Develop incentive program to upgrade harbor crafts with cleanest engines

5 - Locomotives
- Increase on-dock rail cargo moves to 35% and seek to utilize cleanest locomotives

Clean Trucks Program

- Only CAAP measure in the MOU with potential SIP creditable emission reductions in 2023
- Truck rate ($10/TEU) will be charged on trucks with loaded containers at port terminal gates
- Revenues collected will be used to fund truck replacements with clean trucks (zero and near-zero emission trucks)

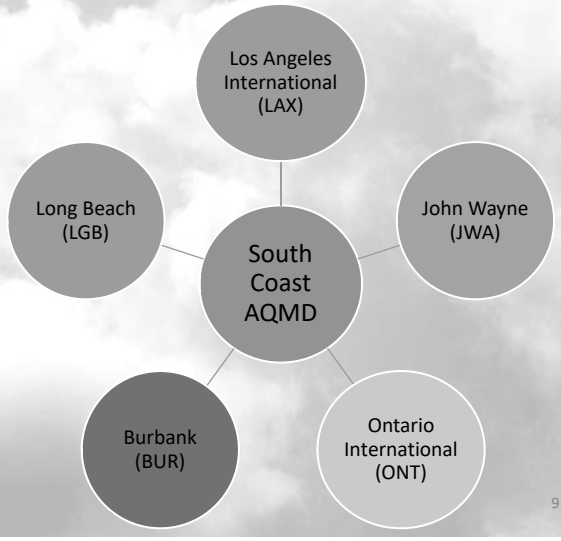
Ports planned implementation of Clean Truck Program on hold due to COVID-19 pandemic

Ports Current Status

- MOU on hold as implementation of Clean Truck Program is uncertain
  - Ports cite to economic uncertainty as cargo volumes declined sharply Q1 2020
  - Cargo volumes have subsequently rebounded
- Will resume once pathway for the Clean Truck Program is clear

Airports

- Establish MOU between South Coast AQMD and each airport to achieve SIP-creditable emission reductions
- Covers five commercial airports in the region



Airports MOU Process

AQIP/AQIM

- Each airport developed an air quality improvement plan/measures (AQIP/AQIM)
- AQIP/AQIM includes strategies to reduce emissions from non-aircraft airport sources

MOUs

- South Coast AQMD developed a MOU with each commercial airport to reduce emissions
- MOUs are based on the airports' SIP creditable AQIP/AQIM measures

SIP Credits

- South Coast AQMD to work with EPA to get SIP credits for AQIP/AQIM measures
- If emission reductions not fully achieved, South Coast AQMD covers the shortfall

AQIP/AQIM Measures

- Specific measures vary among airports, reflecting uniqueness of each airport
- Common measures for ground support equipment, airport-owned fleet, improvement in passenger traffic and infrastructure
- Performance targets for measures vary among airports
- Emission reduction benefits estimated for quantifiable measures

Total NOx SIP Credits from SIP Creditable AQIP/AQIM Measures

	2023 (tons per day)	**2031 (tons per day)**
SIP creditable Emission Reductions	0.52	0.38

Airports – Current Status

- Governing Board adopted MOUs in December 2019
- Airports are implementing measures according to the MOUs

New Development and Redevelopment

- Staff directed to continue to develop rule concepts, timelines, cost and benefit estimates
- The Governing Board expressed key concerns about:
  - Types of projects affected (e.g. affordable housing projects)
  - Effects on real-estate prices
  - Job and economic impacts
- Based on Board direction staff:
  - Held additional Working Group meetings
  - Met with industry representatives and environmental groups
  - Reviewed data regarding composition of construction equipment fleets
  - Surveyed the Working Group on investigative approaches to identify emission reduction costs

New Development and Redevelopment

- Promising emission reduction strategies are being pursued by projects to mitigate CEQA-related air quality impacts
- As an early action, staff is considering voluntary CEQA mitigation programs, for example

CEQA Air Quality Mitigation Fund

Projects could voluntarily contribute to a SCAQMD fund that would be used to implement emission reduction projects to reduce a project's regional and/or local impacts.

Update SCAQMD CEQA Mitigation Guidelines

Encourage net-zero developments, clean construction policies, installation of charging/fueling infrastructure, etc.

Warehouses

- Governing Board directed staff to pursue ISR
  - Staff also directed to conduct economic impact study of a potential rule
- Staff conducted extensive outreach to the warehouse industry to better understand the varied and complex business models within the industry

Warehouses have varying control over trucks visiting their facility

Variable relationship between cargo owners, warehouse operators, and warehouse owners

Warehouse ISR – Key Constraints

"We want a strong ISR, with zero emissions."

Truck Emissions Must Be Reduced

"Warehouses don't control trucks."

Air District Does Not Have Authority To Directly Regulate Private Trucks

Overview of Proposed Warehouse ISR

Applicability

- Owners and operators of warehouses ≥100,000 sf
  - Owners are only subject to reporting, but they can voluntarily earn points
  - Operators only leasing <50,000 sf for warehousing activities are just subject to limited reporting

Requirements

- Earn WAIRE Points Annually
  - Warehouse Actions and Investments to Reduce Emissions (WAIRE) Menu
  - Mitigation Fee
  - Custom WAIRE Plan
  - Limited transferring/banking with early or over-compliance
- Reporting
  - Warehouse Operations Notification
  - Initial Site Information Report
  - Annual WAIRE Report

Draft WAIRE Menu *(version 10/9/2020)*

Action/Investment	Action/Investment Details	Reporting Metric	Annualized Metric	WAIRE Points per Annualized Metric	Discounted WAIRE Points Subparagraph (d)(6)(A)
Acquire ZE/NZE Trucks in Warehouse Operator Fleet	ZE Class 8	Number of trucks	One truck acquired	126	126
	ZE Class 4-7			68	68
	ZE Class 2b-3			14	14
	NZE Class 8			55	55
	NZE Class 4-7			26	26
ZE/NZE Truck Visits	ZE Class 8	Number of visits	365 truck visits	51	33
	ZE Class 4-7			12	9
	ZE Class 2b-3			9	6
	NZE Class 8			42	24
	NZE Class 4-7			12	9
Acquire ZE Yard Truck		Number of yard trucks	One yard truck acquired	177	177
Use ZE Yard Truck		Hours of use	1,000 hours	291	51
Install Onsite ZE Charging or Fueling Infrastructure	Level 5 EVSE Purchase	Number of EVSE purchased	One EVSE purchased	118	118
	Level 4 EVSE Purchase			51	51
	Level 3 EVSE Purchase			26	26
	Level 2 EVSE Purchase			5	5
	TRU Plug EVSE Purchase			3	3
	Begin construction on Level 3, 4, or 5 charger project	First day of construction	One construction project	9	9
	Begin construction on Level 2 charger project			9	9
	Begin construction on TRU Plug project			5	5
	Finalize Level 3, 4, or 5 charger project	The latter of final permit sign off or charger energization	One construction project	59	59
	Finalize Level 2 charger project			9	9
	Finalize TRU Plug project			7	7
	Hydrogen (H_2) Station	Daily capacity of station in kilograms (kg)	One 700 kg/day station construction project	1,680	1,680
Use Onsite ZE Charging or Fueling Infrastructure	Vehicle Charging	Kilowatt-hours (kWh) of dispensed electricity	165,000 kWh	42	24
	TRU Charging		10,658 kWh	10	3
	H_2 Station Usage	Kg of dispensed H_2	6,152 kg	43	25
Install Onsite Solar Panels	Rooftop	Size of system in kW	100 kW system	23	23
	Carport			27	27
Use Onsite Solar Panels		Energy production in kWh	165,000 kWh	2	2
Install High-Efficiency Filters or Filter Systems in Residences, Schools, Daycares, Hospitals, or Community Centers	Install Stand-Alone System	Number of systems installed	25 systems	55	55
	Install Filters	Number of filters installed	200 filters	51	51

Additional Details on Warehouse ISR

- WAIRE Mitigation Program will be administered by South Coast AQMD and funded by warehouse operators choosing to pay mitigation fee
  - Program will provide incentivize funds for zero and near-zero emissions trucks and zero emissions charging/fueling infrastructure for the communities near the warehouse that paid the mitigation fee
- Compliance information reported by facilities will be made available publicly on South Coast AQMD website
- WAIRE Program Implementation Guidelines will accompany PR2305 and will provide additional details on compliance procedures

Rule Development Process

- Additional information available here:
  www.aqmd.gov/fbmsm and
  www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules

- Board consideration anticipated late 1st quarter 2021

Railyards

- Proposed Indirect Source Rule (ISR) for Locomotives
  - CARB & South Coast AQMD jointly held community workshops to discuss concepts to reduce emissions from locomotives and railyards (Nov. & Dec. 2019)

Differing Authorities

US EPA	• Can regulate locomotive engine emission standards
CARB	• Can regulate locomotive activities within California
South Coast	• Indirect source authority

Railyard Proposed Concepts

CARB Concepts

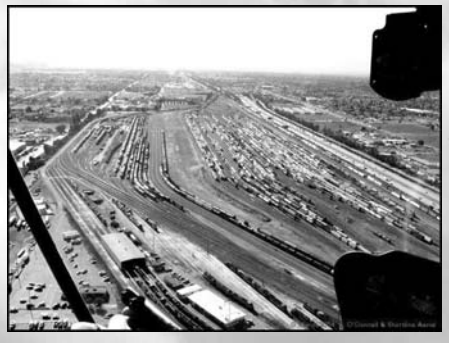
1. Establish a Locomotive Emissions Reduction Spending Account
   - ❖ Funding provided by railroads
2. In-Use Locomotive Remanufacture Limit
   - ❖Would allow only one remanufacture using older engine technologies
3. Adopt U.S. EPA 30 Minute Idling Limit
   - ❖Provide local enforceability
4. Genset Repurposing
   - ❖Replace older switchers at smaller railroads with cleaner, used switchers from BNSF/UP

South Coast AQMD Concepts

1. ISR to reduce exposures from locomotive maintenance and service emissions
2. Require facility-specific engineering plans for zero emissions operations
3. New incentive program focused on cleanest locomotive use over replacement
4. Evaluate new monitoring approaches for in-use locomotives

Railyard Next Steps

- CARB proceeding with rulemaking, planning on 2022 adoption
- South Coast AQMD targeting bringing rule to the Governing Board Summer 2021



Zero Emissions Charging Infrastructure

AGENDA ITEM #5

Background

- CARB Mobile Source Strategy ZE vehicles/equipment in South Coast:
  - Off-road: ~90,000 (mostly TRUs)
  - On-road: ~7,000,000 (LD), ~85,000 (MD), ~175,000 (HD)
- Four key fueling challenges for ZE vehicles/equipment
  1. Fueling locations (quantity, locations, plug standards, etc.)
  2. Fuel supply (adequate quantity, resiliency, electrical grid impacts, etc.)
  3. Fuel prices (cost relative to alternatives, price stability, etc.)
  4. Scaling up fueling infrastructure (customer vs. public needs, fuel type, etc.)

Many Statewide and Regional Entities Working on ZE Infrastructure

... and more

What is South Coast AQMD Doing to Improve the ZE Infrastructure Ecosystem?

- Developing Indirect Source Rules for Warehouses and Rail Yards that include specific components on ZE infrastructure
- Working with Energy Commission to develop energy demand forecast that includes ZE vehicles at a scale needed to meet air quality attainment standards
- Funding projects that include ZE infrastructure
- Address infrastructure needs in 2022 AQMP

Next Steps

- ZE infrastructure discussions included within mobile source working groups
- Separate working groups possible as part of 2022 AQMP development focusing solely on ZE infrastructure
- Contact:
  Ian MacMillan, imacmillan@aqmd.gov
  (909) 396-3244

Contact Information

2022 AQMP
AQMPteam@aqmd.gov

General inquiries on 2022 AQMP Mobile Source Working Groups
AQMPMobileSources@aqmd.gov

General inquiries on CARB's 2020 Mobile Source Strategy
MSS@arb.ca.gov