



2020 Mobile Source Strategy

Public Webinar May 6, 2021

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Interpretation



Zoom Webinar Details

- Telephone Call-in: (888) 273-3658
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Today's Webinar

- Background & Purpose
- Scenarios & Concepts
- Near-term Strategies & Benefits in Priority Communities
- The Need to Reduce Vehicle Miles Travelled
- Pathways Forward
- Online META Tool Demonstration



Background & Purpose



California's Air Quality and Climate Goals





Importance of Mobile Source Emissions



CARB



Executive Order N-79-20



2020 Mobile Source Strategy

- Builds on 2016 Mobile Source Strategy
- Conceptual scenario approach
- Identifies technology mixes needed to meet toxics, air quality and climate targets
- Reflects Governor's recent ZEV EO
- Informs policy development





2020 MSS Informs Development of Other CARB Efforts



Evolution of a Concept





2020 MSS Scenarios & Concepts



What is an MSS Scenario?

- Top-down approach
- Mix of vehicle technologies that would provide the level of emissions reductions needed to meet our goals
- May go beyond levels of clean technologies from current regulatory proposals



On-Road Heavy-Duty Vehicle Scenario



Technology Mixes in a Nutshell



Passenger Vehicles: 100% ZEV and PHEV sales in 2035, along with ~25% reduction in statewide VMT per capita by 2035 relative to 2005



Heavy Duty Vehicles: 100% CA fleet purchases being ZEV starting in 2035 combined with cleaner combustion (Omnibus, HD I/M, EPA CTI) in near term



Smaller Off-Road (e.g., forklifts, TRU, SORE): Full transition to zero-emission by 2035 for most off-road sectors with smaller engines.



Heavier Off-Road (e.g., marine, construction, locomotive): Zero-emission wherever feasible, and cleaner combustion engines along with low-carbon fuels in hard-to-electrify sectors



Potential Statewide Benefits 2020 Mobile Source Strategy April 2021 Revised Draft



Important to Prioritize Benefits in Low-Income and Disadvantaged Communities



- Disadvantaged communities and people of color are disproportionately affected by both mobile and stationary source pollution
 - MSS concepts can reduce emissions in these communities
 - Seeks rapid transition to zero-emission technology in and near communities
 - Supports AB 617 strategies & provides opportunities to accelerate benefits in priority communities



Near-term Strategies & Benefits in Priority Communities



On-Road Measures Helping Near-Road Communities

Provides significant benefits for all communities near major roadways





ARB

- Aggressive transition to zero-emission technology and cleaner combustion for gasoline and diesel engines in 2026 through Advanced Clean Cars II
- Reduce Vehicle Miles Travelled (VMT)

Trucks and Buses

- Aggressive transition of California truck fleets to zero-emission in 2023 through Advanced Clean Trucks and Fleets regulations
- Cleaner combustion trucks in 2024 through HD Omnibus and heavy-duty smog check program starting in 2023

First Phase of Heavy Duty Inspection & Maintenance

- Real-time emissions monitoring equipment with ALPR cameras to identify high emitting vehicles
- High emitters would be required to demonstrate compliance via testing mechanisms



Implementation: 2023

Implementation: 2023

Advanced Clean Fleets Regulation

- Phase-in zero-emission trucks and buses 2023 to 2045*
 - State and local government fleets
 - High priority private fleets and federal agencies
 - Drayage trucks serving ports and railyards
- Contribute to meeting zero-emission fleet goals where feasible
- Prioritize benefits in disadvantaged communities
- First hearing December 2021

ARB

*Applies to on-road vehicles with a gross vehicle weight rating >8,500 lbs. and off-road yard tractors







Off-Road Measures Helping Near-Port Communities

- Ocean-Going Vessels
 - Reduce emissions during at berth
- Commercial Harbor Craft
 - Accelerated turnover to cleanest combustion
 - Zero-emission requirements
 - o Renewable fuel
- Cargo Handling Equipment & Drayage Trucks
 - Transition to zero-emission technology through Advanced Clean Fleet and Cargo Handling Equipment Regulations







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Commercial Harbor Craft

- **Rule Concepts:**
 - Turn over to cleanest engines and retrofit with DPF, starting in 2023
 - Zero-emission capabilities for new excursion vessels 0
 - In-use short run ferries become zero-emission by 2028 (9% of ferries) 0
 - 100% renewable diesel beginning in 2023 0





New Measure

Cargo Handling Equipment

Potential Regulatory Concepts

- Phase-out of dirtiest engines (pre-Tier 4) by 2031
- Begin transition to full electric operation around 2024



Off-Road Measures Helping Communities Near Industrial Facilities & Warehouses

- Small Off-Road Engines, Forklifts & Transport Refrigeration Units
 - Zero-emission requirements
- Locomotives
 - Accelerated turnover to cleanest combustion
 - Idling and remanufacturing limit
- Construction, Industrial & Mining
 - Cleaner off-road engine standards
 - Replace dirtiest vehicles with cleanest available technology









In-Use Locomotives Regulation

- Rule Concepts:
 - Spending account: fee structure based on engine Tiers & activities (MW-hr)
 - Limit the useful life of locomotives and number of times they can be remanufactured
 South Coast Locomotive NOx Emissions



Construction, Industrial & Mining

Potential Concepts:

- Retiring and replacing dirtiest equipment (Tier 0/1/2) by 2033
- Tier 5 implementation starting in 2028



Potential Near-term NOx Reductions (tons per day)

Measures	Adoption	Implementation	South Coast 2023	San Joaquin Valley 2024	South Coast 2031
Advanced Clean Cars II	2022	2026	0	0	3.2
ACT and HD Omnibus	2020	2024	<0.1	<0.1	7
U.S. EPA CTI	2021	~2027	0	0	4
Heavy-Duty I/M	2021	2024	3.5	11	18
Zero-Emission Drayage and Advanced Clean Fleet*	2021	2023	0	<0.1	6-10
Ocean Going Vessels At Berth	2020	2024	1.1	<0.1	3.6
Small Off-Road Engines	2021	2024	0	<0.1	2.8
Transport Refrigeration Unit	2021	2024	0	<0.1	0.4
In-Use Locomotive*	2022	2024	0	0.4	7
Commercial Harbor Craft*	2021	2023	0.9	<0.1	2.9
Zero-Emission Forklift	2022	2025	0	0	3.7
Cargo Handling Equipment*	TBD	TBD	0.1	<0.1	0.9
Construction & Mining*	TBD	TBD	<0.1	<0.1	3.4
TOTAL			5.6	11.4	63-67

* **New measures** – not part of 2016 State SIP Strategy



Questions?

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https://ww2.arb.ca.gov/resources/documents/2020-mobile-source-strategy



The Need to Reduce Vehicle Miles Travelled (VMT)



Beyond ZEVs: The Need to Reduce VMT

Complete communities lead to better public health outcomes

Conversion of natural and working lands for development impedes California's ability to store carbon

Even under EO N-79-20, 30 percent of cars will still burn gasoline in 2045

Lack of affordable housing and transportation options reinforces racial and economic injustices and lengthens commutes





Purpose of the MSS VMT Section

- The MSS identifies concepts <u>CARB</u> could take under its authority to reduce VMT
- Represents a waypoint in a broader interagency and stakeholder process that lies ahead
 - The 2022 Climate Change Scoping Plan Update will identify a broader set of actions across State government, including specific actions CARB can take
 - Next steps will be outlined in more detail later in this presentation



Equity

"New highways were frequently constructed through predominately Black, Latino, Asian, and low-income neighborhoods to meet the needs of primarily white suburban commuters, and through tribal lands" while other "racist policies and decisions also influenced the siting of other types of transportation infrastructure, such as commuter railways, and the delivery of transit services."

California Transportation Commission, Equity Statement



Partnerships

- Successfully reducing VMT needs partnership across all levels of government using multiple policy levers
- On-going and upcoming collaborations
 - Climate Action Plan for Transportation Investments (CAPTI)
 - CARB-CTC-HCD Joint Meetings
 - State-MPO Working Group

- State's Housing and Transp. Coordination Working Group
- Transportation Research Roundup Group





Strategy Area 1: Increase Transportation Choices and Improve Access

 Identify community needs, fund transportation choices to meet those needs, and reduce barriers to transit

Strategy Area 2: Authorize and Implement Equitable Pricing of Transportation

 Collaborate with other agencies in developing an equitable pricing strategy





Strategy Area 3: Align State Funding Programs to Reduce VMT and GHGs

 Develop tools that help advance transportation project selection and planning to better align with climate and equity goals





Strategy Area 4: Shape the Deployment of New Mobility in Ways That Reduce VMT

 Continue and expand regulations to help support an expanding ZEV market and an efficient transportation system





Strategy Area 5: Better Align Land Use with the Scoping Plan's Goals

• Update SB 375 to incentivize SCS implementation, and update guidance to better connect state climate, transportation, and conservation goals with regional planning

Strategy Area 6: Accelerate Infill Housing Production

 Study and explore infill housing barriers and potential state solutions, increase outreach, and develop tools to improve alignment of housing, transportation and climate goals







Strategy Area 7: Support Local and Regional Partners to Implement VMT Reduction Measures

 Work with state and regional agencies to support the development of a statewide VMT mitigation bank

Strategy Area 8: Elevate Science to Inform Sustainable Community & Transportation Policies

 Develop a Sustainable Transportation and Communities Research Roadmap to support CARB and other agencies' efforts related to transportation, housing, and land use



Pathways Forward



Achieving Air Quality and Climate Goals Requires Multiple Tools



CARB Continues to Push Forward

- CARB continues to look for new control strategies in all mobile sectors
- New regulatory concepts have been identified
- Work will continue to develop concepts with ongoing public and stakeholder feedback



Timing and Integration



Next Steps on the 2020 MSS

Incorporate Public Feedback	May 2021	
Review Period	June – August 2021	
Release & Board Consideration of Final 2020 Mobile Source Strategy	September 2021	



Contact us!

- Comments on the Revised Draft 2020 MSS: <u>MSS@arb.ca.gov</u>
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Demonstration:

Mobile Emissions Toolkit for Analysis (META)

https://arb.ca.gov/emfac/meta/



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