CALIFORNIA AIR RESOURCES BOARD

2020 Mobile Source Strategy Fact Sheet

April 2021

What is the Mobile Source Strategy (MSS)?

The MSS is a strategy document that looks at existing and emerging technologies to reduce emissions from California's transportation sector. This includes cars, trucks, trains, ships, construction and freight movement equipment, airplanes, and all other on-road and off-road vehicles. The strategies laid out in the MSS are intended to achieve emission reductions statewide and are expected to have significant benefits in communities that are disproportionately impacted by poor air quality.

The MSS is not a regulatory document itself, it is a strategy document that illustrates the technology mixes needed for the State to meet its various clean air goals including federal ambient air quality standards, community risk reduction, and ambitious mid- and long-term climate change targets.

This document will inform future State Implementation Plan (SIP) strategy, Scoping Plan, community risk reduction plans, state and local incentive programs, and California Air Resources Board (CARB) regulations. Some of the recommendations can be enacted by CARB, but others require actions at federal and international level.

What technologies and strategies did the MSS focus on?

Consistent with Governor Newsom's Executive Order N-79-20, the technology pathways laid out in the MSS are focused on zero emission technology wherever feasible, the next generation of cleanest combustion technologies where zero emission was not feasible (e.g., off-road sectors where full zero emission will likely take longer to achieve), combined with efficiency improvements to reduce greenhouse gas (GHG) emissions, and accelerating turnover of older and dirtier engines.

What strategies does the MSS rely on?

The MSS presents technology pathways for each mobile source vehicle/equipment category. Considering that many of these sources are often operated at or near highly-populated and disadvantaged communities, the technology pathways in MSS will have direct benefits in these communities, and also contribute to reducing regional air pollution like smog.

Cars and Trucks

Low-income and disadvantaged communities are more likely to be located near major roadways. Transitioning cars, trucks, and buses operating on California's roadways to zero emission and reducing their vehicle miles traveled (VMT) would significantly reduce emissions at regional and local levels especially in communities located near heavily traveled roadways.

Passenger Vehicles: Zero Emission Requirements and VMT Reduction

- More aggressive zero emission sales requirements and strengthened pollutant controls for gasoline and diesel engines starting in 2026
- VMT reduction through increased transportation choices and access, alignment of state funding programs and land use planning with climate goals, and accelerated infill housing production

Trucks and Buses: Zero Emissions and Cleaner Combustion In-Use

- Accelerate the transition of California truck fleets to zero emission technology starting in 2023 through both manufacturer and fleet requirements
- Clean combustion engines starting in 2024 along with a smog check program for heavy-duty vehicles to ensure clean in-use operation starting in 2023

Near-Port Emission Sources

Most major sources of diesel emissions, such as trucks, ships, commercial harbor craft, and cargo handling equipment operate in and around ports which are often located near highly-populated and disadvantaged communities. The following concepts are intended to address local pollution and long-standing environmental justice concerns for communities near ports.

Drayage Trucks: Zero Emission Requirements

- Starting in 2023 only zero emission trucks can be added to drayage truck fleets with a requirement for all drayage trucks to be zero emission by 2035

Ocean-Going Vessels: Cleaner Marine Engine Standards and Cleanest Vessel Visits Requirements

- Encourage the cleanest vessels possible visit California ports starting in 2023
- Introduce cleaner marine engine standards (federal and international action needed) in late 2020s

Commercial Harbor Craft: Clean Combustion, Renewable Fuel and Zero Emission Requirements

- Replace older and dirtier vessels with cleanest vessels by 2031
- Zero emission or hybrid technology requirements for certain vessel types like ferries and excursions as well as use of renewable diesel for all vessels

Cargo Handling Equipment: Zero Emission Requirements

- Full transition to zero emission equipment starting in 2026 at ports and railyards

Commercial/Industrial & Warehouse Emission Sources

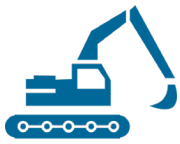
Commercial, Industrial, and freight facilities such as warehouses and railyards are hubs for diesel equipment (e.g., locomotives, transport refrigeration units, and construction equipment) that emit toxic emissions. The following concepts are intended to reduce emissions from these sources, and improve public health in near-by communities.

Small Off-Road Engines, Forklifts, and Transport Refrigeration Units: Zero Emission Requirements

- Full transition to zero emission equipment starting in 2024
- 100% of lawn & garden and light commercial equipment (e.g., pressure washers) sales being zero emission starting 2024
- Full transition to zero emission transport refrigeration units by 2033

Locomotives: Accelerated Turnover to Cleanest Combustion

- Replace old locomotives with cleanest ones starting in 2024
- Limit idling time and remanufacturing to reduce in-use emissions in 2030
- Introduce cleaner locomotive engines (U.S. EPA action needed) in late 2020s



Construction, Industrial & Mining: Replace Dirtiest Vehicles with Cleanest Available Technology

- Replace older and dirtier equipment with cleanest ones by 2033
- Cleaner off-road engine emission standards in 2027
- Zero emission and hybrid requirements in late 2020s

Other Emission Sources

In addition to near-port, industrial, and freight facilities, the Mobile Source Strategy includes concepts to reduce emissions from other mobile sources such as recreational boats, as well as aircraft. Reducing emissions from these sources are essential for improving air quality especially in communities experiencing high levels of local and regional air pollution.

Recreational Boats: Cleanest Combustion and Zero Emission Requirement

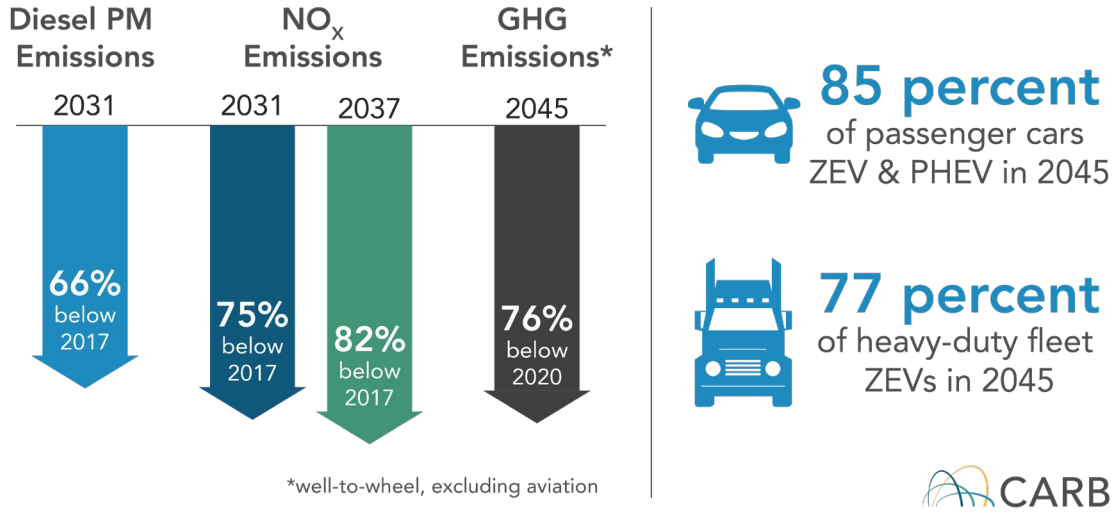
- New emission standards along with electrification of small outboard and personal watercraft engines

Aircraft: Cleaner Engines, Efficiency Improvements and Zero Emission Operation

- Require cleaner aircraft visiting California's airports
- Improve aircraft operational efficiency during landing and takeoffs
- Transition to zero emission auxiliary power units that provide electrical power when the main engines are off

What could the MSS achieve?

- Technology mixes laid out in the 2020 Mobile Source Strategy can achieve significant criteria, toxics, and greenhouse gas emission reductions along with accelerated transition to zero emission technologies across the transportation sector with a major focus on low-income and disadvantaged communities
- By 2031, the Mobile Source Strategy scenarios may result in statewide emissions reduction of 66 percent of diesel particulate matter (diesel PM) and 75 percent of nitrogen oxide (NOx) emissions below 2017 levels



What are the next steps?

- Technology mixes laid out in the 2020 Mobile Source Strategy will serve as the foundation for development of mobile source measures needed for the 2022 State SIP Strategy, future SIPs, Scoping Plan, as well as community emission reduction plans
- At the community level, CARB will explore various mechanisms to implement or fund these strategies in an accelerated timeline especially in the communities most impacted by air pollution
- Building on the 2020 Mobile Source Strategy, staff will release a draft version of the 2022 State SIP Strategy document which will detail regulatory and incentive measures that CARB is recommending for meeting its various clean air goals. The technology pathways laid out in the 2020 MSS will serve as the blueprint for the development of these measures.