CALIFORNIA AIR RESOURCES BOARD

Freight Emissions Reduction Programs

California's growing freight sector drives congestion and poses serious health risks to California communities. The fossil fuels that power freight-related mobile sources account for nearly 50 percent of statewide NOx emissions, a precursor to the formation of ozone, smog, and PM2.5, a fine particulate linked to heart and lung disease, as well as asthma, and premature death. Diesel engines, used heavily in freight applications have high emissions of PM2.5, and diesel particulate matter, which contains black carbon and known carcinogens. Diesel particulate matter is responsible for nearly 70% of air toxics-related cancer risk in California, with impacts concentrated near ports, rail yards, and highways, disproportionately impacting nearby communities. Freight-related sources are also the largest contributor of greenhouse gas emissions in the state.

Under the Governor's Zero-Emission Executive Order N-79-20, California is committed to reducing emissions from the freight sector to the greatest extent possible, by incentivizing zero technology where feasible across major freight hubs, including seaports. The California Air Resources Board is developing and implementing regulations to reduce emissions from a wide range of freight sources.

California's ongoing efforts include:

Actions on Trucks

- Accelerating adoption of zero emissions medium and heavy-duty trucks.
- Requiring manufacturers to produce and sell a growing percentage of zero emissions trucks.
- Setting new engine standards to reduce NOx for heavy-duty combustion engines.
- Clean Truck Check program ensures emission control systems on heavy-duty vehicles work properly for the life of the vehicle.

Actions on Transport Refrigeration Units or TRU's

- Imposes stricter diesel particulate emissions limits for new TRUs.
- Requires use of refrigerant with a low global warming potential or no refrigerant at all.

Actions on Locomotives

- Exploring new strategies for reducing locomotive emissions.

Actions on Cargo Handling Equipment

- Impacts equipment such as yard trucks, cranes, container handlers, and forklifts at seaports and intermodal railyards.
- Fully implemented in 2017, commercial cargo handling equipment regulations have significantly reduced emissions
- Assessment of stricter emission control technology is underway for a potential future rulemaking.

Actions on Commercial Harbor Craft

- Requires new short-run ferries and excursion vessels to be zero emissions or hybrid powered.
- Most other commercial harbor craft must use the cleanest certified engines equipped with a diesel particulate filter.
- Requires use of renewable diesel and shore power at dock.

Actions on Ocean-Going Vessels

- Existing regulations require reducing NOx, PM, and reactive organic gases from vessel auxiliary engines and tanker boilers while docked at ports and terminals.
- Existing fuel regulation requires use of cleaner low-sulfur distillate fuels.
- Considering future measures to achieve emission reductions from ocean-going vessels while transiting, maneuvering, or anchoring in California waters.

Actions on Aviation

- Exploring ways to reduce emissions from aircraft and airport operations, including:
  - Lower or zero-emission taxiing, reducing emissions from landings and takeoffs, and limited use of auxiliary power units.
  - Encouraging increased use of zero emissions ground support equipment for functions like power supply, transporting cargo, and providing maintenance and fueling.
  - Encouraging use of zero emissions passenger shuttles at airports.