

Railyard Equipment

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This fact sheet describes the basic equipment found in a railyard and the California Air Resources Board's (CARB or Board) actions to promote the transition to zero-emission technology and operations, as directed by Governor Newsom's "Zero-Emission by 2035" Executive Order (N-79-20).

What are Locomotives?

Locomotives are self-propelled vehicles used to push or pull rail cars. Typical freight and passenger locomotives are powered by a diesel engine and are measurably large contributors to diesel



particulate matter (PM), nitrogen oxide (NO_x), and greenhouse gas (GHG) emissions in California. Locomotive emissions from the largest freight railroads (Class I) emit about 80 percent of NO_x and PM produced by all locomotives in the State. These emissions often occur in or near densely populated areas and disadvantaged communities.

Actions to Reduce Emissions from Locomotives: CARB anticipates bringing an In-Use Locomotive Regulation for Board consideration in early 2022 to address emissions from passenger and freight locomotives (Class I, Class III, and industrial locomotives). The in-use locomotive regulatory concept encourages a more rapid transition to cleaner technology including zero-emission technologies. Staff also continues to petition EPA for cleaner locomotive engine standards (Tier 5).

For more information, please visit the [Locomotives webpage](#) or for questions, please contact: freight@arb.ca.gov

What are Drayage Trucks?

Drayage trucks are on-road, diesel-fueled, heavy-duty trucks that transport containers and bulk cargo to and from the seaports and intermodal railyards, as well as many other locations. The current drayage regulation was adopted in 2007 to reduce PM and NOx emissions from diesel-fueled engines, improving air quality and reducing public exposure to drayage truck emissions.



Actions to Reduce Emissions from Drayage Trucks: As part of the suite of actions to minimize health impacts from freight, staff are developing zero-emission drayage truck requirements to be included in the Advanced Clean Fleet Regulatory concept scheduled for Board consideration in December 2021. The current concept will require all Class 7 and 8 drayage trucks operating at intermodal seaports or railyards to transition to be fully zero-emissions by 2035.

For more information, please visit the [Drayage Trucks webpage](#) or for questions, please contact: freight@arb.ca.gov

What are Truck Fleets?

Trucks are on-road, medium- and heavy-duty vehicles with a gross vehicle weight rating (GVWR) of 8,501 pounds or more and contribute towards California's PM and ozone levels, especially in the San Joaquin Valley and South Coast regions of the State. Truck fleets represent about half of the transportation sector's NOx emission and about 21 percent of transportation's GHG emissions.



Actions to Reduce Emissions from Truck Fleets: CARB is proposing an Advanced Clean Fleet Regulatory concept scheduled for Board consideration in December 2021. The concept aims to transition truck fleets to zero-emission by 2045 everywhere feasible, with an initial focus on high priority fleets with the greatest emission impact.

For more information, please visit the [Trucks Fleets webpage](#) or for questions, please contact: zevfleet@arb.ca.gov

What are TRUs?

Transport refrigeration units (TRU) are refrigeration systems powered by diesel engines and are designed to refrigerate or heat perishable products. They are used to transport temperature-sensitive products in various containers, including insulated trucks, trailers, shipping containers, and railcars and often gather in large numbers at facilities. TRUs contribute towards NOx and fine particulate matter (PM2.5) emissions.



Actions to Reduce Emissions from TRUs: CARB is developing amendments to the TRU Airborne Toxic Control Measure to transition truck TRUs to zero-emission, impose a stricter diesel PM emission standard for newly-manufactured TRUs, and require the use of lower global warming potential refrigerant. The amendments are scheduled to be considered by the Board in the fall of 2021.

For more information, please visit the [Transport Refrigeration Units webpage](#) or for questions, please contact: freight@arb.ca.gov

What are Forklifts?

Forklifts are a type of CHE used in various industry sectors and are prevalent at freight facilities, such as warehouses, distribution centers, ports, and railyards. They are classified as mobile, off-road sources and may be powered by internal combustion engines that use diesel, propane, gasoline, and other fuels as well as by battery-electric and fuel cell powertrains. Forklifts contribute to ozone-precursor, PM2.5, diesel PM, and GHG emissions in the State.



Actions to Reduce Emissions from Forklifts: CARB is developing a measure to accelerate the deployment of zero-emission technology in forklifts. The proposed measure is scheduled for Board consideration in early 2022.

For more information, please visit the [Forklifts webpage](#) or for questions, please contact: zeforklifts@arb.ca.gov

What is Mobile Cargo Handling Equipment (CHE)?

CHE includes mobile, off-road, motorized vehicles used at ports and intermodal railyards to either handle freight or to perform other on-site activities, such as maintenance. The different equipment types include but are not limited to yard trucks (hostlers), rubber-tired gantry cranes, container handlers, reach stackers, and forklifts. Mobile CHE is a source of diesel PM emissions in communities near ports and intermodal railyards.



Actions to Reduce Emissions from CHE: The Board adopted the Mobile Cargo Handling Equipment Regulation in 2005, which regulated diesel-fueled CHE at ports and intermodal railyards. CARB is developing amendments for the regulation to require transition to zero-emission technology, which the Board is scheduled to consider in 2023.

For more information, please visit the [Cargo Handling Equipment webpage](#) or for questions, please contact: cargohandling@arb.ca.gov