

State of California Air Resources Board

Board Item Summary

Item # 23-4-1: Public Hearing to Consider the Proposed In-Use Locomotive Regulation

Staff Recommendation:

Staff recommends that the California Air Resources Board (CARB or Board) approve the proposed resolution, which adopts the In-Use Locomotive Regulation (Proposed Regulation). The Proposed Regulation will reduce toxic air contaminants, criteria pollutants, and greenhouse gas emissions from in-use locomotives. This hearing is the second of two public hearings on this item. The first public hearing was held on November 18, 2022, when staff first presented the Proposed Regulation. Pursuant to Board direction at the first public hearing, staff proposed modifications to the original proposal and noticed those modifications for a 15-day public review and comment period. At the April 27, 2023 hearing, staff will present the revised proposal for Board consideration.

Discussion:

Locomotives operate throughout California at seaports, railyards, and other locations near where people work and live. Locomotives emit multiple air pollutants, including diesel particulate matter, fine particulate matter (PM_{2.5}), oxides of nitrogen (NO_x), and greenhouse gases (GHG). Exposure to toxic and harmful diesel emissions is known to lead to cancer and increases in asthma, heart illness, lung illness, hospitalizations, and premature death. Disadvantaged communities are often more affected by these emissions because of their close proximity to where locomotives are operated. Additionally, the Proposed Regulation is a key measure in the 2022 State Implementation Plan (SIP) Strategy for meeting National Ambient Air Quality Standards and contributes to satisfying Executive Order N-79-20.

The Proposed Regulation is the result of an extensive public process. Staff conducted four public workshops to discuss regulatory concepts, methodology, infrastructure considerations, and data used to develop the Proposed Regulation, as well as to solicit feedback. As of January 2023, staff conducted more than 330 informal meetings with members of impacted communities, environmental justice advocates, air districts, locomotive operators, locomotive manufacturers, locomotive leasing companies, and other interested parties to discuss the Proposed Regulation and gather input and information. Staff has included provisions that provide compliance flexibility to address concerns related to technology readiness and infrastructure availability. Staff also worked with California's passenger operators, as directed by the Board at the November 18, 2022, Board Hearing, to transition to zero emission (ZE) operations, increase ridership, and minimize repayment of public grant funds. In addition, the Proposed Regulation includes periodic assessments to monitor the implementation of the Proposed Regulation, including progress made in ZE locomotive technologies and associated infrastructure, and monitor locomotive idling times. The report may recommend potential

amendments when warranted to resolve any implementation problems that may arise or to provide additional emission reduction opportunities, such as a reduction in idling time, if data support such actions.

Summary and Impacts:

The Proposed Regulation would apply to all switch, passenger, industrial, and freight line haul locomotives operated in California. To address locomotive pollution, the Proposed Regulation would:

- Require locomotive operators to set aside money for cleaner locomotives and technology development.
- Incentivize early ZE operation in disadvantaged communities.
- Starting in 2030, require locomotives operating in California to be less than 23 years old to phase out the oldest and dirtiest locomotives.
- Establish ZE operational requirements for locomotives operating in 2030 and later.
- Require a 30-minute idling limit.
- Require air district-specific reporting of California locomotive activity.

Staff estimates that cumulatively, from 2023 to 2050, the Proposed Regulation will reduce emissions by over 7,300 tons of PM_{2.5}, 386,200 tons of NO_x, and 21.6 million metric tons of GHGs, relative to the baseline. These emission reductions will benefit California residents by:

- Reducing cancer risk to individual residents and workers near locomotive operations, including those located in and near disadvantaged communities.
- Improving air quality from reductions in PM and NO_x.
- Providing GHG emission reductions needed to combat climate change.
- Reducing non-cancer health impacts such as premature deaths, hospital visits for cardiovascular and respiratory illnesses, and emergency room visits for asthma, especially in sensitive receptors including children, the elderly, and people with chronic heart or lung disease.

The total statewide valuation of avoided adverse health impacts resulting from the Proposed Regulation from 2024 to 2050 is approximately \$32.0 billion. Emission reductions will also reduce occupational exposure and benefit on-site workers, including, but not limited to, locomotive operators and other individuals who work at facilities where locomotives operate. The total net cost of the Proposed Regulation from 2023 to 2050 is estimated to be \$13.8 billion.

CARB is the lead agency for the Proposed Regulation and has prepared a final environmental analysis (Final EA) pursuant to its certified regulatory program (title 17, CCR, sections 60000 through 60008) to comply with the requirements of the California Environmental Quality Act (CEQA). The Final EA provides a programmatic environmental analysis of an illustrative, reasonably foreseeable compliance scenario that could result from implementation of the Proposed Regulation. For the purpose of determining whether the Proposed Regulation will

have a potential adverse effect on the environment, CARB evaluated the potential physical changes to the environment resulting from a reasonable, foreseeable compliance scenario.

Implementation of the Proposed Regulation could result in the construction and operation of new or expanded manufacturing facilities for zero-emission locomotive technologies (e.g., lithium-ion batteries, fuel cells); the construction of supporting infrastructure, such as electric chargers and hydrogen fueling stations; increased demand for electricity, requiring more electricity generation; the displacement of fossil fuel extraction, refinement, manufacture, distribution, and combustion; new or modified recycling or refurbishment facilities to accommodate battery disposal; and increased demand for the extraction of raw minerals used in the production of batteries and fuel cells, such as lithium and platinum from source countries and states.

The Final EA concluded that implementation of the Proposed Regulation, could result in: beneficial impacts to air quality, GHG emissions and climate change; less-than-significant impacts to air quality, energy demand, energy resources, GHG emissions, land use and planning, mineral resources, population and housing, public services, recreation, and wildfire; and potentially significant adverse impacts to aesthetics, agriculture and forest resources, air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, mineral resources, noise, transportation and traffic, tribal cultural resources, and utilities and service systems. It is expected that many of the potentially significant impacts can be feasibly avoided or mitigated to a less-than-significant level, due to project-specific environmental review processes associated with compliance responses and compliance with local and state laws and regulations. However, the Final EA takes the conservative approach in its post-mitigation significance conclusions (i.e., tending to overstate the risk that feasible mitigation may not be sufficient to mitigate an impact to be less than significant or may not be implemented by other parties) and discloses, for CEQA compliance purposes, that potentially significant environmental impacts may be unavoidable.