

State of California Air Resources Board

Board Item Summary

Item #23-4-2: Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation

Staff Recommendation:

Staff recommends that the California Air Resources Board (CARB or Board) approve for adoption the proposed Advanced Clean Fleets (ACF) Regulation. The proposed ACF regulation is an integral element of CARB's comprehensive strategy to achieve significant reductions of criteria pollutants and greenhouse gases needed to attain federal and state ambient air quality standards, address harms resulting from climate change, meet California's goals to decarbonize the transportation sector, and to protect the public health and welfare. The proposed regulation would primarily require certain fleets to deploy medium- and heavy-duty vehicle ZEVs starting in 2024, and would establish a clear end date to new medium- and heavy-duty internal combustion engine vehicle sales in 2036. This is the second of two public hearings on this item. The first public hearing was held on October 27, 2022, when staff initially presented the proposed regulation.

Discussion:

The proposed regulation is critical to meeting California's public health and climate goals and meeting State and federal air quality standards. Mobile sources are the greatest contributor to emissions of criteria pollutants and greenhouse gases (GHG) in California, representing for about 80 percent of ozone precursor emissions and approximately 50 percent of statewide GHG emissions, when accounting for transportation fuel production and delivery.¹ Medium- and heavy-duty vehicles contribute a quarter of the transportation sector's GHG emissions and a third of the transportation sector's oxides of nitrogen (NOx) emissions, which constitutes a disproportionately high share of NOx emissions, considering such vehicles represent only about 1.8 million trucks among the 30 million registered vehicles in the state.

A number of policy, planning, and regulatory actions have led to the development of the proposed regulation and California's need to accelerate ZEV deployments everywhere feasible. In 2018, the Governor issued Executive Order B-55-18, which set a target to achieve carbon neutrality in California no later than 2045, and to achieve and maintain net negative emissions thereafter. In 2020, Executive Order N-79-20 set specific targets to transition the truck fleet to zero-emission (ZE) technology by 2045. In January 2021, the Advanced Clean Trucks (ACT) regulation was adopted by CARB as a key part of the holistic approach to accelerate the transition of California's medium- and heavy-duty trucks to zero emissions

¹ California Air Resources Board. 2021. "2020 Mobile Source Strategy." Released September 28, 2021. (web link: https://ww2.arb.ca.gov/sites/default/files/2021-09/Proposed_2020_Mobile_Source_Strategy.pdf, last accessed August 2022).

vehicles (ZEVs). The ACT regulation's ZEV sales requirement establishes a growing supply of medium- and heavy-duty ZEVs, while the ACT regulation's one-time fleet reporting requirement provided detailed information about fleets and how they use their vehicles. In October 2021, CARB released the 2020 Mobile Source Strategy, a top-down analysis of policy options and emissions reductions needs, which identified the ACF proposed regulation as a key part of the comprehensive strategy to achieve a ZE truck and bus fleet by 2045 everywhere feasible, and significantly earlier for certain well-suited market segments.²

On September 22, 2022, CARB adopted the State Implementation Plan (SIP) Strategy, which builds on the 2020 Mobile Source Strategy and includes the proposed regulation as a proposed commitment to reduce emissions from On-Road Medium- and Heavy-Duty Vehicles.³ Finally, on December 15, 2022, the 2022 Climate Change Scoping Plan for Achieving Carbon Neutrality was approved and lists the proposed regulation as a necessary policy to achieve climate change goals and includes it in the modeling.⁴

The proposed regulation includes several key components that would primarily require State and local government fleets, drayage trucks, high priority fleets, and federal fleets to phase in medium- and heavy-duty ZEVs, and light-duty package delivery ZEVs, over time. These requirements have built-in flexibilities and exemptions to enable a gradual zero-emission transition for all affected fleets. The proposed regulation would also set a clear end date for new internal combustion-powered medium- and heavy-duty vehicle sales in California.

The proposed regulation is the result of an extensive public process beginning in February 2020. Since then, staff have held 27 public workshops, listening sessions, and workgroups on the rule development and have conducted more than 400 meetings with stakeholders. Staff have conducted outreach to reach more than 400,000 interested parties and impacted communities through mail and emails. Since the October 27 Board hearing, staff have held 3 workshops and dozens of meetings to discuss changes in response to Board direction.

Summary and Impacts:

The proposed regulation is projected to significantly reduce emissions of fine particulate matter (PM_{2.5}), oxides of nitrogen (NO_x), and GHGs from on-road medium and heavy-duty vehicles that operate in California. Staff estimates that cumulatively, from 2024 to 2050, the proposed regulation will reduce statewide emissions of NO_x by 29.3 tons per day, and statewide emissions of PM_{2.5} by 1.8 tons per day; these reductions of harmful air pollutants will result in 2,526 fewer cardiopulmonary deaths; 401 fewer hospital admissions for cardiovascular illness; 478 fewer hospital admissions for respiratory illness; and 1,177 fewer

2 California Air Resources Board, *2020 Mobile Source Strategy*, October 28, 2021 (web link: https://ww2.arb.ca.gov/sites/default/files/2021-12/2020_Mobile_Source_Strategy.pdf, last accessed June 2022).

3 California Air Resources Board, *2022 State Strategy for the State Implementation Plan*, September 22, 2022 (web link: https://ww2.arb.ca.gov/sites/default/files/2022-08/2022_State_SIP_Strategy.pdf, last accessed February 2023).

4 California Air Resources Board, *2022 Scoping Plan Update (ca.gov)*, November 16, 2022 (web link: <https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp.pdf>, last accessed June 2022).

emergency room visits for asthma which will provide significant health benefits for Californians. The emission reductions from the proposed regulation are critical to achieving carbon neutrality by 2045 by reducing cumulative GHG emissions in California from 2024 to 2050 by 339 million metric tons. The proposed ACF regulation would reduce the impacts of trucks that operate near distribution centers, warehouses, and major roadways that are commonly located around densely populated areas, including low-income and disadvantaged communities (DACs). All 19 of the Assembly Bill 617⁵ designated communities throughout the State have identified air pollution from heavy-duty diesel vehicles as a concern. The proposed regulation will directly benefit those communities, through the accelerated deployment of ZEVs.

The direct economic impact of the proposed regulation to California fleets is a net savings of \$48.0 billion, with additional health benefits savings of \$26.5 billion, and social cost of carbon savings ranging from \$10.3 billion to \$40.3 billion. Staff's total cost of ownership analysis shows some truck types are already at cost parity, with more truck types anticipated to achieve parity in the total cost of ownership with their combustion vehicle counterparts over the coming decade. The proposed regulation is estimated to result in a cumulative net benefit to California of \$37.9 billion with a benefit-cost ratio of 1.6, meaning benefits are more than costs between 2024 and 2050.

CARB is the lead agency for the proposed regulation and has prepared a Final Environmental Analysis (EA) pursuant to its certified regulatory program⁶ to comply with the requirements of California Environmental Quality Act (CEQA). The Final EA provides a programmatic environmental analysis of an illustrative, reasonably foreseeable compliance scenario that could result from implementing the proposed regulation. CARB also prepared the Response to Comments on the Draft EA, which includes responses to CEQA-related comments received during the first public Board hearing, the 45- day comment period, and the 15-day comment period.

Implementation of the proposed regulation could result in certain impacts, including, but not limited to: the construction and operation of new or expanded manufacturing facilities for ZEV technologies; the construction of supporting infrastructure, such as electric chargers and hydrogen fueling stations; increased demand for electricity and hydrogen fuel and therefore more electricity and hydrogen generation and distribution; the displacement of fossil fuel extraction, refinement, manufacture, distribution, and combustion; new or modified recycling or refurbishment facilities to accommodate battery and fuel cell refurbishment, reuse, and 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 EA concluded implementation of the proposed regulation could result in: beneficial impacts to air quality (long-term operational-related), energy (long-term operational-related), GHG (long-term operational-related); less than significant impacts, or no impacts, to energy

⁵ Garcia, C., Chapter 136, Statutes of 2017.

⁶ Cal. Code Regs., tit. 17, § 60000 through 60008.

(short-term construction-related), and GHG (short-term operational-related), land use planning, mineral resources, population and housing, public services, recreation, and wildfire; and potentially significant [indirect/secondary] adverse impacts to aesthetics, agriculture and forestry resources, air quality (short-term construction-related), biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, noise, transportation/traffic, tribal cultural resources, and utilities and service systems. Many of the impacts recognized as potentially significant in the EA for the proposed regulation could be mitigated or reduced to less-than-significant levels through conditions of approval applied and mitigation measures to project-specific development. However, the authority to apply that mitigation lies with utilities or other agencies approving the development projects, not with CARB. Despite these potential adverse impacts, the proposed regulation is needed to ensure the significant environmental and economic benefits are realized.