

Updated Informative Digest

Proposed Amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation

Sections Affected:

Proposed Amendments to California Code of Regulations (CCR), title 13, sections 2449, 2449.1, and 2449.2.

Documents Incorporated by Reference (Cal. Code Regs., tit. 1, § 20, subd. (c)(3)):

The following documents are incorporated in the regulation by reference:

- American Society for Testing Materials (ASTM) International, 2021. "Standard Specification for Diesel Fuel. Designation D975-21," August 1, 2021, incorporated by reference in 13 CCR section 2449, subdivision (c)(49). Copyrighted.
- U.S. Environmental Protection Agency (U.S. EPA). (2021). 40 Code of Federal Regulations Part 79 – Registration of Fuels and Fuel Additives. July 1, 2021, incorporated by reference in 13 CCR section 2449, subdivision (c)(49).

Background and Effect of the Proposed Regulatory Action:

The purpose of the In-Use Off-Road Diesel-Fueled Fleets Regulation (Off-Road Regulation) is to reduce diesel particulate matter (PM), Oxides of Nitrogen (NO_x), and other criteria air pollutants from in-use off-road diesel-fueled vehicles in California (Cal. Code Regs., tit. 13, § 2449, subd. (a)). The Off-Road Regulation addresses emissions from a wide variety of off-road diesel vehicles, ranging from small skid steer loaders used in residential landscaping to very large mining trucks, dozers, forklifts, cranes, and excavators. These vehicles are often used in construction, mining, industrial operations, and other industries. The existing Off-Road Regulation (Current Regulation) requires fleets to reduce their emissions by retiring older engines and replacing the retired engines with newer engines, repowering older engines, or installing verified diesel emission control strategies in older engines; and by restricting the addition of older vehicles to fleets. The Current Regulation has been effective but is in need of updates as technology continues to advance and California's air quality needs remain serious.

Despite significant improvements in California's air quality over the past decades, major populated regions in California are still not in attainment with the federal national ambient air quality standards (NAAQS) for particulate matter 2.5¹ (PM_{2.5}) and ozone. In addition to emitting PM_{2.5} and NO_x (which is a precursor to ozone), off-road diesel vehicles also emit

¹ PM_{2.5} is fine particulate matter that are 2.5 microns or less in diameter.

diesel PM, which has been identified as a toxic air contaminant (TAC) by the California Air Resources Board (CARB or Board) and poses a significant public health risk, especially at the local level. Action is needed to reduce diesel PM at a statewide level to reduce the health risk throughout California, especially in communities that experience disproportionate burdens from exposure to TACs. The 2022 State Strategy for the State Implementation Plan (2022 State SIP Strategy) commits CARB to taking action on several measures to address these needs for further emissions reductions from the off-road sector, and the Proposed Amendments to the Off-Road Regulation (Proposed Amendments) are identified as one such measure.

The Proposed Amendments, as identified in the 2022 State SIP Strategy, are critical actions needed to achieve further emissions reductions than what can be achieved under the Current Regulation from the off-road sector to meet California's clean air goals. The Proposed Amendments would reduce emissions by requiring fleets to phase out the operation of their oldest and highest-emitting off-road diesel vehicles, prohibiting the addition of high-emitting vehicles to a fleet, and requiring the use of R99 or R100 renewable diesel² in off-road diesel vehicles.

CARB's regulatory programs for new off-road diesel engines are largely harmonized with the United States Environmental Protection Agency's (U.S. EPA) for nonroad diesel engines. Since the mid-1990s, emission standards adopted by U.S. EPA and CARB have required new off-road engines to become progressively cleaner. In developing the standards for new engines, staff worked closely with U.S. EPA to develop harmonized federal and California programs. The emission standards are divided into four increasingly stringent levels (Tiers); the allowed emission level and effective dates vary by horsepower (hp). Until the mid-1990s, off-road diesel engines were not subject to emission standards (commonly known as Tier 0 or "uncontrolled"). Starting in 1996, depending on engine size, the tiered standards began to be phased in. Tier 4 standards are divided into two stages for engines with a maximum rated hp of 25 or greater, interim and final. More information on the implementation years for the off-road compression ignition engine emission standards can be found in Chapter I the Staff Report: Initial Statement of Reasons (ISOR).

Objectives and Benefits of the Proposed Regulatory Action:

Objective

The primary goal of the Proposed Amendments is to reduce emissions of criteria and toxic air pollutants which harm public health, welfare, and the environment in California, to meet federal and State ambient air quality standards. An additional goal of the Proposed Amendments is to maintain a level playing field for compliant fleets conducting business in California and ensure that the projected emissions reductions of both the Current Regulation and the Proposed Amendments are achieved. The Proposed Amendments also aim to support the zero-emission goals outlined in the Governor's Executive Order N-79-20 by providing voluntary compliance pathways that offer compliance flexibility to fleets adopting zero-emission technology, which is critical for expanding zero-emission technology in the off-road sector.

² Fuel that is 99 percent or 100 percent renewable diesel.

Public Rulemaking Process for Development of the Proposed Amendments

Consistent with Government Code sections 11346, subdivision (b), and 11346.45, subdivision (a), and with the Board's long-standing practice, CARB staff held public workshops and other meetings with interested stakeholders during the development of the Proposed Amendments. Input from these workshops and meetings was used to design the proposed action. This extensive public process began in May 2021 and included 3 virtual public workshops, 3 public workgroup meetings, and over 30 individual meetings with stakeholders upon request to gather additional information and feedback during the development of the Proposed Amendments. Staff also established the Proposed Amendments email address, ordamendments@arb.ca.gov, so that the public could reach out to CARB staff at any time.

Benefits

Cumulatively, from 2024 through 2038, the Proposed Amendments are expected to reduce statewide emissions from off-road diesel-fueled vehicles by approximately 31,069 tons of NO_x and 2,711 tons of particulate matter (PM) beyond the reductions expected from the Current Regulation. About half of the additional NO_x and PM reductions from the Proposed Amendments are expected to be realized within the first six years of implementation. The additional emissions reductions from the Proposed Amendments are expected to reduce the concentration of PM in the communities in which these vehicles operate, benefitting both local residents and the operators of the vehicles alike, as well as reducing the concentration of ozone, which provides regional health benefits. These emission reductions and associated improvements in air quality would be especially beneficial in environmental justice communities that are frequently located in areas with increased exposure to air pollution and toxics from diesel vehicles.

CARB staff estimated the reduction in adverse health outcomes associated with reduced emissions of PM_{2.5} and NO_x due to the Proposed Amendments. These health outcomes include cardiopulmonary mortality, hospital admissions for cardiovascular and respiratory illnesses, and emergency room visits for asthma. Based on the analysis, staff estimates that the total reduction in the number of cases statewide due to the implementation of the Proposed Amendments from 2024 to 2038 would be as follows:

- 570 fewer premature deaths (446 to 698, 95 percent confidence interval),
- 82 fewer hospital admissions for cardiovascular illnesses (0 to 161, 95 percent confidence interval),
- 98 fewer hospital admissions for respiratory illnesses (23 to 173, 95 percent confidence interval), and
- 277 fewer emergency room visits for asthma (175 to 378, 95 percent confidence interval).

The Proposed Amendments would also reduce worker exposure to harmful air pollutants for workers that utilize in-use off-road diesel vehicles at their job. In California alone, it is estimated that 150,000 people are occupationally exposed to off-road heavy-duty diesel vehicles. This includes but is not limited to, those people working as construction equipment

operators, construction laborers, highway maintenance workers, and surface miners.³ The Proposed Amendments will play an important role in reducing the amount of diesel PM and NOx emissions to which workers are exposed. The expected results are improved working conditions, fewer lost workdays, and long-term health benefits for workers.

The Proposed Amendments introduce additional requirements for prime contractors and public works awarding bodies that will ensure that these entities only enter into contracts with compliant fleets. These requirements will make it harder for noncompliant fleets to inappropriately operate in California and encourage such fleets to come into compliance if they wish to contract with these entities. These changes will help maintain a level playing field for compliant businesses in California and reduce the monetary advantage of noncompliant fleets and vehicle owners who try to circumvent the requirements of the Off-Road Regulation.

Although the Proposed Amendments would not require the deployment of zero-emission technology, voluntary provisions have been included to promote this objective. These provisions offer some compliance flexibility for the deployment of zero-emission off-road vehicles. The voluntary provisions support increasing the population of currently available zero-emission off-road vehicles which, in turn, will improve fleet experience with these vehicles and facilitate the expansion of the technology into additional off-road vehicle categories.

Description of Regulatory Action:

Process

On September 20, 2022, CARB released the Notice of Public Hearing (45-Day Notice) and Staff Report: Initial Statement of Reasons for Rulemaking (Staff Report), titled “Public Hearing to Consider the Proposed Amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation,” for public review. The Staff Report contains a description of the rationale for the Proposed Amendments. On September 20, 2022, all references relied upon and identified in the Staff Report were made available to the public. CARB received written comments from 24 commenters during the 45-Day Notice comment period.

On November 17, 2022, CARB conducted a public hearing. CARB staff informed the Board of the Proposed Amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation and the Board received written and oral comments from the public. At the conclusion of the hearing, the Board approved [Resolution 22-19](#) for adoption of the Proposed Amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation.

In accordance with Government Code section 11346.8, the Board directed the Executive Officer to adopt the Proposed Amendments after making any appropriate conforming modifications, as well as any additional supporting documents and information, available to the public for a period of at least 15 days. The Board further provided that the Executive Officer shall consider such written comments as may be submitted during this period, shall

³ Jobs & Income. (2019). USAFacts. Retrieved July 5, 2022, from https://usafacts.org/data/topics/economy/jobs-and-income/?utm_source=bing&utm_medium=cpc&utm_campaign=ND-Economy&msclkid=298c80e31a941c4490cfe2277aaed3f5.

make such modifications as may be appropriate in light of the comments received, and shall present the regulations to the Board for further consideration, if warranted.

Subsequent to the hearing, CARB released a Notice of Public Availability of Modified Text and Availability of Additional Documents and Information (15-Day Notice) on April 10, 2023. Additional references relied upon were made available to the public as part of the 15-Day Notice package. The modifications to the regulatory text and the Staff Report were posted on CARB's website at <https://ww2.arb.ca.gov/rulemaking/2022/off-road-diesel>, accessible to all stakeholders and interested parties.

Synopsis of Proposed Amendments

Below is a list of the major changes included in the Proposed Amendments, inclusive of the changes identified in the 15-Day Notice:

- Phase out the oldest and highest-emitting off-road engines (Tiers 0, 1, and 2) from operation in California. This provision will be implemented by fleet size and engine Tier;
- Restrict the addition of vehicles with Tier 3 and 4 Interim (i) engines, which expands upon provisions in the Current Regulation that restrict the vehicle engine Tier that can be added to a fleet;
- Require contracting entities (e.g., public works awarding bodies and prime contractors) to obtain a fleet's Certificate of Reported Compliance prior to awarding a contract to or hiring a fleet;
- Mandate the use of R99 or R100 renewable diesel for all fleets, with some limited exceptions;
- Provide voluntary compliance flexibility options for fleets that adopt zero-emission technology; and
- Include additional requirements to increase enforceability, provide clarity, and provide additional flexibility for permanent low-use vehicles.
- Incorporates by references American Society for Testing Materials "Standard Specification for Diesel Fuel. Designation D975-21," and 40 Code of Federal Regulations Part 79 – Registration of Fuels and Fuel.

Comparable Federal Regulations:

There are no federal in-use programs comparable to this regulation. Federal regulations focus on new vehicle emissions standards while leaving the development and implementation of in-use vehicle monitoring programs to state jurisdictions. As a result, many states do not regulate in-used off-road diesel-fueled fleets or their vehicles. The Proposed Amendments are consistent with this regulatory structure.

Evaluation of Inconsistency or Incompatibility with Existing State Regulations (Gov. Code, § 11346.5, subd. (a)(3)(D)):

During the process of developing the proposed regulatory action, CARB conducted a search for any similar regulations on this topic and concluded that the Proposed Amendments are neither inconsistent nor incompatible with existing State regulations.