Updated Informative Digest

Proposed Amendments to the Low Carbon Fuel Standard

Sections Affected:

Proposed amendment to California Code of Regulations (CCR), title 17, sections[1] 95480, 95481, 95482, 95483, 95483.1, 95483.2, 95483.3, 95484, 95485, 95486, 95486.1, 95486.2, 95487, 95488, 95488.1, 95488.2, 95488.3, 95488.4, 95488.5, 95488.6, 95488.7, 95488.8, 95488.9, 95488.10, 95489, 95490, 95491, 95491.1, 95495, 95500, 95501, 95502, 95503, and adoption of new sections 95486.3, 95486.4, and 95491.2, title 17, California Code of Regulations

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

The following documents would be incorporated in the regulation by reference as specified by section:

- Hydrogen Fueling Capacity (HyCap) Model. March 12, 2025, section 95481(a)
- Oil Production Greenhouse gas Emissions Estimator Version 3.0b, May 14, 2022, section 95481(a)
- Lookup Table Pathways Technical Support Documentation, August 12, 2024, section 95488.1(b)
- California-modified Greenhouse Gases, Regulated Emissions, and Energy use in Transportation version 4.0 (CA-GREET4.0) model, August 12, 2024, 95488.3(b)
- Tier 1 CI Calculator for Corn or Sorghum Ethanol, August 12, 2024, section 95488.3(b)(1)
- Tier 1 CI Calculator for Sugarcane Ethanol, August 12, 2024, section 95488.3(b)(2)
- Tier 1 CI Calculator for Biodiesel, August 12, 2024, section 95488.3(b)(3)
- Tier 1 CI Calculator for Hydroprocessed Ester and Fatty Acid (HEFA) Fuels, August 12, 2024, section 95488.3(b)(4)
- Tier 1 CI Calculator for Landfill Biomethane, August 12, 2024, section 95488.3(b)(5)
- Tier 1 CI Calculator for Wastewater Sludge Biomethane, August 12, 2024, section 95488.3(b)(6)
- Tier 1 CI Calculator for Dairy and Swine Manure Biomethane, August 12, 2024, section 95488.3(b)(7)
- Tier 1 CI Calculator for Organic Waste Biomethane, August 12, 2024, section 95488.3(b)(8)
- Tier 1 CI Calculator for Hydrogen, October 1, 2024, section 95488.3(b)(9)
- Tier 1 CI Calculator for Corn or Sorghum Ethanol - Instruction Manual, August 12, 2024, section 95488.6(a)(1)(B)(1)

[1] All references to "section" are to the CCR unless otherwise stated.

- Tier 1 CI Calculator for Sugarcane Ethanol - Instruction Manual, August 12, 2024, section 95488.6(a)(1)(B)(2)
- Tier 1 CI Calculator for Biodiesel - Instruction Manual, August 12, 2024, section 95488.6(a)(1)(B)(3)
- Tier 1 CI Calculator for Hydroprocessed Ester and Fatty Acid Fuels - Instruction Manual, October 1, 2024, section 95488.6(a)(1)(B)(4)
- Tier 1 CI Calculator for Landfill Biomethane - Instruction Manual, August 12, 2024, section 95488.6(a)(1)(B)(5)
- Tier 1 CI Calculator for Wastewater Sludge Biomethane - Instruction Manual, August 12, 2024, section 95488.6(a)(1)(B)(6)
- Tier 1 CI Calculator for Dairy and Swine Manure Biomethane - Instruction Manual, October 1, 2024, section 95488.6(a)(1)(B)(7)
- Tier 1 CI Calculator for Organic Waste Biomethane - Instruction Manual, October 1, 2024, section 95488.6(a)(1)(B)(8)
- Tier 1 CI Calculator for Hydrogen - Instruction Manual, October 1, 2024, section 95488.6(a)(1)(B)(9)
- SB 350 Low-Income Barriers Study, February 2018, section 95491(e)(5)(A)2.
- ISO 14065:2020(E), *General principles and requirements for bodies validating and verifying environmental information*, section 95488.9(g)(8)(A)10.c.
- ISO/IEC 17065:2012(E), *Conformity assessment – Requirements for bodies certifying products, processes and services*, section 95488.9(g)(8)(A)10.c.
- Internal Revenue Service, Guidance Notice 2022-61. Federal Register. Volume 87, No. 229. November 30, 2022, section 95481(a)

Background and Effect of the Proposed Regulatory Action:

California is in the midst of a rapid evolution to cleaner fuels and carbon neutrality to achieve air quality and climate targets. In 2022, CARB approved the 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan Update), which charted a path to achieving carbon neutrality by 2045 and reducing greenhouse gas (GHG) emissions 85% below 1990 levels by 2045. Meeting this goal will require the deployment of GHG emission reduction strategies at an unprecedented scale and pace. As transportation emissions, primarily from the use of fossil fuels, are California's single biggest source of GHG emissions and contributor to poor air quality, the State is working to rapidly increase the numbers of zero-emission vehicles on the road and deploy cleaner fuels to power them.

The Low Carbon Fuel Standard (LCFS) regulation is a key part of California's transportation decarbonization strategy and a successful one thus far. The LCFS provides the economic incentives to produce cleaner fuels like electricity, hydrogen, and biofuels that are needed to displace fossil fuels and reduce transportation sector emissions. The LCFS has supported the displacement of billions of gallons of petroleum fuels with lower carbon alternatives, and without these alternative fuels, the State risks returning to higher levels of fossil fuel use and fewer climate and air quality benefits. Considering the clear scientific consensus on the need to rapidly decarbonize and achieve carbon neutrality by mid-century, the significant health and economic benefits of phasing out fossil fuel use, and the introduction of federal funding for alternative fuels and clean energy, CARB staff have proposed updates to the LCFS regulation.

Objectives and Benefits of the Proposed Regulatory Action:

The proposed amendments to the LCFS regulation are focused on the following key concepts:

- Increasing the stringency of the program to more aggressively decarbonize fuels and thereby reduce our dependence on fossil fuels;
- Strengthening the program's equity provisions to promote investment in disadvantaged, low-income, and rural communities;
- Supporting zero-emission truck refueling;
- Incentivizing greater production of clean fuels needed in the future, such as low-carbon hydrogen;
- Supporting methane emissions reductions and deploying biomethane for best uses across transportation; and
- Strengthening guardrails on crop-based fuels to prevent deforestation or other potential adverse impacts.

These proposed changes, if adopted, would result in significant GHG reductions, as well as air quality, health, and economic benefits across the State. These benefits include:

GHG Reductions

- 90% reduction in carbon intensity of California's transportation fuels by 2045.
- 553 million metric tons of life cycle carbon dioxide equivalent (CO2e) reductions.

Health Benefits

- Almost $12 billion in total avoided health costs resulting from the reduction of over 9,100 tons of particulate matter (PM) 2.5 and more than 34,000 tons of nitrogen oxides (NOx).

Economic Benefits

- $68 billion in revenue estimated accruing to California businesses from credit generation/sales.
- Job growth in the electricity and biofuel sectors as demand for these fuels grows.
- Increases the diversity and competitiveness of transportation fueling options for California consumers, transitioning supply from just ten fossil fuel refiners to hundreds of individual biofuel, electricity, and hydrogen producers.

The changes will also help support the implementation of California's zero-emission vehicle (ZEV) policies, align with the 2022 Scoping Plan Update, and provide a model for other jurisdictions looking to deploy clean fuel and climate policies. And finally, as Californians transition away from fossil fuels and toward more ZEVs and lower-carbon fuel alternatives, the cost of fuels for Californians will also decrease, providing Californians billions of dollars in savings. CARB staff estimates the amount of money Californians spend on fueling costs across all vehicle classes could be up to 42% lower in 2045 compared to fuel costs in 2021. This translates into annual savings of over $20 billion in fuel expenditures in 2045 alone.

Summary of Proposed Amendments

The proposed amendments would increase both the pre- and post-2030 stringency of the LCFS carbon intensity (CI) benchmarks. The proposed amendments would require a 30% reduction in fuel CI by 2030 and a 90% reduction in fuel CI by 2045 from a 2010 baseline. To accommodate rapid advances in transportation fuel production and use, the proposed

amendments also include a near-term step-down and an Automatic Acceleration Mechanism (AAM). The step-down is a one-time 9% reduction in the CI benchmark in 2025 that increases the stringency of the CI target. The AAM is another tool to increase the stringency of the CI benchmark, but is activated only when specific regulatory conditions are met. The objective of these amendments is to send clear, long-term market signals to support investment in low-carbon fuel production and technologies that are needed to achieve deep emissions reductions in the transportation sector while supporting the State's broader portfolio of ZEV regulations and climate statutes.

Another goal is to align the crediting opportunities in the LCFS with the fuel and technology pathways identified in the 2022 Scoping Plan Update. To encourage additional GHG reductions in key areas where decarbonization will be important to meet long-term climate goals, staff proposes to expand ZEV infrastructure crediting to the medium- and heavy-duty vehicle sector under the program. Staff are also proposing to incorporate strengthened sustainability guardrails to prevent potential future externalities associated with crop-based fuels. Given the need to quickly scale low-carbon fuel production in this decade and staff's experience implementing the program for over a decade, staff also proposes to update and streamline several quantification methods and analysis tools so that the program does not unnecessarily slow down the investment or availability of low-carbon fuels and so other jurisdictions can establish similar programs without significant administrative needs.

Description of Regulatory Action

On December 19, 2023, 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 Proposed Amendments to the Low Carbon Fuel Standard," for public review, and made all supporting references available to the public. The 45-Day Notice comment period began on January 5, 2024, and closed on February 20, 2024. On February 14, 2024, CARB issued a Notice of Postponement, postponing the originally noticed hearing date of March 21, 2024. CARB received a total of 398 written comments, in addition to 8,763 form letter comments, during the 45-Day Notice comment period. On May 20, 2024, CARB released a Notice of Public Hearing for November 8, 2024.

On August 12, 2024, CARB released a Notice of Public Availability of Modified Text and Availability of Additional Documents and Information (15-Day Notice). CARB received a total of 253 written comments during the comment period, which closed on August 27, 2024.

On August 16, 2024, CARB released a Recirculated Draft Environmental Impact Analysis. CARB received a total of 23 written comments during the comment period, which closed on September 30, 2024.

On October 1, 2024, CARB released a Notice of Public Availability of Modified Text and Availability of Additional Documents and Information (Second 15-Day Notice). CARB received a total of 307 written comments during the comment period, which closed on October 16, 2024.

On October 11, 2024, CARB posted an Errata to correct an error in the proposed regulatory text.

On November 8, 2024, CARB held a public hearing to consider approving the proposed amendments. After considering staff's presentation of the proposed amendments and all public

comments received, the Board approved Resolution 24-14, which approved the proposed amendments to the LCFS regulations for adoption.

On January 3, 2025, CARB submitted the Final Statement of Reasons (FSOR) for the rulemaking action entitled “Public Hearing to Consider Amendments to the Low Carbon Fuel Standard” and all other rulemaking documents for the proposed amendments to the Office of Administrative Law (OAL) for its review and approval. On February 18, 2025, OAL issued a “Notice of Disapproval of Regulatory Action” for the proposed amendments, which was then followed by OAL’s “Decision of Disapproval of Regulatory Action,” issued on February 25, 2025.

On April 4, 2025, a Third Notice of Public Availability of Modified Text and Availability of Additional Documents and Information and Proposed Third 15-Day Modifications to the Proposed Regulation Order were posted for a public review and comment period through April 21, 2025. The proposed Third 15-Day Modifications addressed the concerns noted by OAL in its Decision of Disapproval of Regulatory Action and were made accessible to all stakeholders and interested parties. CARB received 81 written comments during the third 15-day public comment period.

Comparable Federal Regulations:

The federal Renewable Fuel Standard (RFS) regulations, 40 C.F.R. § 80.1400 et seq., require that nearly 21 billion gallons of biofuels be sold annually nationwide in 2023. But the RFS statutory volumetric mandates alone will not achieve the 30% reduction in CI by 2030 and the other objectives of the proposed LCFS regulation amendments. Further, the RFS targets only biofuels and not other alternative fuels incentivized by the LCFS (e.g., electricity and hydrogen). Therefore, while the RFS and the LCFS complement each other in promoting low-CI biofuels, the RFS does not spur the development of all the low-CI fuels that are included in the LCFS.

An 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 of any similar regulations on this topic and concluded these regulations are neither inconsistent nor incompatible with existing state regulations.