

# Updated Informative Digest

## Proposed Amendments to the Regulation on the Commercialization of Alternative Diesel Fuels

**Sections Affected:** Proposed amendments to California Code of Regulations, title 13, division 3, chapter 5, article 3, subarticle 2, section 2293.2 and Appendix 1 of subarticle 2.

### Background

#### Background and Effect of the Proposed Regulatory Action:

California Air Resources (CARB or Board) staff is proposing to amend the Regulation on the Commercialization of Alternative Diesel Fuels (Alternative Diesel Fuels regulation) to improve the rigor and clarity of its testing and certification program.<sup>1</sup> The Alternative Diesel Fuels (ADF) regulation is a key element of California's Fuels Program;<sup>2</sup> it preserves or improves public health and the environmental and emissions benefits associated with the use of innovative ADFs in California.

#### *Proposed Amendments to the ADF Regulation*

The proposed amendments to the ADF regulation reinforce the emissions certification testing requirements and require biodiesel additives and ADF formulations to be uniformly certified according to new certification procedures. The proposed amendments will further ensure that additives or ADF formulations are certified to mitigate potential oxides of nitrogen (NOx) emissions increases from the use of biodiesel, consistent with rigorous and appropriate protocols.

Staff's proposal is described in the Staff Report: Initial Statement of Reasons for Proposed Rulemaking (ISOR or Staff Report)<sup>3</sup> released on January 7, 2020.

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<sup>1</sup> Codified at Title 13, California Code of Regulations, sections 2293-2293.9 and Appendix 1 of Subarticle 2.

<sup>2</sup> California's Fuels Program includes several fuels regulations and programs that establish the overarching framework of California's transportation fuel policies. Background information about the program is available at: <https://ww3.arb.ca.gov/fuels/background.htm>.

<sup>3</sup> California Air Resources Board. Public Hearing to Consider the Proposed Amendments to the Regulation on the Commercialization of Alternative Diesel Fuels. January 7, 2020. Available online at:

The ISOR for the proposed amendments builds on the comprehensive and extensive work that was done in support of the original 2015 rulemaking<sup>4</sup> and the amendments to the Low Carbon Fuel Standard and Alternative Diesel Fuels Regulations (2018 Amendments).<sup>5</sup> The full regulatory record and background for these ADF regulation rulemakings is available at the Alternative Diesel Fuels Rulemaking History webpage.<sup>6</sup> Additional program information is available at the ADF webpage.<sup>7</sup>

### **Comparable Federal Regulations:**

There are no current federal regulations comparable to the proposed regulation.

## **The Board's Action**

### **Description of the Regulatory Action:**

At its April 23, 2020, public hearing, the Board was informed of the proposed amendments to the ADF regulation. The Board approved for adoption the proposed amendments at the April 2020 Board Hearing, but directed the Executive Officer, through Resolution 20-2, to determine if additional conforming modifications to the regulation were appropriate and to make any proposed modified regulatory language available for public comment, with any additional supporting documents and information, for a period of at least 15 days in accordance with Government Code section 11346.8. The Board further directed the Executive Officer to consider written comments submitted during the public review period and make any further appropriate modifications available for public comment for at least 15 days. The Executive Officer was directed to present the regulation to the Board for further consideration if

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[https://ww3.arb.ca.gov/regact/2020/adf2020/isor.pdf?\\_ga=2.93360221.113902579.1608062571-566009273.1600474144](https://ww3.arb.ca.gov/regact/2020/adf2020/isor.pdf?_ga=2.93360221.113902579.1608062571-566009273.1600474144).

<sup>4</sup> See "Staff Report: Initial Statement of Reasons: Proposed Regulation on the Commercialization of Alternative Diesel Fuels." January 2 (2015); and "Final Statement of Reasons for Rulemaking, Including Summary of Public Comments and Agency Responses." September (2015). Available at: <https://ww3.arb.ca.gov/regact/2015/adf2015/adf2015.htm>.

<sup>5</sup> See "Staff Report: Initial Statement of Reasons: Proposed Amendments to the Low Carbon Fuel Standard Regulation and to the Regulation on Commercialization of Alternative Diesel Fuels." March 6 (2018); and "Final Statement of Reasons: Amendments to the Low Carbon Fuel Standard Regulation and to the Regulation on Commercialization of Alternative Diesel Fuels." November (2018). Available at: <https://ww2.arb.ca.gov/rulemaking/2018/low-carbon-fuel-standard-and-alternative-diesel-fuels-regulation-2018>.

<sup>6</sup> Alternative Diesel Fuels Rulemaking History webpage available at: <https://ww2.arb.ca.gov/our-work/programs/alternative-diesel-fuels/alternative-diesel-fuels-rulemaking-history>.

<sup>7</sup> Alternative Diesel Fuels webpage available at: <https://ww2.arb.ca.gov/our-work/programs/alternative-diesel-fuels>.

warranted, and if not, to take final action to adopt the regulation after addressing all appropriate conforming modifications.

## **Supplemental Comment Periods and Modifications to the Original Proposal**

Pursuant to Board direction provided at the April 23, 2020 meeting, and to address stakeholders comments, CARB released a Notice of Public Availability of Modified Text and Availability of Additional Documents and/or Information<sup>8</sup> (First 15-Day Notice) on October 14, 2020, which notified the public of additional documents added into the regulatory record and presented additional modifications to the regulatory text after consultation with stakeholders. CARB released a Second Notice of Public Availability of Modified Text and Availability of Additional Documents and/or Information<sup>9</sup> (Second 15-Day Notice) on January 12, 2021 to address stakeholder comments received during the first 15-day comment period.

The following summaries do not include all modifications to correct typographical or grammatical errors, changes in numbering or formatting, nor does it include all of the non-substantive revisions made to improve clarity.

### **Summary of First 15-Day Modifications**

#### **1. Modifications to Section 2293.2. Definitions**

New definitions of “Emissions Test Facility” and “Independent Laboratory” were added to clarify the meaning of those terms.

#### **2. Modifications to Appendix 1 of Subarticle 2, Subsection (a)(1)(B). Approved ADF Formulations**

Appendix 1 of Subarticle 2, Subsection (a)(1)(B)2. was added to allow a second approved ADF formulation that includes renewable diesel blends with biodiesel and conventional diesel consisting of at least 55 percent renewable diesel and at most 20 percent biodiesel (R55 B20).

The proposed R55 B20 approved ADF formulation provides an additional compliance option for persons subject to in-use requirements for biodiesel use

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<sup>8</sup> California Air Resources Board. Notice of Public Availability of Modified Text and Availability of Additional Documents. Posted October 14, 2020. Available online at: <https://ww3.arb.ca.gov/regact/2020/adf2020/15daynotice.pdf>.

<sup>9</sup> California Air Resources Board. Second Notice of Public Availability of Modified Text and Availability of Additional Documents. Posted January 12, 2021. Available online at: <https://ww2.arb.ca.gov/regact/2020/adf2020/second15daynotice.pdf>.

above the NOx control level (usually B5). This proposed modification is consistent with Board direction to address “the blending issue” and is supported by staff analysis of the proposed R55 B20 approved ADF formulation. This proposed modification also addresses stakeholder comments that the R75 B20 formulation requires more renewable diesel than is needed to ensure NOx equivalence, as well as stakeholder comments that the R75 B20 formulation could artificially restrict the use of biodiesel in California due to insufficient renewable diesel availability.

### **3. Modifications to Appendix 1 of Subarticle 2, Subsection (a)(2)(F)2. Single Engine, Single Emissions Test Facility Certification Testing**

Appendix 1 of Subarticle 2, Subsection (a)(2)(F)2. was modified to allow certification of B20 ADF formulations using a single test engine at a single Emissions Test Facility. Single engine, single Emissions Test Facility certification testing requires either:

1. Engine acceptability testing that will allow the Executive Officer to determine which engines and Emissions Test Facilities are acceptable for single engine testing; or
2. A successful additive or ADF formulation certification based on testing with two engines at two Emissions Test Facilities.

*Option 1:* Engine acceptability must be performed at a minimum of three Emissions Test Facilities following the certification testing requirements in subsection (a)(2). Engine acceptability testing will include NOx and Particulate Matter (PM) emissions testing using the same Diesel Test Fuel and twenty percent blend with Biodiesel Additive Certification Fuel on each engine at each Emissions Test Facility. Based on the results of the engine acceptability testing and the criteria specified in subsection (a)(2)(F)2.a.ii., the Executive Officer will determine which engines and Emissions Test Facilities are acceptable for single engine, single Emissions Test Facility certification testing. These criteria include a requirement that the average specific NOx emissions for a given engine are within one percent of the average specific NOx emissions for the engine with the highest specific NOx emissions.<sup>10</sup>

*Option 2:* If two-engine, two Emissions Test Facility certification testing of an additive or ADF formulation is successful, resulting in issuance of a

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<sup>10</sup> Subsection (a)(2)(F)2.a.ii.2. requires the ratio of the average specific NOx emissions of the B20 test fuel to the Diesel Test Fuel for a given engine to be within one percent of the ratio of the average specific NOx emissions of the B20 test fuel to the Diesel Test Fuel in the engine with the highest relative increase in NOx emissions for B20 test fuel relative to Diesel Test Fuel.

corresponding Executive Order,<sup>11</sup> the Executive Officer will determine if the use of the specific test engines at the specific Emissions Test Facilities used in that certification testing can be used in subsequent single-engine, single Emissions Test Facility certification testing. The criteria for certification include a statistical comparison of the average specific NOx emissions for both engines, and NOx emissions tests on both engines must show statistical equivalence with the diesel test fuels.

After the Executive Officer approves specific engines at specific Emissions Test Facilities for use in single engine certification testing, an applicant must submit a test plan to the Executive Officer for B20 certification testing. Certification testing using a single engine at a single Emissions Test Facility will be subject to the additional criterion regarding PM variability in subsection (a)(2)(F)2.<sup>12</sup>

This proposed modification ensures that results for certification testing using a single engine at a single Emissions Test Facility would be repeatable on other engines at other Emissions Test Facilities. The proposed modification also addresses stakeholders' comments regarding the costs and time associated with certification testing on two engines located at two different Emissions Test Facilities for all additives and ADF formulations.

#### **4. Modifications to Appendix 1 of Subarticle 2, Subsection (a)(2)(G). Required NOx Reductions for Candidate Fuels Containing Renewable Hydrocarbon Diesel**

Appendix 1 of Subarticle 2, Subsection (a)(2)(G) was modified to require certification testing of candidate fuels containing renewable hydrocarbon diesel to demonstrate at least a two percent reduction in average NOx emissions relative to the Diesel Test Fuel.

The use of renewable diesel-based ADF formulations that are certified to NOx-equivalence on a per-gallon basis reduces the amount of renewable diesel in the fuel pool that is available to provide NOx offsets for biodiesel blends below the NOx control level. If the use of NOx-equivalent renewable diesel-based ADF formulations is widespread, such formulations could increase the possibility of high biodiesel volumes leading to future NOx increases because there would be less renewable diesel remaining in the fuel pool (i.e., not used in a

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<sup>11</sup> Executive Orders for additives or ADF formulations are only issued after a robust process of testing and statistical analysis as outlined under (a)(2)(F) and (a)(2)(G).

<sup>12</sup> Subsection (a)(2)(F)2 requires the ratio of the average specific PM emissions of the B20 candidate fuel to the Diesel Test Fuel during certification testing to be within two percent of the ratio of the average specific PM emissions of the B20 test fuel to the Diesel Test Fuel used in the engine acceptability testing or the two-engine, two Emissions Test Facility certification testing for that engine and Emissions Test Facility.

NOx-equivalent ADF formulation) to offset biodiesel NOx emissions from biodiesel blends below the NOx control level. This effect may be magnified by the potential widespread use of the R55 B20 approved ADF formulation, which provides a lower NOx reduction (i.e., offsets less biodiesel NOx) than renewable diesel that would otherwise be available in the fuel pool. The proposed modification would address this issue by requiring that certified renewable diesel-based ADF formulations reduce NOx emissions by at least two percent, maintaining the NOx emissions offset effect associated with renewable diesel use, as intended by the design of the ADF regulation.

**5. Modifications to Appendix 1 of Subarticle 2, Subsection (a)(2)(J). Date After which Only Biodiesel Additives and ADF Formulations Approved or Certified According to Amended Certification Procedures May be Used**

Appendix 1 of Subarticle 2, Subsection (a)(2)(J) was modified to adjust from January 1, 2021 to April 1, 2021, the date after which only biodiesel additives or ADF formulations approved or certified under the proposed amendments can be used to comply with biodiesel in-use requirements. The proposed modification addresses stakeholder comments that a January 1, 2021, effective date for this provision may not allow sufficient time for certification applicants to certify biodiesel additives and ADF formulations consistent with the proposed amendments or to transition to use of other compliance options, including use of the approved ADF formulations.

**Summary of Second 15-Day Modifications**

**1. Modifications to Appendix 1 of Subarticle 2, Subsection (a)(2)(J). Date After which Only Biodiesel Additives and ADF Formulations Approved or Certified According to Amended Certification Procedures May be Used**

Appendix 1 of Subarticle 2, Subsection (a)(2)(J) was modified to adjust from April 1, 2021 to August 1, 2021, the date after which only biodiesel additives or ADF formulations approved or certified under the proposed amendments can be used to comply with biodiesel in-use requirements. The proposed modifications address stakeholder comments that an April 1, 2021, effective date for this provision may not allow sufficient time for certification applicants to certify biodiesel additives and ADF formulations consistent with the proposed amendments or to transition to use of other compliance options, including use of the approved ADF formulations.