

State of California  
AIR RESOURCES BOARD

**ALTERNATIVE CERTIFICATION REQUIREMENTS AND TEST PROCEDURES FOR  
HEAVY-DUTY ELECTRIC AND FUEL-CELL VEHICLES AND STANDARDS AND  
TEST PROCEDURES FOR ZERO-EMISSION POWERTRAINS**

Resolution 19-15

**June 27, 2019**

Agenda Item No.: 19-6-1

WHEREAS, sections 39600 and 39601 of the Health and Safety Code authorize the California Air Resources Board (CARB or Board) to adopt standards, rules, and regulations and to do such acts as may be necessary for the proper execution of the powers and duties granted to and imposed upon the Board by law;

WHEREAS, sections 43013, 43100, 43101, 43102, 43104, and 43806 of the Health and Safety Code authorize the Board to adopt emission standards and test procedures to control air pollution caused by motor vehicles;

WHEREAS, section 43018(c) of the Health and Safety Code provides that in carrying out section 43018, the Board shall adopt standards and regulations that will result in the most cost-effective combination of control measures on all classes of motor vehicles and motor vehicle fuel, including, but not limited to, reductions in motor vehicle exhaust and evaporative emissions, and reductions in in-use vehicular emissions through durability, performance improvements, and specification of vehicular fuel composition;

WHEREAS, section 43105 of the Health and Safety Code authorizes the Board to require manufacturers of certified vehicles to take corrective action specified by the Board, which may include recall, if those vehicles have violated emission standards or test procedures;

WHEREAS, section 43106 of the Health and Safety Code provides that each new motor vehicle or engine required under Part 5 of the Health and Safety Code to meet the emission standards established pursuant to section 43101 shall be, in all material respects, substantially the same in construction as the test motor vehicle or engine that has been certified by the Board (in accordance with Article 1, Chapter 2, of Part 5 of the Health and Safety Code);

WHEREAS, sections 39500 and 40000 of the Health and Safety Code designate CARB as the agency responsible for control of emissions from motor vehicles;

WHEREAS, sections 39010 and 39601 of the Health and Safety Code provide that a definition set forth in Chapter 2 of Division 26 of the Health and Safety Code shall govern the construction of the division unless and until rules and regulations are adopted by the

Board that revise such definition and that the Board may revise such definition in order to conform to definitions to federal laws and rules and regulations;

WHEREAS, section 38580 of the Health and Safety Code requires the Board to monitor compliance with and enforce a rule, regulation, order, emission limitation, emissions reduction measure, or market-based compliance mechanism adopted by CARB pursuant to Division 25.5;

WHEREAS, section 38505 of the Health and Safety Code defines "greenhouse gas" (GHG) or "greenhouse gases" for purposes of Division 25.5 of the Health and Safety Code as including all of the following gases: carbon dioxide (CO<sub>2</sub>), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride;

WHEREAS, section 38560 of the Health and Safety Code directs the Board to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions from sources or categories of sources, subject to the criteria and schedules set forth in part 4 of division 25.5 of the Health and Safety Code;

WHEREAS, section 43205.5 of the Health and Safety Code requires manufacturers to warrant to ultimate purchasers and subsequent purchasers of their heavy-duty vehicles and engines that the vehicles and engines are designed, built, and equipped to conform to applicable emission standards for a period of use determined by the Board, and that such vehicles and engines are free from defects in materials and workmanship which cause the engines and vehicles to fail to conform to applicable emission standards for the same, or lesser, period of use;

WHEREAS, section 39667 of the Health and Safety Code directs the Board to consider revisions to its emissions standards for vehicular sources to achieve the maximum possible reduction in public exposure to substances that the Board has identified as toxic air contaminants pursuant to section 39662 of the Health and Safety Code; such regulations affecting new motor vehicles are to be based on the most advanced technology feasible for the model year and may include, but are not limited to, the required installation of vehicular control measures on new motor vehicles;

WHEREAS, Assembly Bill 32 (AB 32) added section 38501 to the Health and Safety Code, which expresses the Legislature's findings that global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California, and the Legislature's intent that CARB coordinate with state agencies and consult with the environmental justice community, industry sectors, business groups, academic institutions, environmental organizations, and other stakeholders in implementing AB 32, and design emissions reduction measures to meet the statewide emissions limits for GHGs in a manner that minimizes costs and maximizes benefits for California's economy, maximizes additional environmental and economic co-benefits for California, and complements the State's efforts to improve air quality;

WHEREAS, section 38510 of the Health and Safety Code designates CARB as the State agency charged with monitoring and regulating sources of GHG emissions that cause global warming in order to reduce such emissions;

WHEREAS, while California has made dramatic progress to improve its air quality and reduce GHGs, the state must continue its transition to significantly cleaner transportation and freight movement technologies to achieve its long-term climate and public health goals;

WHEREAS, in recognition of the devastating impacts of climate change emissions on California, Governor Arnold Schwarzenegger, in June 2005, signed Executive Order S-3-05, June 1, 2005, which established the following GHG emission targets:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emission 80 percent below 1990 levels;

WHEREAS, the Legislature has enacted Senate Bill 32 (SB 32) that expands upon the California Global Warming Solution Act of 2006 to reduce GHG emissions to 40 percent below 1990 levels by 2030;

WHEREAS, Governor Brown's Executive Order B-16-2012 requires reductions from the transportation sector to 80 percent below 1990 levels by 2050 and the deployment of 1.5 million zero-emission vehicles by 2025;

WHEREAS, Governor Edmund G. Brown Jr., in Executive Order B-30-15, April 29, 2015, established a 2030 GHG emission reduction target of 40 percent below 1990 levels, in order to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050;

WHEREAS, Governor Brown's Executive Order B-48-18 requires the deployment of 5 million zero-emission vehicles by 2030;

WHEREAS, Governor Edmund G. Brown Jr., in Executive Order B-55-15, September 10, 2018, established a new statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and maintain net negative emissions thereafter;

WHEREAS, the California Sustainable Freight Action Plan sets targets of 100,000 freight vehicles and equipment capable of zero-emission operation by 2030;

WHEREAS, actions to deploy zero-emission technology will be essential to meeting these goals;

WHEREAS, CARB's 2016 State Strategy for the State Implementation Plan, 2016 Mobile Source Strategy, and the California Sustainable Freight Action Plan identify several measures intended to accelerate deployment of zero-emission technology in the mobile source sector;

WHEREAS, the heavy-duty zero-emission industry is subject to many of the issues associated with any emerging market, such as substantial variability in vehicle quality and support; purchasers who are still unfamiliar with zero-emission technology and its operational impacts; and limited historical information by which to evaluate manufacturers;

WHEREAS, in order to increase deployment volume while also encouraging technology advancement, California needs to continue to support both market-ready and cutting-edge zero-emission applications;

WHEREAS, staff has proposed the Alternative Certification Requirements and Test Procedures for Heavy-Duty Electric and Fuel-Cell Vehicles and Proposed Standards and Test Procedures for Zero-Emission Powertrains, as set forth in Appendix A to the Staff Report: Initial Statement of Reasons (ISOR) released to the public on December 31, 2018, and additional suggested modifications to the original proposal as set forth in Attachment D to Resolution 19-7;

WHEREAS, the proposed regulatory action would help support the industry by instilling more confidence in fleets purchasing these vehicles as the state continues to roll out its suite of heavy-duty zero-emission measures;

WHEREAS, in order to provide this needed support, the proposed regulatory action would build upon existing certification requirements for on-road heavy-duty electric and fuel-cell vehicles and establish an alternative certification procedure that helps ensure such vehicles are well-supported once deployed and consistent and reliable information is available to fleets when making purchase decisions;

WHEREAS, the proposed certification process is simple and straightforward and is based upon the expected best practices by market leaders;

WHEREAS, future zero-emission measures, including both regulatory and incentive-based measures, could incorporate the proposed certification procedure, in whole or in part, as a requirement;

WHEREAS, the proposed certification framework would provide a process that addresses the needs of more-mature heavy-duty zero-emission applications while still promoting technology innovation by allowing more-cutting edge applications to continue to certify through the less-stringent certification requirements that exist today;

WHEREAS, CARB's regulatory program that involves the adoption, approval, amendment, or repeal of standards, rules, regulations, or plans has been certified by the Secretary for

Natural Resources under Public Resources Code section 21080.5 of the California Environmental Quality Act (CEQA; California Code of Regulations, title 14, section 15251(d)), and CARB conducts its CEQA review according to this certified program (California Code of Regulations, title 17, sections 60000-60007);

WHEREAS, CARB prepared a Draft Environmental Analysis (EA) under its certified regulatory program entitled *Draft Environmental Analysis Prepared for the Proposed Zero-Emission Airport Shuttle Regulation and Zero-Emission Powertrain Certification Regulation*, included as Appendix B to the Staff report, and released it for 45 days of public comment from January, 4, 2019, through February 19, 2019;

WHEREAS, the Draft EA concluded that implementation of the proposed Zero-Emission Airport Shuttle Regulation and Zero-Emission Powertrain Certification Regulation has the potential to result in the following short-term and long-term impacts: beneficial impacts on air quality, energy demand, and GHGs; less than significant impacts or no impacts, on energy, mineral resources, population employment, housing, public service, and recreation; and potentially significant impacts on aesthetics, agricultural and forest resources, short-term air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use planning, noise, mineral resources, transportation and traffic, and utilities and service systems. Many of the identified potentially significant adverse impacts are primarily related to short-term, construction-related activities. This explains why some resource areas are identified above as having both less-than-significant impacts and potentially significant impacts. Please refer to the Draft EA for further details;

WHEREAS, on February 21, 2019, the Board conducted a public hearing on the proposed Alternative Certification Requirements and Test Procedures for Heavy-Duty Electric and Fuel-Cell Vehicles and Proposed Standards and Test Procedures for Zero-Emission Powertrains and the Draft EA prepared for the proposal;

WHEREAS, following the public hearing, the Board adopted Resolution 19-7 directing the Executive Officer to make the modified regulatory language in Attachment D to that resolution, and any additional conforming modifications that are appropriate, available for public comment, with any additional supporting documents and information, for a period of at least 15 days;

WHEREAS, the Executive Officer was further directed to consider written comments submitted during the public review period and make any further modifications that are appropriate available for public comment for at least 15 days; evaluate all comments received during the public comment periods, including comments on the Draft EA; and prepare written responses to EA comments as required by CARB's certified regulations at California Code of Regulations, title 17, sections 60000-60007 and Government Code section 11346.9(a);

WHEREAS, the Executive Officer was directed to present to the Board, at a subsequently scheduled public hearing, staff's written responses to any comments on the Draft EA, along with the Final EA, for consideration for approval, and the final

proposed Alternative Certification Requirements and Test Procedures for Heavy-Duty Electric and Fuel-Cell Vehicles and Proposed Standards and Test Procedures for Zero-Emission Powertrains for consideration for adoption;

WHEREAS, following the Board hearing, the modified regulatory language and supporting documentation were circulated for a 15-day public comment period, with the changes to the originally proposed text clearly indicated, according to provisions of California Code of Regulations, title 1, section 44 and Government Code section 11340.85, from May 3, 2019, through May 20, 2019;

WHEREAS, staff reviewed written comments received on the Draft EA and prepared written responses to those comments in a document entitled, *Response to Comments on the Draft Environmental Analysis Prepared for the Zero-Emission Airport Shuttle Regulation and Zero-Emission Powertrain Certification Regulation* (Response to EA Comments), as set forth in Attachment F to this resolution;

WHEREAS, on June 24, 2019, staff posted on the rulemaking page the Final EA, which includes minor revisions, and the Response to EA comments;

WHEREAS, prior to the duly noticed public hearing held on June 27, 2019, staff presented the Final EA and the Response to EA Comments, as set forth in Attachments E and F to this resolution, respectively, to the Board for consideration;

WHEREAS, a public hearing and other administrative proceedings have been held according to the provisions of Chapter 3.5 (commencing with section 11340), part 1, division 3, title 2 of the Government Code; and

WHEREAS, in consideration of the ISOR, written comments, and public testimony, the Board finds that:

California faces unique air quality goals and challenges;

Increased atmospheric GHG levels continue to cause changes to the earth's climate that are already being experienced in California and throughout the world;

In order to meet California's long-term air quality and climate goals, measures that accelerate the deployment of zero-emission technology are necessary;

Heavy-duty zero-emission market challenges exist because the industry is still an emerging one that is primarily served by smaller manufacturers;

The proposal would support future zero-emission measures targeting heavy-duty vehicles by helping address these market challenges;

The proposal would help advance the industry by ensuring information regarding these vehicles and their powertrains are effectively and consistently

communicated to purchasers, by ensuring the vehicles and their powertrains are well supported once deployed, and by reducing barriers to greater vehicle repairability;

The proposed regulation would establish optional zero-emission standards for new 2021 and subsequent model year California zero-emission powertrains and add an optional certification pathway for on-road heavy-duty battery-electric and fuel-cell vehicles;

The proposed regulation is necessary, appropriate, and technologically feasible;

The proposed regulation would create a framework that would support both new technologies as well as technologies that have demonstrated commercial viability;

The requirement to attest that vehicle integration components are designed and developed to accommodate the expected output of the zero-emission powertrain would help to ensure that manufacturers are making proper vehicle design choices;

The proposed requirements to provide a purchase guidance statement and to make certain vehicle information accessible on-board to vehicles owners would help purchasers choose appropriate products for their vocation and provide information that would likely result in higher utilization of heavy-duty vehicles with zero-emission technology;

The proposed requirement for a manufacturer to make available its *diagnostic and repair manual* as well as any software and service tools necessary to perform repairs to third-party repair facilities at a fair and reasonable cost would remove barriers to the expansion of the repair network for heavy-duty battery-electric and fuel-cell powertrains and vehicles;

The proposed standardized battery-capacity test would allow purchasers to more-effectively compare different zero-emission powertrain options and select powertrains that are most-suited for their vocation, which would likely lead to higher utilization of heavy-duty vehicles with zero-emission technology;

The proposed requirement for manufacturers to describe monitoring and diagnostic strategies to the Executive Officer would generate data that could be used to support the proposed warranty and recall requirements and inform other future regulatory measures and strategies that increase deployment of zero-emission technology in the heavy-duty sector;

The proposed requirements for manufacturers to provide a minimum 3-year or 50,000-mile (whichever occurs first) warranty against workmanship and defects and subjecting manufacturers to a recall or other alternative measures to mitigate

component failures would help increase adoption of zero-emission technology and result in higher utilization of heavy-duty battery-electric and fuel-cell vehicles by minimizing vehicle downtime and boosting consumer confidence;

The proposed labeling requirements would allow identification of certified powertrains and vehicles in the field;

The proposed Alternative Certification Requirements and Test Procedures for Heavy-Duty Electric and Fuel-Cell Vehicles and Proposed Standards and Test Procedures for Zero-Emission Powertrains were developed in an open public process, in consultation with affected parties, through numerous public workshops, individual meetings, and other outreach efforts, and these efforts are expected to continue;

The proposed regulation will not have a significant statewide adverse economic impact directly affecting businesses, including the ability of California businesses to compete with businesses in other states, or on representative private persons;

No reasonable alternatives to the Alternative Certification Requirements and Test Procedures for Heavy-Duty Electric and Fuel-Cell Vehicles and Proposed Standards and Test Procedures for Zero-Emission Powertrains considered to date, or that have otherwise been identified and brought to the attention of CARB, would be more effective at carrying out the purpose for which the regulation is proposed or would be as effective and less burdensome to affected entities than the proposed regulation; and

The proposed regulation is consistent with the Board's environmental justice policies and do not disproportionately impact people of any race, culture, or income.

NOW, THEREFORE, BE IT RESOLVED that the Board hereby certifies that the Final EA, set forth in Attachment E to this resolution, was completed in compliance with CARB's certified regulatory program to meet the requirements of CEQA, reflects the agency's independent judgment and analysis, and was presented to the Board whose members reviewed and considered the information therein before taking action to approve the Alternative Certification Requirements and Test Procedures for Heavy-Duty Electric and Fuel-Cell Vehicles and Proposed Standards and Test Procedures for Zero-Emission Powertrains.

BE IT FURTHER RESOLVED that the Board approves the Response to EA Comments set forth in Attachment F to this resolution.

BE IT FURTHER RESOLVED that in consideration of the Final EA, the Response to EA Comments, and the entirety of the record, the Board adopts the Findings and Statement of Overriding Considerations set forth in Attachment D to this resolution.

NOW, THEREFORE, BE IT RESOLVED that the Board hereby adopts amendments to section 1956.8, Title 13 California Code of Regulations and section 95663, Title 17 California Code of Regulations, as set forth in Attachment A hereto; to the incorporated "California Greenhouse Gas Exhaust Emission Standards and Test Procedures for 2014 and Subsequent Model Heavy-Duty Vehicles," as set forth in Attachment B hereto; and adopts the incorporated "California Standards and Test Procedures for New 2021 and Subsequent Model Heavy-Duty Zero-Emission Powertrains," as set forth in Attachment C hereto.

BE IT FURTHER RESOLVED that the adopted regulatory text may be further revised with non-substantial or grammatical changes, which will be added to the rulemaking record and indicated as such.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to finalize the Final Statement of Reasons, submit the completed rulemaking package to the Office of Administrative Law, and transmit the Notice of Decision with the Response to EA Comments to the Secretary of the Natural Resources Agency for posting.

BE IT FURTHER RESOLVED that the Board hereby determines, pursuant to section 209 of the Federal Clean Air Act, that the requirements related to the control of emissions adopted as part of the regulations adopted herein are, in the aggregate, at least as protective of public health and welfare as applicable federal standards, that California needs the adopted standards to meet compelling and extraordinary conditions of high concentrations of people and motor vehicles, vulnerability to climate change, and the geographic and climate conditions of the state, and that the adopted requirements are consistent with the provisions of sections 202(a) of the Clean Air Act.

BE IT FURTHER RESOLVED that the Board hereby determines that the regulations adopted herein will not cause California motor vehicle emission standards, in the aggregate, to be less protective of public health and welfare than applicable federal standards.

BE IT FURTHER RESOLVED that the Executive Officer shall, upon adoption, forward the regulations to the United States Environmental Protection Agency with a request for a waiver or confirmation that the regulations are within the scope of an existing waiver of federal preemption pursuant to section 209(b) or authorization pursuant to section 209(e)(2)(A) of the Clean Air Act, as appropriate.

I hereby certify that the above is a true and correct copy of Resolution 19-15 as adopted by the California Air Resources Board.

---

Tracy Jensen, Manager, Legal Office

Resolution 19-15

June 27, 2019

**Identification of Attachments to the Board Resolution**

- Attachment A\*:** Final Regulation Order for the Alternative Certification Requirements and Test Procedures for Heavy-Duty Electric and Fuel-Cell Vehicles and Proposed Standards and Test Procedures for Zero-Emission Powertrains (Zero-Emission Powertrain Certification Regulation) amendments to sections 1956.8, Title 13 and section 95663, Title 17, of the California Code of Regulations.
- Attachment B\*:** Zero-Emission Powertrain Certification Regulation amendments to the “California Greenhouse Gas Exhaust Emission Standards and Test Procedures for 2014 and Subsequent Model Heavy-Duty Vehicles.”
- Attachment C\*:** “California Standards and Test Procedures for New 2021 and Subsequent Model Heavy-Duty Zero-Emission Powertrains.
- Attachment D\*:** Findings and Statement of Overriding Considerations
- Attachment E\*:** *Final Environmental Analysis For the Proposed Zero-Emission Airport Shuttle Regulation and Zero-Emission Powertrain, Certification Regulation*, released to the public June 24, 2019.
- Attachment F\*:** *Response to Comments on the Draft Environmental Analysis Prepared for the Zero-Emission Airport Shuttle Regulation and Zero-Emission Powertrain Certification Regulation*, released to the public June 24, 2019.

**\*Attachments A, B, C, D, E, and F are NOT attached to the proposed resolution; they are simply described on this page.**