State of California
AIR RESOURCES BOARD

PROPOSED OPTIONAL REDUCED EMISSION STANDARDS FOR HEAVY-DUTY ENGINES

Resolution 13-52

December 12, 2013

Agenda Item No.: 13-11-1

WHEREAS, sections 39600 and 39601 of California's Health and Safety Code authorize the Air Resources Board (ARB 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, in section 43000 of the Health and Safety Code, the Legislature has declared that the emission of air pollutants from motor vehicles is the primary cause of air pollution in many parts of the State, and sections 39002 and 39003 of the Health and Safety Code charge the Board with the responsibility of air pollution control from motor vehicles;

WHEREAS, sections 43013, 43100, 43101, 43102, and 43104 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 43000.5(c) of the Health and Safety Code provides that the burden for achieving needed reductions in vehicle emissions should be distributed equitably among various classes of vehicles, including heavy-duty vehicles to accomplish improvements in both the emissions level and in-use performance and durability of all new motor vehicles;

WHEREAS, sections 43013(a) and (b) of the Health and Safety Code authorize the Board to adopt emission standards and in-use performance standards and other regulations for light-duty, medium-duty, and heavy-duty engines and vehicles that it finds to be necessary, cost-effective, and technologically feasible;

WHEREAS, in section 43013(h) of the Health and Safety Code, the Legislature has directed the Board to act as expeditiously as feasible to reduce nitrogen dioxide emissions from diesel vehicles, marine vessels, and other categories of vehicular and mobile sources which significantly contribute to air pollution problems;

WHEREAS, section 43018(a) of the Health and Safety Code directs the Board to endeavor to achieve the maximum degree of emission reduction possible from vehicular

and other mobile sources in order to accomplish the attainment of State ambient air quality standards at the earliest practicable date;

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, 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, ARB has regulated exhaust emissions of oxides of nitrogen (NOx) from gasoline (Otto-cycle) engines in heavy-duty vehicles since the 1973 model year, and has regulated exhaust emissions of NOx from heavy-duty diesel engines since the 1979 model year;

WHEREAS, ARB has established increasingly more stringent NOx emissions standards for heavy-duty engines, as evidenced by the primary NOx exhaust emissions standards for heavy-duty diesel engines that have decreased from 6.0 grams per brake horsepower hour (g/bhp-hr) for 1990 model year heavy-duty engines to 0.2 g/bhp-hr for 2010 and later model year engines;

WHEREAS, ARB also established optional NOx standards applicable to 1998 to 2003 model year heavy-duty engines to allow local air districts and ARB to preferentially provide incentive funding to the purchasers of cleaner trucks and to allow the generation of emission credits for use in local air district mobile source emission credit programs;

WHEREAS, ARB also established optional NOx + non-methane hydrocarbon (NMHC) standards applicable to 2002 to 2006 model year heavy-duty engines ranging from 1.8 g/bhp-hr to 0.3 g/bhp-hr, instead of the then applicable standard of 2.4 g/bhp-hr NOx+NMHC (or 2.5 g/bhp-hr with 0.5 NMHC cap);

WHEREAS, these optional standards allowed local air districts and ARB to preferentially provide incentive funding to purchasers of trucks with engines certified to the optional standards, enabled such purchasers to generate marketable emission reduction credits for use in local air district mobile source emission credit programs and helped to advance the development of emission reduction technologies;

WHEREAS, ARB presently does not have a mechanism in place to allow manufacturers to optionally certify heavy-duty engines to NOx standards more stringent than the applicable NOx standard of 0.2 g/bhp-hr;

WHEREAS, optional NOx standards would help advance the development of emission reduction technologies, incentivize manufacturers to develop engines with lower NOx emissions, generate near-term and long-term emission benefits resulting from reduced NOx emissions from heavy-duty engines, and would help California meet its obligations to improve ambient air quality and meet its State Implementation Plan commitments;

WHEREAS, ARB staff is therefore proposing a new regulation to establish the next generation of optional NOx emission standards for heavy-duty engines at 0.1 g/bhp-hr, 0.05 g/bhp-hr, and 0.02 g/bhp-hr;

WHEREAS, the proposed regulation would establish these voluntary standards below the current NOx engine emission standard, and help encourage development of more sensitive on-board diagnostic technology;

WHEREAS, the U.S. Environmental Protection Agency (U.S. EPA) has granted California a waiver of preemption for the 1998 through 2003 model year optional NOx standards and the 2002 through 2006 model year optional NOx standards under the federal Clean Air Act section 209(b);

WHEREAS, the proposed regulation would amend title 13, California Code of Regulations (CCR) section 1956.8, including the following proposed amended test procedure "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles," last amended April 18, 2013, incorporated by reference in title 13, CCR, 1956.8(b), and proposed amended test procedure "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines," last amended April 18, 2013, incorporated by reference in title 13, CCR, 1956.8(d);

WHEREAS, ARB staff prepared a staff report entitled "Initial Statement of Reasons (ISOR) for Proposed Rulemaking, Proposed Greenhouse Gas (GHG) Regulations for Medium- and Heavy-Duty Engines and Vehicles, Optional Reduced Emission Standards for Heavy-Duty Engines, and Amendments to the Heavy-Duty Tractor-Trailer GHG Regulation, the Diesel-Fueled Commercial Motor Vehicle Idling Rule and the Heavy-Duty Hybrid-Electric Vehicles Certification Procedures," which presents the rationale for the proposed amendments;

WHEREAS, the ISOR and proposed regulatory language for the proposed Optional Reduced Emission Standards for Heavy-Duty Engines were made available to the public for at least 45 days prior to the public hearing;

WHEREAS, the California Environmental Quality Act (CEQA) requires that a public agency not approve a project as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental impacts of such a project; in the event that specific economic, social, or other conditions make infeasible the alternatives or mitigation measures, the project may

be approved if it is determined that any remaining unavoidable significant impacts are acceptable due to overriding considerations;

WHEREAS, Public Resources Code section 21080.5 allows public agencies with regulatory programs to prepare a plan or other written document in lieu of an environmental impact report or negative declaration once the Secretary of the Resources Agency has certified the regulatory program;

WHEREAS, that portion of the ARB's regulatory program that involves the adoption, approval, amendment, or repeal of standards, rules, regulations, or plans has been certified by the Secretary of Resources Agency (CEQA Guidelines, section 15251(d));

WHEREAS, in accordance with ARB's certified regulatory program at title 17, CCR, section 60005 (b), and the policy and substantive requirements of CEQA, as part of the Initial Statement of Reasons (ISOR), ARB staff prepared an assessment of the potential for significant adverse and beneficial environmental impacts associated with the proposed regulation;

WHEREAS, the environmental analysis, circulated with the ISOR for 45 days, concluded the proposed amendments would result in no adverse impacts to the environment;

WHEREAS, written comments were received during the 45-day comment period that raise significant environmental issues;

WHEREAS, ARB staff reviewed written comments received during the 45-day comment period that raise significant environmental issues and prepared written responses to such comments that are set forth in Attachment E, entitled "Response to Comments on the Environmental Analysis Prepared for the Proposed Optional Reduced Emission Standards for Heavy-Duty Engines";

WHEREAS, the Board has reviewed and considered both the environmental analysis and the "Response to Comments on the Environmental Analysis Prepared for the Proposed Optional Reduced Emission Standards for Heavy-Duty Engines";

WHEREAS, the Board has considered the impact of the proposed amendments on the economy of the State and the potential for adverse economic impacts on California business enterprises and individuals;

WHEREAS, a public hearing and other administrative proceedings have been held in accordance with 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 information in the public record, including the ISOR, written comments, and testimony provided at the hearing, the Board finds that:

Medium- and heavy-duty vehicles greater than 8500 pounds gross vehicle weight rating are significant sources of NOx, particulate matter (PM), and GHG emissions in California, and emitted approximately 69 percent of the NOx emissions and approximately 38 percent of the PM emissions from on-road vehicles in California in 2013;

Heavy-duty trucks, buses, and motor homes emitted 23 percent of the GHG emissions from on-road vehicles and 8 percent of the GHG emissions from all sources in California in 2010;

Reducing criteria emissions from medium- and heavy-duty vehicles is an important element of ARB's programs to meet the heath based ambient air quality standards, and reduce the toxic risk from exposure to diesel PM;

The proposed regulation was developed in an open public process, in consultation with affected parties through a public workshop and numerous meetings, and other outreach efforts;

The proposed regulation would establish a set of optional NOx emission standards for heavy-duty engines at 0.1 g/bhp-hr, 0.05 g/bhp-hr, and 0.02 g/bhp-hr (i.e., 50 percent, 75 percent, and 90 percent lower than the current primary standard of 0.2 g/bhp-hr) and would allow manufacturers to elect to certify to any of the optional NOx standards or the existing mandatory 0.2 g/bhp-hr standard;

About 8 percent of model year 2012 engines have certification levels 30 percent or more below the optional 0.1 g/bhp-hr standard;

Numerous technologies exist which may enable manufacturers to further lower NOx emissions from heavy-duty engines;

ARB is currently funding a $1.6 million project to evaluate technologies and methods to lower NOx emissions from heavy-duty vehicles;

The proposed Optional Reduced Emission Standards for Heavy-Duty Engines could result in estimated NOx emission benefits of 0.6 to 1.2 tons per day (TPD) statewide in 2020, and 3.3 to 6.9 TPD in 2035 and could impose costs on engine manufacturers ranging from $36 to $279 million, depending on the level of participation by engine manufacturers;

The reporting requirements applicable to businesses in the proposed amendments are necessary for the health, safety, and welfare of the people of the State;

The economic and fiscal impacts of the proposed amendments have been analyzed as required by California law, and the conclusions and supporting

documentation for this analysis are set forth in the ISOR, as supplemented by staff's presentation at the hearing of this item;

No reasonable alternative considered, or that has otherwise been identified and brought to the attention of ARB, would be more effective at carrying out the purpose for which the amendments are proposed, or would be as effective and less burdensome to affected private persons and businesses than the proposed amendments;

On the basis of the whole record, including the environmental analysis included in the ISOR, there is no substantial evidence that the proposed regulation will result in any significant adverse impacts on the environment; and

The proposed amendments are consistent with ARB's environmental justice policies and do not disproportionately impact people of any race, culture, or income;

NOW, THEREFORE, BE IT RESOLVED that the Board approves the written responses to comments received during the 45-day comment period raising significant environmental issues that are set forth in Attachment E, "Response to Comments on the Environmental Analysis Prepared for the Proposed Optional Reduced Emission Standards for Heavy-Duty Engines."

BE IT FURTHER RESOLVED that the Board hereby approves for adoption the proposed regulation, which consists of amendments to title 13, CCR, section 1956.8, as set forth in Attachment A hereto; to the incorporated "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel-Engines and Vehicles," as set forth in Attachment B hereto; to the incorporated "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles," as set forth in Attachment C hereto, with the modifications set forth in Attachment D.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to make the modified regulatory language and any additional supporting documents and information available to the public for a period of at least 15 days, provided such modifications do not alter the conclusion of the environmental analysis, and provided that the Executive Officer shall consider such written comments as may be submitted during this period, shall make such further modifications as may be appropriate in light of the comments received, shall make those modifications available for public comment for at least 15-days, and shall present the regulation to the Board for further consideration if he determines that this is warranted. Upon the Executive Officer addressing the need for any additional conforming modifications as appropriate and making such modifications, if any, publicly available for comment, the Executive Officer shall take final action to adopt the regulation, as set forth in Attachments A, B, C, and D hereto and in any subsequent modifications that have been made publicly available for comment.

BE IT FURTHER RESOLVED if it is determined that any 15-day modifications to the regulation affect the conclusion of the environmental analysis, the Executive Officer shall prepare and circulate any additional environmental analysis to the extent required by ARB's regulations at title 17, CCR, sections 60001-60007, and/or prepare written responses to any comments received raising significant environmental issues to present to the Board for its consideration for approval along with the proposed Final Regulation Order.

BE IT FURTHER RESOLVED that the Board hereby determines that the regulation adopted herein will not cause California's 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 Board hereby finds that separate California emission standards and test procedures are necessary to meet compelling and extraordinary conditions.

BE IT FURTHER RESOLVED that the Board finds that the California emission standards and test procedures as adopted herein will not cause the California requirements to be inconsistent with section 202(a) of the federal Clean Air Act and raise no new issues affecting previous waiver determinations of the Administrator of U.S. EPA pursuant to section 209(b) of the federal Clean Air Act.

BE IT FURTHER RESOLVED that, to the extent such action is necessary, the Executive Officer shall, upon adoption, forward the regulation to U.S. EPA with a request for a waiver or confirmation that the regulation are within the scope of an existing waiver of federal preemption pursuant to section 209(b) of the federal Clean Air Act, as appropriate.

I hereby certify that the above is a true and correct copy of Resolution 13-52, as adopted by the Air Resources Board.

Tracy Jensen, Clerk of the Board

Resolution 13-52

December 12, 2013

Identification of Attachments to the Board Resolution

Attachment A*: Proposed "Regulation Order for Optional Low NOx Emission Standards," consisting of amendments to California Code of Regulations, title 13, section 1956.8, as set forth in Appendix I-C to the Staff Report: Initial Statement of Reasons, released October 23, 2013.

Attachment B*: Proposed Modifications to "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel-Engines and Vehicles," as set forth in Appendix I-C-1 to the Staff Report: Initial Statement of Reasons, released October 23, 2013.

Attachment C*: Proposed Modifications to "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles," as set forth in Appendix I-C-2 to the Staff Report: Initial Statement of Reasons, released October 23, 2013.

Attachment D: Staff's Suggested Modifications to the Original Proposal (Distributed at the December 12, 2013, ARB hearing)

Attachment E: Response to Comments on the Environmental Analysis Prepared for the Proposed Optional Reduced Emission Standards for Heavy-Duty Engines

*Attachments A through C are not attached to the proposed resolution; they are simply described on this page. Only the suggested modifications, Attachment D, are actually attached.