State of California
AIR RESOURCES BOARD

Resolution 06-28

October 19, 2006

Agenda Item No.: 06-9-4

WHEREAS, sections 39600 and 39601 of the Health and Safety Code authorize the Air Resources Board (the Board or ARB) 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, in sections 39002 and 39003 of the Health and Safety Code, has charged the Board with the responsibility of systematically addressing the serious air pollution problem caused by motor vehicles;

WHEREAS, sections 43013, 43101, and 43104 of the Health and Safety Code authorize the Board to adopt motor vehicle emission standards, in-use performance standards, and test procedures, which it finds to be necessary, cost-effective, and technologically feasible;

WHEREAS, section 43018 of the Health and Safety Code directs the Board to endeavor to achieve the maximum degree of emission reduction possible from motor vehicle sources to accomplish the attainment of state ambient air quality standards by the earliest practicable date;

WHEREAS, section 43806 of the Health and Safety Code directs the Board to adopt emission standards and procedures applicable to new engines used in publicly owned and privately owned public transit buses;

WHEREAS, the United States Environmental Protection Agency (U.S. EPA) has promulgated emission standards and programs to reduce emissions from urban transit buses, and those standards and programs can be found in title 40 of the Code of Federal Regulations, part 86;

WHEREAS, section 43701(b) of the Health and Safety Code requires the Board to adopt regulations that require heavy-duty diesel vehicles to utilize emission control equipment and alternative fuels to reduce emissions to the greatest extent feasible;

WHEREAS, section 39667 of the Health and Safety Code directs the Board to achieve the maximum possible reduction in public exposure to toxic air contaminants by

establishing emission standards for vehicular sources, including new and in-use motor vehicles and fuels;

WHEREAS, on August 27, 1998, following extensive scientific review and public hearings, and consistent with the conclusions of the Scientific Review Panel and the Office of Environmental Health Hazard Assessment, the Board formally identified particulate matter (PM) emissions from diesel-fueled engines as a toxic air contaminant and on September 28, 2000, approved a plan to reduce risk from diesel pollution by reducing harmful PM emissions from diesel engines;

WHEREAS, the Board, through the adoption of Resolution 98-49 on September 24, 1998, called on state, local, and federal agencies to join together to "clean the fleet," supported immediate and continuing efforts to replace diesel-fueled school and public urban transit buses with low-emission alternative-fuel buses, including the provision of necessary infrastructure and technical training, and directed the staff to distribute this resolution to multiple affected parties;

WHEREAS, at a public hearing on February 24, 2000, the Board adopted Resolution 00-2 to achieve near-term and long-term emission reductions from urban transit buses through a multifaceted fleet rule designed to reduce emissions of oxides of nitrogen (NOx) and diesel PM by mandating a lower fleet average of NOx emissions; by requiring engines to be retrofitted with devices to reduce diesel PM emissions by at least 85 percent; by requiring engine manufacturers to significantly reduce the allowable emissions from certified bus engines; by requiring that transit agencies switch to low sulfur (less than 15 parts per million) diesel fuel; and by requiring transit agencies to purchase specified percentages of zero emission buses;

WHEREAS, the Board, through Resolution 00-2, directed the Executive Officer to work with transit agencies during implementation of the regulations, including provisions of the fleet rule, and to report to the Board regularly on transit agencies' progress in implementing the regulations;

WHEREAS, at a public hearing on June 24, 2004, the Board adopted Resolution 04-19 revising the zero emission bus demonstration project requirements and timetable, and adding provisions that would allow manufacturers to sell diesel hybrid-electric buses certified to a 2004-2006 model year exhaust emission standard of 1.8 g/bhp-hr NOx and 0.01 g/bhp-hr PM and that would allow transit agencies on the diesel path to purchase diesel hybrid electric buses so long as they satisfy requirements to reduce NOx emissions from their other buses;

WHEREAS, the staff has proposed amendments to the California Zero Emission Bus (ZBus) Regulation that include postponing the purchase requirement for zero emission buses by three years for transit agencies on the diesel path, and one to two years for those agencies on the alternative path, and requiring an advanced demonstration project to offset some of the emission losses resulting from the postponement; the

proposed amendments make the changes to title 13, California Code of Regulations, sections 2023.1, 2023.3, and 2023.4 set forth in Attachment A hereto;

WHEREAS, the ARB staff conducted public workshops on October 27, 2005 and January 27, April 14, and June 21, 2006, as well as public outreach meetings and several focused stakeholder meetings throughout the rulemaking process, in order to include the public and affected stakeholders in the process for regulatory development;

WHEREAS, a staff report and draft regulatory language were published and made available to the public for at least 45 days prior to this Board hearing;

WHEREAS, the California Environmental Quality Act and Board regulations require that no project which may have significant adverse environmental impacts be adopted as originally proposed if feasible alternatives or mitigation measures are available to reduce or eliminate such impacts;

WHEREAS, the Board has considered the impact of this proposed regulatory action on the economy of the state;

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;

WHEREAS, based on the information in the public record, including the staff report and testimony provided at the hearing, the Board finds that:

1. Heavy-duty vehicles operated by transit agencies, on a per vehicle basis, contribute relatively high emissions of oxides of nitrogen (NOx) and particulate matter (PM) and operate in the more heavily congested areas where air quality is critical and direct exposure to diesel particulates occurs for large numbers of people;

2. Excessive diesel PM emissions are a significant source of toxic air contaminants, comprising approximately 70 percent of all toxic air contaminant emissions in California;

3. An advanced demonstration provision for Zero Emission Buses is necessary and appropriate in order to continue technology advancement and reduce oxides of nitrogen and PM emissions;

4. The proposed delays in the zero emission bus purchase requirements are necessary and appropriate in light of the cost, availability, and reliability of zero emission buses, and the durability or warranty of fuel cells used in bus applications will maintain the Board's commitment to bring innovative technology at the lowest technically feasible emission standard to California's marketplace;

5. No alternative considered would be more effective, or equally effective and less costly, in achieving the regulatory objectives sought than the proposed amendments.

6. The reporting requirements of the regulatory amendments which apply to businesses are necessary for the health, safety, and welfare of the people of the State.

7. The amendments approved herein, including the delay of the current purchase requirements and the addition of the Advanced Demonstration requirements would prevent the expenditure by affected transit districts of over $59 million from 2008 through 2012 (including infrastructure costs);

WHEREAS, pursuant to the requirements of the California Environmental Quality Act and the Board's regulations, the Board further finds that:

1. Compared to the existing regulation, under staff's Scenario 1 the proposed amendments will reduce the statewide emission benefits from the ZBus regulation in 2010 by 2.15 tons per year (tpy) of NOx, 0.08 tpy of PM, 2.21 tpy of carbon monoxide (CO) and 0.053 tpy of hydrocarbons (HC); the reduction in emission benefits would be slightly greater in 2015;

2. Compared to the existing regulation, under staff's Scenario 1 the proposed amendments would reduce the statewide emission benefits from the ZBus regulation In the South Coast Air Basin in 2010 by 0.652 tpy of NOx, 0.08 tpy of PM, 2.21 tpy of CO and 0.053 tpy of hydrocarbons; the reduction in emission benefits would be less in 2015;

3. The ZBus regulation with the amendments approved herein will achieve emissions reductions of approximately 19 tpy of NOx, 1.1 tpy of PM, 31 tpy of CO and 0.7 tpy of HC in 2020, thereby providing an overall air quality benefit;

4. The emissions impacts identified in paragraphs 1 and 2 above constitute small but significant adverse environmental impacts; the new requirements for an Advanced Demonstration Project will mitigate the adverse impacts to the maximum feasible extent and no feasible alternatives are available; the remaining adverse environmental impacts are justified by overriding considerations in that, due to the current high cost of ZBuses and their unproven durability and reliability, imposition of the existing regulation without the amendments would severely impact transit agency operations and their ability to serve the public.

NOW, THEREFORE, BE IT RESOLVED, that the Board approves the amendments to sections 2023.1, 2023.3, and 2023.4, title 13, California Code of Regulations, as set forth in Attachment A hereto, with the modifications set forth in Attachment B hereto, and with the following additional modifications: (1) allowing a three to five year transition period, as appropriate, for a transit agency that becomes subject to the ZBus purchase requirement due to the growth of its urban bus fleet to beyond 200 buses after the initial

determination of applicability, and (2) delay the purchase requirements for a transit agencies on the alternative fuel path until 2012 whether or not they conduct an advanced demonstration program.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to incorporate the modifications described in Attachment B into the amendments contained in Attachment A, with such other conforming modifications as may be appropriate, and then to adopt the modified amendments, after making the modified regulatory language available for supplemental public comment for a period of at least 15 days as required by Government Code section 11346.8, provided that the Executive Officer shall consider all written comments regarding the modifications as may be submitted during this period, shall make modifications as may be appropriate in light of the comments received, and shall present the regulations to the Board for further consideration if she determines that this is warranted.

BE IT FURTHER RESOLVED that staff shall update the Board with its assessment of zero emission bus technology and its readiness for commercialization, on or before July 2009; the staff shall consider the implementation listed below, as well as any other relevant factors, in completing its evaluation and recommendation to the Board.

	Implementation Criteria
Purchase Cost Fuel Cell vs. Electric Trolley Bus	1.25 : 1
Fuel Cell Durability or Warranty	20,000 hours
Reliability (Miles between Propulsion Related Road Calls)	10,000 miles

BE IT FURTHER RESOLVED that the actions here today are not applicable or transferable to the zero emission vehicle program.

BE IT FURTHER RESOLVED that the Board hereby determines that the amendments 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, will not cause the California emission standards and test procedures for new motor vehicles and engines to be inconsistent with section 202(a) of the 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 Clean Air Act.

BE IT FURTHER RESOLVED that to the extent it is necessary, the Executive Officer shall, upon adoption, forward the amendments to U.S. EPA with a request for confirmation that the amendments 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 06-28, as adopted by the Air Resources Board.

Lori Andreoni

Lori Andreoni, Clerk of the Board

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Identification of the Attachments to the Resolution

Attachment A: Proposed Regulation Order, Amendments to Sections 2023.1, 2023.3, and 2023.4, Title 13, California Code of Regulations, as set forth in Appendix A to the Staff Report: Initial Statement of Reasons, released September 1, 2006.

Attachment B: Staff's Suggested Modifications to the Original Proposal, as made available at the October 19, 2006 hearing.

State of California
Environmental Protection Agency
AIR RESOURCES BOARD

Notice of Decision and Response to Significant Environmental Issues

Item:	Notice of Public Hearing to Consider Adoption of Amendments to the Zero Emission Bus Regulation
Approved By:	Resolution 06-28
Adopted by:	Executive Order R-07-014
Agenda Item:	06-9-4
Public Hearing Date:	October 19, 2006
Issuing Authority:	Air Resources Board
Comment:	No comments were received identifying any significant environmental issues pertaining to this item. The Staff Report identified no adverse environmental effects.
Response:	N/A
Certified:	Trini Balcazar Trini Balcazar Regulations Coordinator
Date:	8/21/2007

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