State of California
AIR RESOURCES BOARD

Resolution 01-31

September 20, 2001

Agenda Item No.: 01-7-2

WHEREAS, sections 39600 and 39601 of the Health and Safety Code authorize the Air Resources Board (the "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, 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 direct 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, 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 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 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, 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 emissions from diesel-fueled engines as a toxic air contaminant and on

September 28, 2000, approved a plan to reduce risk from diesel particulate pollution by reducing harmful particulate matter 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, 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 February 24, 2000, the Board adopted Resolution 00-2 to achieve near-term and long-term emission reductions from urban transit buses through a fleet rule designed to reduce emissions of oxides of nitrogen (NOx) and diesel particulate matter (PM) by mandating a lower fleet average of NOx emissions; by requiring engines 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 a specified percentage of low sulfur (less than 15 parts per million) diesel fuel; and by requiring transit agencies to purchase specified percentages of zero emission buses when adding to their fleets;

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, the regulations allow both diesel and alternative fuel fleet operators to apply for an exemption from the Model Year 2004-2006 NOx standards if specified criteria are met;

WHEREAS, the Board, through discussion at the February 24, 2000, public hearing and Resolution 00-2, directed the Executive Officer to report to the Board on implementation of emission reduction strategies as an alternative to compliance with the 2004 standards, including presenting recommendations based on its analysis of the first exemption application received, and on the status of demonstrations of advanced aftertreatment systems;

WHEREAS, the Board, through Resolution 00-2, directed the Executive Officer report to the Board on the development a test procedure for the evaluation of hybrid electric bus emissions;

WHEREAS, based on the information in the public record, the Board finds that:

1. Seventy transit agencies operating 6,698 diesel buses and 1,864 alternative-fuel buses are subject to the regulation, of which 43, or 61 percent, chose the diesel path and 27, or 39 percent, chose the alternative-fuel path.

2. As of August 1, 2001, 68 of the 70 transit agencies had submitted their fleet averages of NOx as of January 1, 2001, and projected fleet averages as of October 1, 2002, as required by the regulation. Of these 68 transit agencies, approximately 80 percent either comply with the required NOx fleet average of 4.8 grams per brake horsepower-hour (g/bhp-hr) as of January 1, 2001, or report that they will as of October 1, 2002.

3. Fifteen transit agencies have applied as required by June 30, 2001, for an exemption from the requirement that model years 2004 though 2006 transit bus engines as purchased be certified to emit no more than 0.5 g/bhp-hr NOx, but of those 15 only one transit agency, Santa Clara Valley Transportation Authority, submitted complete plans detailing how it would achieve greater NOx emission benefits through 2015, and no transit agency has submitted a declaration that it is demonstrating or contracted to demonstrate advanced NOx aftertreatment technology.

4. Fourteen transit agencies that submitted applications for exemption have requested additional time and assistance from the Executive Officer to develop plans showing how each would achieve greater NOx emission benefits through 2015, as required in the regulation, and all 15 transit agencies have requested additional time to demonstrate advanced NOx aftertreatment technology.

5. The plan submitted by Santa Clara Valley Transportation Authority to achieve greater NOx emission benefits through 2015 provides a good framework that can be followed by other transit agencies.

6. As of August 2, 2001, the Executive Officer has verified that two devices manufactured by Engelhard Corporation and Johnson Matthey, respectively, reduce diesel particulate matter emissions by 85 percent or more and meet the additional requirements for verification, including durability and warranty, and that these devices may be installed and operated on certain Cummins and Detroit Diesel Corporation bus engines to meet the requirement of this regulation, but that thus far no retrofit devices have been certified for any bus engines older than model year 1995.

7. Advanced NOx aftertreatment systems that achieve significant reductions in NOx emissions require additional research and development, and that while the June 30, 2001, deadline for transit agencies to be demonstrating, or contracted to demonstrate, advanced NOx aftertreatment systems is a premature deadline that should be extended, the demonstration requirement should be retained because demonstration of the technology in transit buses will assist California in meeting its NOx emission reduction goals;

8. The Executive Officer is making progress in developing a test procedure for the evaluation of hybrid electric bus emissions; and

9. The Public Transit Bus Fleet Rule Status Report included as Attachment A to this resolution and incorporated by references herein adequately sets forth the status of implementation of the Public Transit Bus Fleet Rule, as required in Resolution 00-2.

NOW, THEREFORE, BE IT RESOLVED, that the Board hereby approves the Public Transit Bus Fleet Rule Status Report.

BE IT FURTHER RESOLVED, that the Board expresses extreme disappointment at the lack of progress by engine manufacturers and diesel-path transit agencies towards achieving advanced diesel bus engine technology and reiterates its resolve to implement and enforce the requirements of the urban transit bus regulations adopted by the Board February 24, 2000.

BE IT FURTHER RESOLVED, that the Board directs the Executive Officer to work with transit agencies that have reported that they will not meet the required NOx fleet average of 4.8 g/bhp-hr by October 1, 2002, to assist them in achieving compliance, and to proceed with enforcement actions against those transit agencies that do not comply by October 1, 2002.

BE IT FURTHER RESOLVED, that the Board directs the Executive Officer to assist rural and smaller transit agencies in identifying, assessing, and implementing economies of scale and other strategies in infrastructure development to support alternative-fuel bus fleets.

BE IT FURTHER RESOLVED, that the Board directs the Executive Officer to make the necessary regulatory changes to allow transit agencies that applied for an exemption by June 30, 2001, additional time to demonstrate advanced NOx aftertreatment technology; to require transit agencies to commit resources to a demonstration project as of December 31, 2001; and to require those transit agencies to have initiated advanced NOx aftertreatment demonstrations by December 31, 2002; or the Executive Officer shall rescind any conditional approvals granted previously.

BE IT FURTHER RESOLVED, that the Board directs the Executive Officer to allow each transit agency that applied for an exemption the option of performing a joint demonstration of advanced NOx aftertreatment as follows: a joint project may involve all or several transit agencies that applied for an exemption, include at least three buses operating in fare service, and demonstrate NOx aftertreatment technology that will offer commercial potential (i.e., reduce NOx emissions by 70 percent or more). Any transit agency that elects not to participate in a joint project shall demonstrate advanced NOx aftertreatment technology that offers commercial potential in at least one bus operating in fare service.

BE IT FURTHER RESOLVED, that the Board directs the Executive Officer to convene a delegation to meet with representatives of the Engine Manufacturers Association to assess and encourage efforts to advance the status of NOx emission control technology and to report back to the Board by March, 2002, the results of these efforts.

BE IT FURTHER RESOLVED, that the Board directs the Executive Officer to continue development of a test procedure for the evaluation of hybrid electric bus emissions and to report back to the Board by late-2002 on progress in this effort.

BE IT FURTHER RESOLVED, that the Board directs the Executive Officer to be prepared to introduce a proposal to eliminate the diesel path option in the urban transit bus fleet rule if efforts towards clean diesel technology and compliance with low NOx emission standards do not improve considerably in the next six months.

I hereby certify that the above is a true and correct copy of Resolution 01-31, as adopted by the Air Resources Board.

Marie Kavan

Marie Kavan, Clerk of the Board