State of California
AIR RESOURCES BOARD

Resolution 08-24

March 27, 2008

Agenda Item No.: 08-3-5

WHEREAS, sections 39600 and 39601 of the Health and Safety Code authorize Air Resources Board (ARB or the Board) to adopt standards, rules and regulations and to do so 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, 43101, and 43104 of the Health and Safety Cost authorize the Board to adopt emission standards and test procedures to control air pollution caused by motor vehicles;

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 and performance improvements;

WHEREAS, section 39667 of the Health and Safety Code directs the Board to consider revisions to ARB's 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, the Board's California State Implementation Plan (SIP) for ozone establishes the state strategy for attaining the ambient air quality standard for ozone in all areas of the state as required by federal law; as part of the mobile source element developed by ARB, the SIP relies on the California Low-Emission Vehicle (LEV) program to provide significant reductions of ozone precursor pollutant emissions from passenger cars and light-duty trucks;

WHEREAS, the California LEV program includes a Zero Emission Vehicle (ZEV) element under which at least 11 percent of the passenger cars and lightest light-duty trucks produced by large or intermediate-volume manufacturers and delivered for sale in California in 2009 must nominally be ZEVs;

WHEREAS, large volume manufacturers are allowed to satisfy up to 6 percent of their ZEV requirement with larger numbers of partial ZEV allowance vehicles (PZEVs) reflecting near-zero emitting technologies, and intermediate volume manufacturers may meet the entire obligation via this route; the ZEV regulation also includes a number of credit generation and trading components that provide significant flexibility in meeting the requirements;

WHEREAS, true or pure ZEVs are often referred to as the "gold" category as they reduce tailpipe or direct emission criteria pollutants, toxic pollutant emissions, and climate change emissions to the maximum feasible extent; advanced technology partial allowance zero emission vehicles (AT PZEV) are referred to as the "silver" category; and PZEVs are referred to as the "bronze" category;

WHEREAS, following an April 2003 hearing, ARB adopted amendments to the ZEV regulations designed to maintain progress towards the commercialization of ZEVs while recognizing near-term constraints due to cost, lead-time, and technical challenges and also resolving legal issues pertaining to the program;

WHEREAS, the Board also directed at its April 2003 Board hearing that an Independent Expert Panel (Panel) convene and in consultation with other experts and relevant parties, to report to he Board on the status of ZEV technologies and the readiness of various technologies for the market and consumer acceptance;

WHEREAS, the Board at its May 2007 Board hearing, in consideration of the Panel's report of its findings and conclusions on the state of ZEV technologies and their readiness for market and consumer acceptance, and staff's comments on the same, directed staff to propose modifications to the ZEV regulation, including:

- Adjust the numbers of required ZEVs as appropriate to reflect the current state of technology;

- Adjust credits for more even treatment of battery electric vehicles (EV);

- Include plug-in hybrid EV (PHEV) as appropriate to encourage commercialization;

- Consider increasing the credit value for neighborhood electric vehicles (NEV);

- Consider extending the "travel provision" post-2011;

- Encourage the production of vehicles meeting pollutant emissions far below PZEV standards; and

- Take a broad legal view regarding the "disclosure of credits" issues in order to achieve a transparent public process;

WHEREAS, at the May 2007 hearing, the Board found that while some changes to the ZEV regulations were needed, the program overall remained effective and useful in reducing both near-term and long-term emissions from mobile sources;

WHEREAS, to address public needs for data, transparency, and a pending request for disclosure of ZEV credit and production records, the Board directed at its January 24, 2008 public meeting that the ZEV regulations include provisions to allow for disclosure of individual manufacturer's credits and production data going forward, in part to assure the public's ability to assess compliance with the ZEV regulations;

WHEREAS, ARB staff conducted one public workshop in July 2007, released concepts for public review, and held several focused stakeholder meetings throughout the rulemaking process, in order to involve the public and affected stakeholders in the regulatory development process;

WHEREAS, staff has taken the Panel's review and recommendations into consideration, as well as stakeholder input, in developing the proposed amendments to the ZEV regulations;

WHEREAS, in conjunction with a public hearing notice published February 8, 2008, staff proposed substantive amendments to the ZEV regulation and to the ZEV Standards and Test Procedures, as set forth in Attachment A hereto; the Board approved the staff proposal included the following:

- Combining the Base Path and Alternative Path requirements into a New Path in 2012 and subsequent model years where the ZEV obligation and options to use other vehicle types are expressed as annual percentage obligations and options;

- Establishing a new Type IV ZEV category to recognize longer range ZEVs and adjusting ZEV credits such that Type III ZEVs earn 4 credits and Type IV ZEVs earn 5 credits through 2017;

- Modifying the credit banking provisions under the proposed "New Path" to be consistent with the existing provisions contained in the Alternative Path which allow compliance over a three-year window;

- Eliminating the cap on the use of full-function and city battery electric vehicles within the Alternative Compliance Path for the 2009 – 2011 timeframe, and within the New Path beginning in 2012; changing the ratio for substitution for each vehicle type to be consistent with the credits earned by the vehicle rather than a separate ratio established only for pure ZEV obligation compliance;

- Creating a new Type I.5 ZEV to recognize opportunity for a marketable longer range city EV;

- Modifying the AT PZEV requirements, primarily to address issues associated with plug-in hybrid-electric vehicles; including the deployment of "blended" hybrid electric vehicles through an equivalent all electric range (EAER) credit, adjusting the credits for advanced componentry and fuel-cycle emissions, and other conforming changes;

- Doubling the existing credit for neighborhood electric vehicles (NEV) to 0.3 credits per vehicle to reflect the vehicle's positive environmental benefits but limited functionality compared with full-function battery or fuel cell EVs;

- Extending the provision that allows Type III ZEVs and adding Type IV ZEVs placed in any state that has adopted California's ZEV program to count towards California's ZEV requirement through 2017; including Type II battery EVs within the provision but sunsetting the application of this provision for these vehicles in 2014;

- Allowing that the value of ZEV credits generated in any state administering the California ZEV requirements pursuant to section 177 of the Clean Air Act shall be scaled by the ratio of total large volume manufacturer sales in the state receiving credit for the subject model year to total large volume manufacturer sales in California for the same model year;

- Requiring that all production data be publicly available starting with the 2009 model year and bank balances to be publicly available starting in 2010 model year;

WHEREAS, in conjunction with a public hearing notice published February 8, 008, staff proposed other substantive amendments to the ZEV regulation and to the ZEV Standards and Test Procedures, as set forth in Attachment B hereto and as presented by staff at the public hearing; the Board directed the following modifications to the staff proposal:

- Creating a new option within the new path gold requirement for ZEVs during the 2012-2014 model years, by requiring a minimum 30% of the gold requirement to be met with pure ZEVs, approximately 7,500 vehicles, and allowing the rest of the gold requirement, the remaining 70%, approximately 58,000 vehicles, to be met with enhanced AT PZEVs, which are AT PZEVs that utilize a ZEV fuel such as hydrogen or electricity, for example PHEVs or hydrogen internal combustion engine vehicles; this would increase the staff proposal of a 10% minimum floor option, or 2,500 pure ZEVs, and with the rest of the gold requirement, 90% or 75,000, allowed to be met with enhanced AT PZEVs

- Creating a new Type V ZEV earning 7 credits and defined as a ZEV with a 300 mile or greater range and fast refueling capabilities;

- Making the ZEV credit banks of manufacturers fully transparent, including trades, beginning in model year 2010.

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

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

Using the Mobile Source Emission Inventory (EMFAC2002), the ZEV program compared to a vehicle program with no ZEV component results in a net reduction of about 14 tons per day of direct emission of reactive organic gases (ROG) and oxides of nitrogen (NOx) for 2020, and a net reduction of 15.52 tons per day of direct emission of ROG and NOx for 2030;

Using the Greenhouse gases, Regulated Emissions, and Energy use in Transportation model, the proposed amendments provide an estimated lifetime emission benefit of 3,400 tons of ROG plus NOx and of 1,434,765 tons of climate change emissions for the 2012 to 2014 timeframe, and an additional estimated emission benefit of 2,000 tons of ROG plus NOx and of 2,100,000 tons of climate change emissions for the 2015 to 2017 timeframe;

The long-term cost of ZEV technology is expected to decline beyond the original cost estimates, based on ARB's overall experiences with prior vehicular air

pollution control programs and the level of automakers' multi-billion dollar investments in developing fuel cell technology, which would not exist or continue without a belief on the part of automakers that there is along-term business case to be made for the profitable mass production of fuel cell vehicles.

NOW, THEREFORE, BE IT RESOLVED that, the Board approves adoption of title 13, California Code of Regulations (CCR), sections 1900, 1961, 1962, and 1962.1 and the incorporated "California Exhaust Emission Standards and Test Procedures for 2005 and Subsequent Model Zero-Emission Vehicles, and 2001 and Subsequent Model Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck, and Medium-Duty Vehicle Classes;" and the adoption of a new title 13, CCR, section 1962.1 and the incorporated "California Exhaust Emission Standards and Test Procedures for 2009 and Subsequent Model Zero-Emission Vehicles" along with other specific modifications;

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, along with the modifications described herein and such other conforming modifications as may be appropriate, as well as consider the following items to determine further necessary modifications:

- Granting additional credit for PHEVs that can drive the US06 cycle on electricity;

- Reviewing the comments of the Union of Concerned Scientists and the Natural Resources Defense Council (submitted March 26, 2008) regarding potential changes to the regulations, and proposing revisions if appropriate;

- Applying a multiplier to ZEV credits earned in 2009-2011 that are used to meet non-gold obligations for IVMs, in order to assure there is no disincentive to produce gold vehicles; and

- Allowing IVMs to accrue gold credits for use up to three years after the transition to large manufacturer status.

BE IT FURTHER RESOLVED that the Board directs staff 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 he determines that this is warranted.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to consider all relevant comments submitted during the supplemental comment period, and incorporate into the amendments any additional modifications he determines to be

appropriate, making the modifications available for additional public comment as required by the California Administrative Procedure Act;

BE IT FURTHER RESOLVED that the Board directs staff to review the ZEV, LEV, and Pavely programs from the perspective of being able to reduce smog-forming pollution, to address the problem of the state's contribution to global warming, and to reduce California's dependence on petroleum;

BE IT FURTHER RESOLVED that the Board directs staff to redesign the 2015 and subsequent model-year requirements for the ZEV program: strengthening further the program requirement and focusing the program exclusively on the gold requirement, that is battery, fuel-cell, and enhanced AT PZEV technologies; ensuring California as the central location for moving advanced, low GHG technology vehicles from the laboratory and demonstration phase to commercialization, where they are critical to achieving the Governor's GHG emission reduction goals; and looking more specifically at blended plug-in hybrid credit being based on different parameters such as battery energy capacity rather and range; and to return to the Board as soon as possible, with a goal of returning to the Board with a proposal by the end of 2009;

BE IT FURTHER RESOLVED that the Board directs staff to develop a program to further the availability of alternative fuels and infrastructure, and return to the Board with regulations, as appropriate;

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, are needed to meet compelling and extraordinary conditions, 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 the Executive Officer shall, upon adoption, forward the amended regulations to the U.S. Environmental Protection Agency with a request either for a waiver of federal preemption pursuant to section 209(b) of the Clean Air Act, or a confirmation that the amendments are within the scope of previous waivers.

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Office of the Secretary

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RESOURCES AGENCY OF CALIFORNIA

I hereby certify that the above is a true and correct copy of Resolution 08-24, as adopted by the Air Resources Board.

Lori Andreoni

Lori Andreoni, Clerk of the Board

Resolution 08-24

March 27, 2008

Identification of the Attachments to the Resolution

Attachment A: Sections 1900, 1961, 1962, and 1962.1 and the incorporated "California Exhaust Emission Standards and Test Procedures for 2005 and Subsequent Model Zero-Emission Vehicles, and 2001 and Subsequent Model Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck, and Medium-Duty Vehicle Classes;" and the new title 13, CCR, section 1962.1 and the incorporated "California Exhaust Emission Standards and Test Procedures for 2009 and Subsequent Model Zero-Emission Vehicles", as set forth in Appendix A to the Staff Report: Initial Statement of Reasons, released February 8, 2008.

Attachment B: Staff's Suggested Modifications to the regulations and incorporated test procedures.

ATTACHMENT B

PROPOSED MODIFICATIONS TO STAFF PROPOSAL

- ***Requirement for the 2009-2011 Model Years.*** A large volume manufacturer electing to be subject to the alternative compliance requirements during model years 2009 through 2011 must produce, deliver for sale, and place in service in California enough 2009-2011 model-year Type III ZEVs to generate ZEV credits sufficient to meet a cumulative percentage ZEV requirement of 0.84 percent of the manufacturer's average annual California sales of PCs, LDT1s, and 68 percent of LDT2s over the three year period from model years 2003 through 2005, or submit an equivalent number of credits generated by such vehicles. The manufacturer may meet this requirement with [i] 2009-2011 model-year Type I, I.5, II, III, or IV ZEVs, provided that 2 Type I ZEVs or 1.6 Type I.5 ZEVs, or 1.33 Type II ZEVs or 0.8 Type IV ZEVs will equal one Type III ZEV and [ii] 1997-2003 model-year ZEVs that qualify for an extended service multiplier under section 1962.1(f) for a year primarily during calendar years 2009-2011, provided that 33 years of such a multiplier will equal one Type III ZEV. Manufacturers may elect, on an annual basis, to determine their alternative requirement using either the prior 4th, 5th, and 6th model years method or the current year method.

- ZEV credits generated from production by an intermediate volume manufacturer prior to being subject to large volume manufacturer requirements may be carried forward and applied to the first three years of meeting ZEV requirements as a large volume manufacturer.

- The value of ZEV credits generated in any state that is administering the California ZEV requirements pursuant to section 177 of the Clean Air Act shall be multiplied by the ratio of the total large volume manufacturer sales in such state for the subject model year to the total large volume manufacturer sales in California for the same model year.

- ZEV credits for advanced technology demonstration projects may be earned for up to 25 vehicles in a demonstration program.