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Air Resources Board

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Gray Davis
Governor

February 8, 2001

Mailout No. MSC 01-03

TO: ALL INTERESTED PARTIES

SUBJECT: PUBLIC WORKSHOP TO DISCUSS PROPOSED RECOMMENDATIONS
TO ZERO-EMISSION VEHICLE REGULATIONS FOR ELECTRIC
VEHICLE CHARGING STANDARDS AND OTHER ITEMS

In 1990 the California Air Resources Board (ARB or Board) established the Zero-Emission Vehicle (ZEV) requirements. At the January 25, 2001, Board hearing, the Board adopted several changes to the ZEV regulations that modify the number of vehicles required and will include a variety of advanced technology vehicles and heavier trucks. These changes will result in an increase in the number of ZEVs and advanced technology vehicles over time. A few issues, however, were not resolved and the Board directed staff to investigate these issues and propose recommendations at a public hearing to be held on June 21-22, 2001. ARB staff will be investigating and proposing recommendations related to the following ZEV regulations:

- Battery electric vehicle (EV) charger standardization
- Definition of multi-manufacturer arrangements with regard to manufacturer volume classification
- ZEV credits for other vehicle types not currently addressed

As part of the process of developing these proposals, staff will hold a public workshop to receive input on staff's preliminary recommendations. This notice is to invite your participation in this process. An evening session is included to encourage public participation, including drivers of EVs, in the regulatory process. Details of the workshop are as follows:

Date: February 27, 2001

Time: Other Items 10 p.m. to 1 p.m.
Standardized Charging 2 p.m. to 5 p.m.
6 p.m. to 8 p.m.

Location: Air Resources Board
9528 Telstar Avenue
El Monte, California 91731
Auditorium, Annex IV

Staff Contact: Gayle M. Sweigert, (916) 322-6923 (gsweiger@arb.ca.gov)

California Environmental Protection Agency

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For a copy of the ZEV Infrastructure Report, please visit our web site located at <http://www.arb.ca.gov/msprog/zevprog/charging/charging.htm> or call Ms. Ibyang Rivera at (916) 322-4223 or via e-mail at irivera@arb.ca.gov. The workshop agenda and related documents will be made available prior to the workshop on ARB web site listed above.

Also please note that there will be a public workshop to discuss the development and implementation of public outreach and education for ZEVs on February 26, 2001. For more information on this workshop, please see our web site at <http://www.arb.ca.gov/msprog/zevprog/outreach/outreach.htm>.

STANDARDIZED CHARGING SYSTEM

Air quality in California has improved dramatically over the past 25 years, largely due to continued progress in controlling pollution from motor vehicles. Despite this progress, the number of vehicles in California continues to grow, and Californians are driving an ever-increasing number of miles. The result is that mobile sources are still responsible for over half the ozone-forming emissions in California. The ZEV program is a critical part of ARB's long-range vision to meet State and federal-health based air quality standards, which continue to be exceeded in all of California's metropolitan areas.

EV infrastructure, including public infrastructure, is on-track given the current number of EVs on the road. Currently, there are just over 2,000 EVs in California and over 3,000 chargers (including nearly 1,000 public chargers). However, home and public infrastructure will need to expand significantly to keep pace with demand in the future. Over the next two years (2001 and 2002) we expect the number of EVs to nearly double to an estimated 4,000. In 2003 we expect the number to double again to an estimated total of 8,000 EVs. Between 2003 and 2010 the number of EVs is estimated to be as high as 21,000, representing an approximate ten-fold increase in the next ten years.

Several public/private working groups have made considerable progress over the years in the area of EV chargers and infrastructure. Technical and safety standards have been developed and implemented. However, one area in which progress has not been made is in the standardization of chargers. The six major auto manufacturers that have sold EVs in the last two years have used four different chargers. This issue is likely to create concerns among consumers and therefore limit EV marketability as we move forward. Significant reductions in charger costs, in general, have not been realized yet. Their high costs can be partly attributed to several manufacturers producing small volumes of chargers.

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There are currently two general types of chargers, conductive and inductive, each with two types of designs. Not having a single charging system requires installing both conductive and inductive chargers, increasing the cost of maintaining and expanding the public charging network. With the large expansion of EVs projected over the years, it is important that the industry move quickly toward a single charging system.

In choosing a single charging system, provisions should be made that provide for continued support of the de-selected charging technology prior to full implementation of a new standard. Vehicles using the non-standard charging technology should not be "stranded" from access to public charging. In addition, the following issues should be taken into consideration:

- Current charger cost, and potential for cost reductions
- Charger performance; especially charger efficiency, durability, and safety considerations
- Warranty and manufacturer support
- Suitability for high power (level 3), high power Alternate Current (level 2+) and low power (level 1) charging applications
- The prospects for multiple manufacturers to enter the market

At the workshop, these issues will be addressed and staff will propose a recommendation to adopt a single charging system.

CREDITS FOR OTHER VEHICLES

There are several types of vehicles that various parties have requested be included in the ZEV requirements and given ZEV credits. These types of vehicles include but are not limited to enclosed motorcycles and heavy-duty vehicles such as buses. There are several pros and cons to including other vehicle types in the ZEV requirements. One benefit is that there are real in-use emissions benefits associated with these vehicles. A second benefit is to encourage and reward manufacturers for manufacturing an EV. By rewarding/crediting manufacturers for other vehicle types, an increase in the number of ZEV components such as batteries will occur, reducing the cost of components. Another benefit is by having a variety of other vehicle types on the road, there will be an increase in public exposure and interest of ZEVs. However, by providing ZEV credit for other EV types, the number of electric passenger and light-duty trucks required in this

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program would be decreased. The original intent of the ZEV requirements was to reduce gasoline powered passenger cars and light-duty trucks because they represent the highest potential for emission reductions. Lastly, by allowing other vehicle types there may be unintended results such as setting a precedent for inclusion of additional types of transport not originally intended to be part of the ZEV requirements, e.g., electric bicycles and scooters. Staff will explore the issues involved in including other vehicle types for ZEV credits and solicit recommendations at the workshop.

MULTI-MANUFACTURER ARRANGEMENTS

In recent years, many new multi-manufacturer ownership arrangements have been established. These new relationships have made it difficult to delineate individual companies for purposes of ZEV requirements. ARB is proposing to modify the ZEV regulation to clarify the definitions of multi-manufacturer arrangements for purposes of defining a manufacturer's volume classification and thus their ZEV requirements. The staff proposal consists of a multi-manufacturer arrangement defined as a company owning greater than 50% of another company. These two companies would be defined as one, and their combined volume of vehicles manufactured would be used to determine the ZEV requirements.

ZEV REVIEW LIST SERVE

For your information, the ARB maintains a list serve area for the ZEV Program. If you sign up for this list serve, you will receive an e-mail notice when new information has been posted to the ZEV Program web site. To subscribe to the ZEV Program list serve, please visit the following web site: <http://www.arb.ca.gov/listserv/listserv.htm>.

Sincerely,

Robert H. Cross, Chief
Mobile Source Control Division