

TITLE 13. CALIFORNIA AIR RESOURCES BOARD

NOTICE OF PUBLIC HEARING TO CONSIDER ADOPTION OF THE 2003 AMENDMENTS TO THE CALIFORNIA ZERO EMISSION VEHICLE REGULATION

The Air Resources Board (Board or ARB) will conduct a public hearing at the time and place noted below to consider adoption of amendments to the California Zero Emission Vehicle (ZEV) regulation.

DATE: February 27, 2003

TIME: 9:00 a.m.

PLACE: California Environmental Protection Agency
Air Resources Board
Auditorium, Second Floor
1001 "I" Street
Sacramento, CA 95814

This item will be considered at a two-day meeting of the ARB, which will commence at 9:00 a.m., February 27, 2003, and may continue at 8:30 a.m., February 28, 2003. This item may not be considered until February 28, 2003. Please consult the agenda for the meeting, which will be available at least 10 days before February 27, 2003, to determine the day on which this item will be considered.

This facility is accessible to persons with disabilities. If accommodation is needed, please contact ARB's Clerk of the Board at (916) 322-5594, or Telecommunications Device for the Deaf (TDD) (916) 324-9531 or (800) 700-8326 for TDD calls from outside the Sacramento area, by February 13, 2003, to ensure accommodation.

INFORMATIVE DIGEST OF PROPOSED ACTION AND POLICY STATEMENT OVERVIEW

Sections Affected: Amendments to title 13, California Code of Regulations (CCR), section 1962 and the incorporated "California Exhaust Emission Standards and Test Procedures for 2003 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" as last amended July 30, 2002.

Background

The California ZEV regulation was originally adopted in 1990, as part of the ARB's first Low-Emission Vehicle (LEV I) regulations. It established an ambitious program to dramatically reduce the environmental impact of light-duty vehicles through the gradual introduction of ZEVs into the California fleet. As originally adopted, the ZEV regulation

required that specified percentages of the passenger cars and lightest light-duty trucks (called the LDT1 category) produced by each of the seven largest auto manufacturers be ZEVs, starting in 1998. The percentages were 2 percent for the 1998-2000 model years (MYs) and 5 percent for the 2001-2002 MYs. A requirement of 10 percent ZEVs applied to all but small-volume manufacturers starting in MY 2003. The regulation also included a marketable credits system. Although the regulation did not require a specific technology, the expectation at that time was that the requirements would be met by the introduction of battery electric vehicles (EVs).

In 1996 the ARB amended the ZEV regulation to allow additional time for the technology to develop. The requirement for 10 percent ZEVs in MYs 2003 and beyond was maintained, but the percentage ZEV requirements for MYs 1998 through 2002 were eliminated. At the same time, the ARB entered into Memoranda of Agreement (MOAs) with the seven largest auto manufacturers. Under the MOAs the manufacturers agreed to place more than 1,800 advanced-battery EVs in California in the years 1998 through 2000, and the ARB agreed to work with state and local governments to help develop ZEV infrastructure and remove barriers to ZEV introduction.

As part of the 1998 “LEV II” rulemaking, the Board adopted amendments that allowed manufacturers to use partial allowances of 0.2 or more generated from vehicles with extremely low emissions (referred to as partial ZEV allowance vehicles or PZEVs) to meet the 10 percent ZEV requirement. To be certified as a PZEV, a vehicle must meet the ARB’s most stringent exhaust emission standards, have zero evaporative emissions, and be covered by an emissions warranty for 15 years or 150,000 miles, whichever occurs first. However, a large-volume manufacturer was required to have a minimum of 4 percent of its California fleet of passenger cars and lightest trucks be vehicles classified as “full” ZEVs.

The 2001 Amendments to the ZEV Regulation

Following a January 2001 hearing, the ARB adopted major amendments to the ZEV regulation that were designed to maintain progress towards commercialization of ZEVs while recognizing the market constraints created primarily by the cost of battery technology. The amendments maintained a core ZEV component, but significantly reduced the cost of the program – primarily through a reduction in the number of vehicles required in the near term and a further broadening in scope of the vehicle technologies allowed. The key elements of the 2001 amendments pertinent to this rulemaking are described below.

Reducing the number of ZEVs needed in the near term. Several amendments reduced the number of ZEVs required in the early years of the program. The amendments established multipliers that provided extra credits for ZEVs in the early years. ZEVs introduced before the 2006 MY received early introduction multipliers of 4.0 for the 2001 and 2002 MYs and 1.25 for the 2003-2005 MYs. A separate “NEV discount” multiplier reduced the credits earned by Neighborhood Electric Vehicles (NEVs) – which have a top speed of no more than 25 miles per hour – to 0.625 for the 2004 and 2005 MYs because of their limited functionality. For 2006 and subsequent years the credits

earned by NEVs were further reduced to 0.15. The early introduction multipliers for ZEVs in a given model year and the extended range multiplier described below were only available to ZEVs that not only were “delivered for sale” but were also “placed in service.” The Initial Statement of Reasons for the rulemaking indicated that to earn multiple allowances, manufacturers would be required to certify to the Executive Officer the number of vehicles placed in service during the course of the model year.

Reducing the number of PZEVs needed in the near term. The amendments added PZEV early introduction multipliers that reduced the number of PZEVs needed to meet the maximum PZEV allowance amount to 25 percent of the preexisting requirement in MY 2003, 50 percent in MY 2004, and 75 percent in MY 2005. Manufacturers were also provided two years to make up a PZEV shortfall rather than the one year previously allowed.

Allowing advanced technology PZEVs to satisfy one-half of the “pure ZEV” requirement and increasing their allowances. Qualifying advanced technology vehicles that were not ZEVs were permitted to satisfy up to one half of the four percent “pure ZEV” portion of the ZEV requirement. These were known as Advanced Technology PZEVs (AT PZEVs), defined as any PZEVs earning a ZEV allowance of more than 0.2, not including the early introduction multiplier. One category of AT PZEVs consisted of PZEVs such as grid-connected hybrid electric vehicles with an all-electric range of 10 miles or more; the additional “zero emission vehicle miles traveled (VMT) allowance” for these vehicles varied from about 0.4 to 2 depending on the electric range. Another category of AT PZEVs – those using a fuel such as compressed natural gas with very low fuel-cycle emissions – qualified for an additional allowance of up to 0.2, depending on the degree to which the vehicle uses that fuel.

A third category of AT PZEVs included vehicles that employed “advanced ZEV componentry” but did not qualify for a zero-emission VMT allowance – vehicles such as a non-grid connect gasoline hybrid electric vehicle. For this category, the amendments established three alternative performance-based paths that the manufacturer could use to calculate the allowance: (1) CO₂ savings, (2) vehicle efficiency, or (3) through MY 2007 only, the percent of peak power that comes from the battery. The calculations for the first two methods relied on the vehicle’s fuel economy as measured by the U.S. Environmental Protection Agency (U.S. EPA). The vehicle had to meet a threshold performance level to qualify for any allowance; for qualifying vehicles the amount of the allowance increased with the vehicle’s performance. The amendments also provided an additional allowance of 0.1 for vehicles that use gaseous or hydrogen fuel storage.

Expanding ZEV range credits and adding an efficiency multiplier for ZEVs and AT PZEVs. Modifying ZEV extended range credit provisions that had been added in 1996, the amendments reduced the minimum range needed for multiple credits to 50 miles, with credits increasing with range up to 10 credits for a range of 275 miles or more. Because a vehicle with a refueling time of less than 10 minutes earned the maximum credit regardless of range, a hydrogen fuel cell vehicle earned 10 credits, not including any phase-in multiplier.

A ZEV or AT PZEV having an efficiency at least 50 percent greater than the average for its size class qualified for a new efficiency multiplier. All vehicle efficiencies (gasoline, CNG, electric) were converted into the common units of California Miles per Equivalent Gallon (CMPEG). The multiplier earned was the larger of 1.0 or the vehicle CMPEG divided by the baseline. For ZEVs, the efficiency multiplier partially replaced the range multiplier on a phased-in basis beginning in MY 2005, and the combined value of the range and efficiency multipliers was gradually reduced, resulting in larger numbers of vehicles in later years. For AT PZEVs, the efficiency multiplier took effect beginning in MY 2002.

Increasing the percentage ZEV requirement in later years. The 10 percent ZEV requirement for large and medium-duty manufacturers was ramped up to 11 percent for the 2009-2011 MYs, 12 percent for the 2012-2014 MYs, 14 percent for the 2015-2017 MYs, and 16 percent for 2018 and subsequent MYs. During these ramp-ups, the portion of the ZEV requirement that could be satisfied by 0.2 allowance PZEVs was held at 6 percent. Thus the pure ZEV portion gradually increases from 4 percent in the 2003 through 2008 MYs to 10 percent by 2018. Up to one half of this pure ZEV portion could be satisfied with allowances from AT PZEVs.

Phased addition of LDT2 vehicles to the base for calculating a manufacturer's ZEV obligation. At the January 2001 hearing the Board decided to modify the originally proposed amendments to phase in a new requirement that "LDT2" vehicles be included in the base for determining a manufacturer's full percentage ZEV obligation, along with the passenger cars and LDT1 vehicles that had always been included. The LDT2 category includes most sport utility vehicles (SUVs), minivans, and larger pickup trucks. The addition of LDT2 vehicles was phased in beginning in the 2007 MY, when 17 percent of the manufacturer's California LDT2 production would be counted. The percentage increased by 17 percent increments through the 2011 MY, with a 100 percent requirement starting in the 2012 MY. Full inclusion of LDT2 vehicles increases the base across all manufacturers by an average of about 70 percent, although the impacts differ among individual manufacturers.

Restricting the future use of "banked" credits earned by NEVs. To avoid the possibility that manufacturers could place large numbers of NEVs in these early years and thereby amass enough credits from NEVs alone to avoid producing ZEV program vehicles for a number of years, the amendments capped the use of such credits in future years. NEV credits earned in prior years could only be used to satisfy 75 percent of a manufacturer's ZEV obligation in MY 2006 and 50 percent in MY 2007 and beyond.

Miscellaneous other changes. Various other changes made by the 2001 amendments included permitting additional ZEV credits for ZEVs, AT PZEVs and PZEVs placed as part of a transportation system in MYs 2001-2007. Additional credits were also authorized for a vehicle in California service for more than three years with an extended battery or fuel cell stack warranty.

Litigation and Other Recent Developments

There have been three lawsuits filed by General Motors and DaimlerChrysler challenging the 2001 ZEV Amendments and their implementation; the first two also named some Fresno-area auto dealers as additional plaintiffs.

The federal preemption lawsuit. One of the cases was filed in January 2002 in federal district court in Fresno, asserting that the provisions pertaining to AT PZEVs that are gasoline hybrids are related to fuel economy standards and accordingly are preempted by the Energy Policy and Conservation Act of 1975 – the law that directed the National Highway Traffic Safety Administration to establish corporate average fuel economy (CAFE) standards. On June 11, 2002, a federal district judge issued a preliminary injunction that prohibits the ARB's Executive Officer from enforcing the 2001 ZEV Amendments with respect to the sale of new motor vehicles in the 2003 or 2004 MYs, pending final resolution of the case. The judge issuing the preliminary injunction found that the plaintiffs were likely to succeed in their preemption claim. He rejected arguments that the optional nature of the AT PZEV provisions eliminated preemption concerns, because he found that disparities in costs among the various compliance options in effect required manufacturers to produce gasoline hybrids. He enjoined enforcement of all of the 2001 ZEV Amendments based on the conclusion that the challenged AT PZEV provisions likely were not severable from the rest of the ZEV program. The ARB has appealed issuance of the preliminary injunction to the U.S. Court of Appeals for the Ninth Circuit, which has scheduled oral argument for the appeal on February 13, 2003. In the interim, the preliminary injunction remains in effect.

The first state court lawsuit. The second case was filed in January 2002 in the Fresno County Superior Court with Isuzu Motors as an additional plaintiff. As most recently amended, the complaint identifies seven theories under which the 2001 ZEV amendments are claimed to be partially or wholly invalid. One allegation is that the amendments adding LDT2s to the base for the percentage ZEV requirements was beyond the scope of the original hearing notice and could not be adopted without a new notice. There are also claims that the ARB did not comply with the California Environmental Quality Act (CEQA), that the ZEV regulation is inconsistent with the ARB's authorizing statutes, and that the Board failed to make a rational cost-effectiveness determination. On December 19, 2002 the trial court denied the automakers' motion for summary judgment and a trial court hearing on the merits is expected after January 2003.

The second state court lawsuit. On December 11, 2002, DaimlerChrysler and General Motors filed a second lawsuit in Fresno County Superior Court, this time challenging a November 21, 2002 guidance letter transmitted by the ARB's Executive Officer to vehicle manufacturers. The letter responded to inquiries on when 2002 MY NEVs would need to be placed in service in order to qualify for the 2002 MY early introduction multiplier – in case the preliminary injunction was lifted or the issue became relevant in the context of subsequent amendments to the ZEV regulation. The Executive Officer interpreted the regulation as allowing a MY 2002 ZEV to receive the 4.0 multiplier only if

it is placed in service by the end of March 2003. Following a December 17 hearing, a temporary restraining order was issued temporarily prohibiting enforcement of the March 31, 2003 deadline as established in the guidance letter.

Technology developments. When the Board amended the regulation in 2001, it did so with the understanding that near-term compliance with the pure ZEV portion of the regulation would be expensive for automakers, but that continued vehicle and technology development would lead to less costly approaches. Since that time, there have been no significant reductions in the cost of battery EVs. Meanwhile, the marketing of battery EVs has been met with only modest success, with only NEVs emerging as a commercial although limited usage product. These factors, along with the federal lawsuit, have slowed or even halted automaker plans regarding battery EV development.

In addition, projections regarding the pace of commercialization of fuel cells, which were projected to provide a second ZEV technology late in this decade, have become less certain although automakers remain fully committed and continue to invest heavily in the technology. As a result, it appears that under the current regulation manufacturers will need to develop additional battery EV products to bridge the interim years until fuel cells are available in larger quantities in the next decade.

The Proposed 2003 ZEV Amendments

Although the staff believes that the challenged AT PZEV provisions are not preempted by federal law and that the federal preliminary injunction should be reversed on appeal, there is no doubt that the injunction has introduced considerable uncertainty regarding the ZEV regulation that would not necessarily be ended by a reversal by the Ninth Circuit Court of Appeal. Removal of this uncertainty is essential for the ZEV program to move ahead. While there are advantages to the scoring provisions for gasoline hybrid AT PZEVs and the efficiency multiplier in the 2001 amendments, the staff has developed what it considers to be a satisfactory alternative approach that removes all references in the regulation to fuel economy and addresses the preemption concerns.

The staff has also developed additional proposed amendments that are designed to maintain pressure on the commercialization of ZEV technologies while recognizing the current state of the technology and the cost implications related to their development. The staff proposal includes the following elements:

Delaying start of the percentage ZEV requirements until the 2005 MY. The proposed amendments would delay the start of the percentage ZEV requirements two years, until the 2005 MY. Qualifying MY 2004 and earlier ZEVs, AT PZEVs and PZEVs would generate credits or allowances that could be used in future MYs.

Deleting the efficiency multiplier for AT PZEVs and ZEVs, and changing the methods for awarding allowances for AT PZEVs. The staff proposal eliminates the efficiency multiplier for AT PZEVs and ZEVs. The amendments would increase the advanced

componentry allowance for a vehicle with a high-pressure hydrogen storage system from 0.1 to 0.2. There would be no change to the 0.1 allowance for a vehicle equipped with a qualifying high pressure gaseous fuel storage system. The amendments would eliminate the three current methods – the CO₂ reduction method, the efficiency method and the peak power method – that establish sliding scales for awarding allowances to PZEVs with other advanced ZEV componentry, including gasoline hybrids. In their place would be a flat allowance of 0.4 in the 2003-2011 MYs, and 0.35 in the 2012 and subsequent MYs for any PZEV with advanced ZEV componentry that meets either of two threshold criteria: a “peak power ratio” of greater than 13 percent, or a “peak power ratio” of greater than 8 percent with a zero emission drive system maximum power rating of at least 10 kilowatts. These provisions would be accompanied by an express severability clause, and a more general severability clause would also be added to the regulation.

The amendments would also change the way other AT PZEV allowances are determined. The maximum overall cap for PZEVs with low fuel-cycle emissions would be increased from 0.2 to 0.3 and the applicable equation would be revised to increase the allowance by 50 percent. The allowance for zero emission VMT for hybrid electric vehicles and the phase-in multiplier for AT PZEVs with any zero emission vehicle miles traveled would also be increased. The amendments would add a cap on total AT PZEV allowances for any technology type of 3.0 starting in the 2012 MY.

Changing the way credits from ZEVs are calculated and applied. Along with removing the efficiency multiplier for ZEVs, the amendments would make a series of changes to simplify the calculation and encourage sustainable commercialization of ZEVs. They would identify five ZEV “types” that would be the basis for awarding ZEV credits: NEVs, Type 0 (utility low-range ZEVs), Type I (mid-range ZEVs like City electric vehicles), Type II (longer-range ZEVs like full-function battery electric vehicles) and Type III (long range, fast-refueling ZEVs like fuel cell vehicles). A 2003 and subsequent MY ZEV, other than a NEV, would earn 1 ZEV credit when it is produced and delivered for sale in California. A 2003 and subsequent MY ZEV would earn additional credits based on the earliest model year in which it is placed in service (not earlier than the ZEV’s model year). The following table shows the total number of credits the ZEV would earn, including the credit not contingent on placement in service, if it is placed in service in the specified model year or by March 31 after the end of the model year.

| <i>Tier</i> | <i>Model Year in Which ZEV is Placed in Service</i> | | | | | | | | | |
|---------------------|---|-------|-------|------|------|------|------|------|------|-------|
| | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012+ |
| NEV | 1.25 | 0.625 | 0.625 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 |
| Type 0 (Utility) | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1 | 1 | 1 | 1 |
| Type 1 (City) | 8 | 8 | 8 | 7 | 7 | 5 | 2 | 2 | 2 | 2 |
| Type II | 12 | 12 | 12 | 10 | 10 | 7 | 3 | 3 | 3 | 3 |
| Type III | 40 | 40 | 40 | 15 | 15 | 15 | 4 | 4 | 4 | 3 |

Proposed additional amendments affecting the ZEV credit calculations reflect the above changes to the structure of the calculation and experience with the program to date. These proposed changes include modification of the fast refueling definition and elimination of the in-service/warranty credit for MY 2005 and later.

Expanding manufacturers' compliance options prior to the 2012 MY. The amendments would allow a manufacturer to use AT PZEVs to meet three-quarters rather than one-half of its MY 2005-2011 ZEV obligation that could not be met with PZEVs. This would mean that for MYs 2005-2008 only 10 percent of the manufacturer's overall ZEV obligation would have to be met with ZEVs or credits from ZEVs. During the 2009-2011 MYs, an increase in the permitted AT PZEV share would mean that only 1.25 percent of a manufacturer's applicable California passenger car, LDT1 and LDT2 production volume would have to be ZEVs. These amendments are proposed to create a slower ramp up of volumes of pure ZEVs and to encourage an increase in AT PZEV volumes in the early years.

Additionally, staff proposes that ZEVs be removed from the sales volume used to calculate the ZEV requirement. Also, staff proposes elimination of the cap on the use of banked NEV credits when used to meet obligations that can be satisfied with allowances from PZEVs or AT PZEVs.

Refining the "placed in service" requirements. The amendments would provide that a 2001-2002 MY ZEV qualifies for the early introduction multiplier of 4.0 only if it is placed in service in California by April 15, 2003. If it is placed in service after that time, it would be subject to the credit provisions applicable to 2003 and subsequent MY ZEVs as described above.

Miscellaneous changes. The energy storage device on a hybrid electric PZEV is currently required to be warranted for 15 years or 150,000 miles, whichever occurs first. The proposed amendments would revise the warranty requirement for the energy storage device to 10 years or 150,000 miles. The amendments would also extend the

sunset date on the award of transportation system credits from MY 2007 to MY 2011, and remove credits earned by vehicles from the cap on the use of transportation system credits.

Reaffirmation of the phased addition of LDT2s. During the comment period in this rulemaking, the Board will accept comment on whether it should reaffirm the changes in the 2001 ZEV amendments that phase in a requirement that LDT2 vehicles be included in the base for calculating a manufacturer's ZEV obligation. In MY 2007, 17 percent of the manufacturer's California LDT2 production is to be counted. The percentage increases by 17 percent increments through the 2011 MY, with a 100 percent requirement starting in the 2012 MY. The staff is proposing that, at the conclusion of the hearing, the Board reaffirm the inclusion of these provisions in the ZEV regulation.

AVAILABILITY OF DOCUMENTS AND AGENCY CONTACT PERSONS

The ARB staff has prepared a Staff Report: Initial Statement of Reasons (ISOR) for the proposed regulatory action, which includes a summary of the potential environmental and economic impacts of the proposal, and supporting technical documentation. The staff report is entitled: "Initial Statement of Reasons for Rulemaking, Proposed 2003 Amendments to the California Zero Emission Vehicle Regulation."

Copies of the ISOR and the full text of the proposed regulatory language, in underline and strike-out format to allow for comparison with the existing regulations, may be obtained from the ARB's Public Information Office, Environmental Services Center, 1001 "I" Street, First Floor, Sacramento, California 95814, (916) 322-2990, at least 45 days prior to the scheduled hearing (February 27, 2003).

Upon its completion, the Final Statement of Reasons (FSOR) will be available and copies may be requested from the agency contact persons in this notice, or may be accessed on the web site listed below.

Inquiries concerning the substance of the proposed regulations may be directed to the designated agency contact persons: Chuck Shulock, Vehicle Programs Specialist, at (916) 322-6964, or Analisa Bevan, Manager, ZEV Implementation Section, Mobile Source Control Division at (916) 323-8966.

Further, the agency representative and designated back-up contact persons to whom non-substantive inquiries concerning the proposed administrative action may be directed are Artavia Edwards, Manager, Board Administration & Regulatory Coordination Unit, (916) 322-6070, or Amy Whiting, Regulations Coordinator, (916) 322-6533. The Board has compiled a record for this rulemaking action, which includes all the information upon which the proposal is based. This material is available for inspection upon request to the contact persons.

If you are a person with a disability and desire to obtain this document in an alternative format, please contact the Air Resources Board ADA Coordinator at (916) 323-4916, or

TDD (916) 324-9531, or (800) 700-8326 for TDD calls from outside the Sacramento area.

This notice, the ISOR, and all subsequent regulatory documents, including the FSOR, when completed, are available on the ARB Internet site for this rulemaking at <http://www.arb.ca.gov/regact/zev2003/zev2003.htm>.

COSTS TO PUBLIC AGENCIES AND TO BUSINESSES AND PERSONS AFFECTED

The determinations of the Board's Executive Officer concerning the costs or savings necessarily incurred in reasonable compliance with the proposed regulations are presented below.

The Executive Officer has determined that the proposed regulatory action will not create costs or savings, as defined in Government Code section 11346.5(a)(6), to any state agency or in federal funding to the state, costs or mandate to any local agency or school district whether or not reimbursable by the state pursuant to part 7 (commencing with section 17500), division 4, title 2 of the Government Code, or other nondiscretionary savings to local agencies.

The Executive Officer has made an initial determination that the proposed regulatory action will not have a significant statewide adverse economic impact directly affecting businesses, including the ability of California businesses to compete with businesses in other states, or on representative private persons.

In accordance with Government Code section 11346.3, the Executive Officer has initially determined that the proposed amendments should have minimal or no impacts on the creation or elimination of jobs within the State of California, minimal or no impacts on the creation of new businesses and the elimination of existing businesses within the State of California, and minimal or no impacts on the expansion of businesses currently doing business within the State of California.

In developing this regulatory proposal, the ARB staff evaluated the potential economic impacts on private persons and businesses. Any business involved in manufacturing, purchasing or servicing passenger cars and light-duty trucks could be affected by the proposed amendments. Also affected are businesses that supply parts for these vehicles. Some affected businesses may be small businesses. California accounts for only a small share of total nationwide motor vehicle and parts manufacturing. As discussed below, the Executive Officer has determined that the proposed regulatory action will not have a significant cost impact on directly affected persons or businesses.

As with the 2001 amendments to the ZEV regulation, comparing the projected compliance costs associated with the current regulations and the proposed amendments involved consideration of two key factors: (1) the number of vehicles that are required to be placed, and (2) the incremental cost per vehicle. Both factors must be estimated, and both estimates are subject to considerable uncertainty, in large part

because of the compliance flexibility provided. Nevertheless, the direction of the cost impact of the proposed amendments is clear – they will reduce the cost of the program – but the magnitude of the savings is more difficult to assess.

Overall, staff estimates the cost savings resulting from the proposed amendments for model year 2005 through 2011 range from an estimated \$375 million to \$3,623 million. In addition to the modifications proposed herein, staff is proposing that the Board reconsider and reaffirm the inclusion of LDT2 vehicles to the sales base. This component of the existing regulation was added as part of the post-Board hearing modification in the 2001 rulemaking. The costs of this provision are taken into account in the estimated savings noted above.

PZEVs: In the Initial Statement of Reasons for the 2001 amendments, ARB staff estimated that the incremental cost for PZEV compliance was \$500. In the Final Statement of Reasons for that rulemaking, this estimate was reduced to \$200 based on new information. Today, based on staff analysis of the most recent vehicles certified by manufacturers, staff estimates that the incremental cost for a PZEV is \$100. Under the amendments proposed herein, the number of PZEVs required, and thus the incremental cost of compliance, will not change. Assuming full use of PZEVs, the costs for Stage I (MYs 2003-2005) are \$27.5 million, increasing to \$51.1 million at the end of Stage II (MYs 2006-2008), and \$66.3 million at the end of Stage III (MYs 2012 and beyond).

AT PZEVs: In the 2000 Biennial Review Staff Report and the Initial Statement of Reasons for the 2001 ZEV amendments, the incremental cost for an AT PZEV was estimated to be \$3,300 in the near term and \$1,100 in volume production. Staff currently estimates that the incremental cost for an AT PZEV is \$3,300 in Stage I, \$1,500 in Stage II, \$1,200 in Stage III, and \$700 in 2012 and beyond. It should be noted that the incremental cost of hybrid electric vehicles within this category will be partially offset by vehicle attributes such as performance or fuel economy for which consumers are willing to pay a premium estimated to exceed \$1,000. The use of this premium results in a “negative” incremental cost in 2012 and beyond – in other words by 2012 the hybrid electric vehicle is estimated to be less expensive to own and operate over its lifecycle than a conventional vehicle.

Assuming manufacturers make full use of the AT PZEV option under staff’s proposal, manufacturers are expected to produce more AT PZEVs than under the current regulation; thus the overall incremental cost of compliance in this category will exceed that expected under the current regulation. Specifically, in 2005, the incremental cost under the proposed amendments is \$39.6 million compared to \$31 million under the existing regulation; in 2008 at the end of Stage II, the incremental cost under staff’s proposal is \$32 million compared to \$24 million under the existing regulation; and in 2011 at the end of Stage III, the incremental cost under the proposal is \$21 million compared to \$15 million under the existing regulation. The higher incremental cost for this category of vehicles, however, will be more than offset by reductions resulting from changes in requirements for the ZEV category.

ZEVs: In this analysis staff uses the battery EV cost estimates from the 2000 Biennial Review Staff Report because there has not been any significant changes affecting those estimates since that time. In that report, the total near term incremental cost for full function battery electric vehicles was estimated to range between \$13,000 and \$24,000, depending on the type of vehicle and the battery employed. For City EVs the near term incremental cost ranged from \$7,500 to \$10,000. Costs in volume production were estimated to range from \$1,500 to \$11,000, again depending on the type of vehicle and the battery used. The two reports did not include an estimate of the incremental cost of fuel cell EVs. For this proposal, staff estimates the incremental costs for a fuel cell vehicle to be \$1 million in Stage I, \$300,000 in Stage II, \$120,000 in Stage III, and \$10,000 in MYs 2012 to 2020.

The estimated incremental cost of the pure ZEV portion of the regulation decreases significantly under the staff proposal, due to the fact that this category in total is reduced to one-half of its current size, while the credits earned per vehicle are increased over time. As a result manufacturers will not be required to produce as many ZEVs – whether they are full function battery EVs, city cars or fuel cell electric vehicles – particularly in the early years of the program.

With the proposed changes, the incremental cost of compliance for the ZEV component of the program is zero at the end of Stages I and II and approximately \$83 million, \$117 million and \$225 million for city EVs, full function EVs and fuel cell EVs, respectively, in 2011 at the end of Stage III. This compares to incremental costs under the existing regulation of \$109 million, \$94 million and \$1,290 million for city EVs, full function EVs, and fuel cell EVs, respectively, in 2008 at the end of Stage II, and \$234 million, \$221 million and \$1,440 million for those categories in 2011 at the end of Stage III.

Staff reiterates that these estimates are subject to considerable uncertainty. While there is no doubt that staff's proposed changes will reduce the cost of compliance, the magnitude of the savings is much more difficult to assess.

Before taking final action on the proposed regulatory action, the Board must reasonably determine that no alternative considered by the agency would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons or businesses than the proposed action.

SUBMITTAL OF COMMENTS

The public may present comments relating to this matter orally or in writing at the hearing, and in writing or by e-mail before the hearing. To be considered by the Board, written submissions not physically submitted at the hearing must be received no later than **12:00 noon, February 26, 2003**, and addressed to the following:

Postal Mail is to be sent to:

Clerk of the Board
Air Resources Board
1001 "I" Street, 23rd Floor
Sacramento, California 95814

Electronic mail is to be sent to: zev2003@listserv.arb.ca.gov and received at the ARB by no later than **12:00 noon, February 26, 2003.**

Facsimile submissions are to be transmitted to the Clerk of the Board at (916) 322-3928 and received at the ARB no later than **12:00 noon, February 26, 2003.**

The Board requests, but does not require, 30 copies of any written statement be submitted and that all written statements be filed at least 10 days prior to the hearing so that ARB staff and Board Members have time to fully consider each comment. The ARB encourages members of the public to bring any suggestions for modification of the proposed regulatory action to the attention of staff in advance of the hearing.

STATUTORY AUTHORITY

This regulatory action is proposed under that authority granted in sections 39600, 39601, 43013, 43018, 43101, 43104 and 43105 of the Health and Safety Code. This action is proposed to implement, interpret and make specific sections 39002, 39003, 39667, 43000, 43009.5, 43013, 43018, 43100, 43101, 43101.5, 43102, 43104, 43105, 43106, 43107, 43204 and 43205.5 of the Health and Safety Code.

HEARING PROCEDURES

The public hearing will be conducted in accordance with the California Administrative Procedure Act, title 2, division 3, part 1, chapter 3.5 (commencing with section 11340) of the Government Code. Following the public hearing, the ARB may adopt the regulatory language as originally proposed or with nonsubstantial or grammatical modifications. The ARB may also adopt the proposed regulatory language with other modifications if the text as modified is sufficiently related to the originally proposed text that the public was adequately placed on notice that the regulatory language as modified could result from the proposed regulatory action. Potential modifications include, but are not limited to, prevention of a ZEV product blackout, minimizing the impact of section 177 of the federal Clean Air Act on manufacturers, inclusion of credit for fueling infrastructure deployment or stationary fuel cells, amendment of treatment of credits from 2004 and earlier MY PZEVs, adjustment of credits earned by AT PZEVs and the threshold performance requirements to earn advanced componentry credit, the treatment of specialty vehicles, and requirements for length of vehicle placement to earn credits. In the event that such modifications are made, the full regulatory text, with the modifications clearly indicated, will be made available to the public for written comment at least 15 days before it is adopted. The public may request a copy of the modified regulatory text

from the ARB's Public Information Office, Environmental Services Center, 1001 "I" Street, First Floor, Sacramento, California 95814, (916) 322-2990.

CALIFORNIA AIR RESOURCES BOARD

Michael P. Kenny
Executive Officer

Date: December 31, 2002

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs see our Web-site at www.arb.ca.gov.