

**EXCERPTS OF PROPOSED REGULATION ORDER WITH MODIFIED TEXT
SHOWING MODIFICATIONS MADE AVAILABLE WITH SECOND "15-DAY"
NOTICE**

**PROPOSED 2003 AMENDMENTS TO THE
CALIFORNIA ZERO EMISSION VEHICLE REGULATION**

Note: Set forth below are modifications to the proposed 2003 amendments to the California zero emission vehicle (ZEV) regulation. The text of the originally proposed amendments is shown in underline to indicate additions and ~~strikeout~~ to indicate deletions, compared to the preexisting regulatory language. The proposed modifications to the original proposal that were made available by the first "15-day" notice are shown in double underline to indicate additions and ~~double strike-out~~ to indicate deletions. The additional proposed modifications made available by the second "15-day" notice are shown in **bold double underline** to indicate additions and ~~**bold double strikeout**~~ to show deletions. The italicized, indented commentaries explain the rationale for the proposed modifications to the original proposal made after the initial set of modifications released by staff March 5, 2003, and are not part of the regulations. Commentaries for the second set of modifications are in ***bold italics***. Subsection headings shown in *italics* are to be italicized in Barclays California Code of Regulations.

Various portions of the regulation that are not modified by the second set of modifications are omitted from the text shown, and those omissions are indicated by "* * * * *". A version of the complete regulation showing both sets of proposed regulations is available online at the ARB's Internet site for the regulatory documents in this rulemaking – <http://www.arb.ca.gov/regact/zev2003/zev2003.htm>.

1. Amend California Code of Regulations, title 13, section 1962 to read as follows:

§ 1962. Zero-Emission Vehicle Standards for ~~2003~~ 2005 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles.

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(b) *Percentage ZEV Requirements.*

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(2) *Requirements for Large Volume, ~~Intermediate Volume, Independent Low Volume, and Small Volume~~ Manufacturers.*

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(B) *Alternative Requirements for Large Volume Manufacturers.*

1. *Minimum Floor for Production of Type III ZEVs.*

a. Requirement For the 2005-2008 Model Years. A large volume manufacturer electing to be subject to the alternative compliance requirements during model years 2005 through 2008 must produce, deliver for sale, and place in service in California enough 2001-2008 model-year Type III ZEVs to generate ZEV credits sufficient to meet a cumulative percentage ZEV requirement of 1.09 percent of the manufacturer's average annual California sales of PCs and LDT1s over the five year period from model years 1997 through 2001, or submit an equivalent number of credits generated by such vehicles. The manufacturer may meet up to one half of this requirement with **[i] 2004-2008 model-year Type I or Type II ZEVs, provided that 20 Type I ZEVs or 10 Type II ZEVs will equal one Type III ZEV, and [ii] 1997-2003 model-year Type I or Type II ZEVs that qualify for an extended service multiplier under section 1962(f) for a year primarily during calendar years 2004-2008, provided that 33 years of such a multiplier will equal one Type III ZEV.**

[Commentary: Post-hearing modifications change "optional requirements" to "alternative requirements" throughout to better track the common terminology in the rulemaking. Subdivisions of section 1962(b)(2)(B)1. have been added to accommodate the modifications in Item 1 of Attachment D to Resolution 03-4 that add minimum floor requirements for production of Type III ZEVs after the 2008 model year under the alternative compliance path. Those modifications are discussed in the Commentary following section 1962(b)(2)(B)1.e. What had been the last sentence of section 1962(b)(2)(B)1.a., excluding additional credits for transportation systems, has been moved to a new section 1962(b)(2)(B)1.f. What had been section 1962(b)(2)(B)1.b. in the March 5 modifications has been relettered as section 1962(b)(2)(B)1.h.

The last sentence of section 1962(b)(2)(B)1.a. reflects the first paragraph of Item 2 in Attachment D to the Resolution. It provides an additional incentive for the production of fresh battery electric vehicles while maintaining a core alternative compliance path requirement for production of fuel cell vehicles. Identical language is also included in section 1962(b)(2)(B)1.b.-d.

Various commenters requested that the regulation clarify the model-years of Type I and II ZEVs that can be used to meet one-half of a manufacturer's alternative compliance path requirements for new Type III ZEVs. Since the intent is to incentivize new Type I and II ZEVs, a supplemental modification provides that those Type I and II ZEVs must be model-year 2004-2008 vehicles.

The modifications made available with the first "15-day" notice did not include a provision reflecting the second paragraph of Item 2 in Attachment D to Resolution 03-4. Under that paragraph, credits earned by extended in-use Type I and Type II ZEVs in 2003 and beyond could be used at a 33 to 1 credit ratio towards satisfaction of the one half of the minimum floor requirement that could be met by Type I and Type II ZEVs. While staff had considered this element as a potential April 24 modification, staff had ultimately decided not to propose it and inclusion of the second paragraph of Item 2 in Attachment D

was in error. Staff's oral presentation to the Board of the suggested additional modifications did not include the element, and in the original 15-day notice staff concluded that the Board's intent was best effectuated by omitting it from the regulatory proposal.

Several commenters urged that the omitted concept be inserted in the final regulation, particularly since various Board members had expressed support for credits to encourage re-leasing of existing Type I and II ZEVs. In consideration of these comments, the staff concurs and now proposes inclusion of this element. Since subsection (f) has a well-developed mechanism for rewarding extended service of existing ZEVs, under the new modified language a ZEV's qualification depends on its qualification under subsection (f).]

b. 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 the 2009-2011 alternative path percentage, as calculated pursuant to section 1962(b)(2)(B)1.e., of the manufacturer's section 1962(b)(1) percentage ZEV requirement for the 2010 model year, based on the prior year method described in section 1962(b)(1)(B), or submit an equivalent number of credits generated by such vehicles. The manufacturer may meet up to one half of this requirement with **[i] 2009-2011 model-year Type I or Type II ZEVs, provided that 20 Type I ZEVs or 10 Type II ZEVs will equal one Type III ZEV, and [ii] 1997-2003 model-year ZEVs that qualify for an extended service multiplier under section 1962(f) for a year primarily during calendar years 2009-2011, provided that 33 years of such a multiplier will equal one Type III ZEV.**

c. Requirement For the 2012-2014 Model Years. A large volume manufacturer electing to be subject to the alternative compliance requirements during model years 2012 through 2014 must produce, deliver for sale, and place in service in California enough 2012-2014 model-year Type III ZEVs to generate ZEV credits sufficient to meet the 2012-2014 alternative path percentage, as calculated pursuant to section 1962(b)(2)(B)1.e., of the manufacturer's section 1962(b)(1) percentage ZEV requirement for the 2013 model year, based on the prior year method described in section 1962(b)(1)(B), or submit an equivalent number of credits generated by such vehicles. The manufacturer may meet up to one half of this requirement with **2012-2014 model-year Type I or Type II ZEVs, provided that 10 Type I ZEVs or 5 Type II ZEVs will equal one Type III ZEV.**

d. Requirement For the 2015-2017 Model Years. A large volume manufacturer electing to be subject to the alternative compliance requirements during model years 2015 through 2017 must produce, deliver for sale, and place in service in California enough 2015-2017 model-year Type III ZEVs to generate ZEV credits sufficient to meet the 2015-2017 alternative path percentage, as calculated in section 1962(b)(2)(B)1.e., of the manufacturer's section 1962(b)(1) percentage ZEV requirement for the 2016 model year, based

on the prior year method described in section 1962(b)(1)(B), or submit an equivalent number of credits generated by such vehicles. The manufacturer may meet up to one half of this requirement with **2015-2017 model-year** Type I or Type II ZEVs, provided that 10 Type I ZEVs or 5 Type II ZEVs will equal one Type III ZEV.

e. A manufacturer's alternative path percentage for a given time period is calculated as the target number of credits for each time period divided by the applicable combined model year ZEV obligation of all large volume manufacturers for that same time period, where:

<u>Time Period</u>	<u>Target Number of Alternative Path Type III ZEVs</u>	<u>Credits per Vehicle</u>	<u>Target Number of Credits</u>	<u>Combined Model Year ZEV Obligation</u>	<u>Alternative Path Percentage</u>
<u>2009 – 2011</u>	<u>2,500</u>	<u>4</u>	<u>10,000</u>	<u>A</u>	<u>(10,000/A)x100</u>
<u>2012 – 2014</u>	<u>25,000</u>	<u>3</u>	<u>75,000</u>	<u>B</u>	<u>(75,000/B)x100</u>
<u>2015 – 2017</u>	<u>50,000</u>	<u>3</u>	<u>150,000</u>	<u>C</u>	<u>(150,000/C)x100</u>

And where:

A = The combined total section 1962(b)(1) percentage ZEV requirement, based on the prior year method described in section 1962(b)(1)(B), that would apply for all large manufacturers for the 2010 model year,

B = The combined total section 1962(b)(1) percentage ZEV requirement, based on the prior year method described in section 1962(b)(1)(B), that would apply for all large manufacturers for the 2013 model year, and

C = The combined total section 1962(b)(1) percentage ZEV requirement, based on the prior year method described in section 1962(b)(1)(B), that would apply for all large manufacturers for the 2016 model year.

[Supplemental Commentary: The additional modifications to subsections (b)(2)(B)1.b., c., and d. track the modifications to subsection (b)(2)(B)1.a. explained above. Since the extended service multiplier in subsection (f) does not apply after the 2011 model year, the 33-1 credit does not apply in the subsections describing the requirements for the 2012 and subsequent model years.

The supplemental modifications to the “Alternative Path Percentage” column in the table in subsection (b)(2)(B)1.e. convert the figures from fractions to percentages.]

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i. The number of Type III ZEVs needed for a manufacturer under section 1962(b)(2)(B)1.a.-d shall be rounded to the nearest whole number.

[Supplemental Commentary: This modification clarifies that the rounding convention typically used by ARB applies here as well.]

(c) *Partial ZEV Allowance Vehicles (PZEVs).*

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(4) *PZEV Allowance for Advanced ZEV Componentry.*

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(B) ~~*Other Advanced ZEV Componentry*~~ *Use of a Qualifying HEV Electric Drive System.*

~~1. Qualification for Allowance. A vehicle shall qualify for an additional advanced componentry allowance of 0.4 in the 2003 through 2011 model years, and 0.35 in the 2012 and subsequent model years, if the manufacturer demonstrates to the reasonable satisfaction of the Executive Officer that the vehicle is equipped with advanced ZEV componentry such as an advanced battery integral to the operation of the vehicle power train or an electric power train and qualifies under one of the two methods listed below. The allowance earned by a vehicle shall be calculated according to one of the following methods, as elected by the manufacturer:~~

~~a. The maximum system power output available from the electrical storage device divided by the sum of the electrical storage device and the SAE net power of the heat engine is greater than 13%; or~~

~~b. The maximum system power output available from the electrical storage device divided by the sum of the electrical storage device and the SAE net power of the heat engine is greater than 8% and the maximum power rating of the zero emission drive system is at least 10 kilowatts.~~

1. Classification of HEVs. HEVs qualifying for additional allowances or allowances that may be used in the AT PZEV category are classified in one of five types of HEVs based on the criteria in the following table.

<u>Characteristics</u>	<u>Type A</u>	<u>Type B</u>	<u>Type C</u>	<u>Type D</u>	<u>Type E</u>
<u>Electric Drive System Peak Power Output</u>	<u>≥ 4 kW</u>	<u>≥ 4 kW</u> <u>< 10 kW</u>	<u>≥ 10 kW</u>	<u>≥ 10 kW</u>	<u>≥ 50 kW</u>
<u>Traction Drive System Voltage</u>	<u>< 60 Volts</u>	<u>≥ 60 Volts</u>	<u>< 60 Volts</u>	<u>≥ 60 Volts</u>	<u>≥ 60 volts</u>
<u>Traction Drive Boost</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>
<u>Regenerative Braking</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>
<u>Idle Start/Stop</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>

2. Type A HEVs. A 2008 or earlier model-year PZEV that the manufacturer demonstrates to the reasonable satisfaction of the Executive Officer meets all of the criteria for a Type A HEV does not receive an additional allowance for meeting those criteria but generates credits that may be used in the AT PZEV category through the 2008 model year.

3. Type B HEVs. A 2008 or earlier model-year PZEV that the manufacturer demonstrates to the reasonable satisfaction of the Executive Officer meets all of the criteria for a Type B HEV qualifies for an additional advanced componentry allowance of 0.2.

4. Type C HEVs. A 2011 or earlier model-year PZEV that the manufacturer demonstrates to the reasonable satisfaction of the Executive Officer meets all of the criteria for a Type C HEV, and that is equipped with an advanced traction energy storage system – such as nickel metal-hydride batteries, ultracapacitors, or other similar systems – with a design lifetime of at least 10 years, qualifies for an additional advanced componentry allowance of 0.2 in the 2003 through 2011 model years, 0.15 in the 2012 through 2014 model years, and 0.1 in the 2015 and subsequent model years.

[Supplementary Commentary: These changes were made in response to several comments regarding Type C HEVs and the value of encouraging them in relation to Type D and Type E. In particular, these comments suggested that Type C HEV technologies may not lead as directly to pure ZEVs as the high-voltage Types D and E HEVs. Staff still believes that this new class has merit and should be retained, but agrees that the linkage to ZEV enabling technology should be strengthened for Type C HEVs to qualify, and that the credit for this type of HEV be sunsetted. The new requirement of an advanced energy storage system with a substantial design lifetime in lieu of a high-voltage system should assure that the vehicle has significant ZEV-enabling features. The Type C HEV credit would sunset after 2011 since the benefits of encouraging this intermediate class of HEVs diminishes with time.]

5. Type D HEVs. A PZEV that the manufacturer demonstrates to the reasonable satisfaction of the Executive Officer meets all of the criteria for a Type D HEV qualifies for an additional advanced componentry allowance of 0.4 in the 2003 through 2011 model years, 0.35 in the 2012 through 2014 model years, and 0.25 in the 2015 and subsequent model years.

6. Type E HEVs. A PZEV that the manufacturer demonstrates to the reasonable satisfaction of the Executive Officer meets all of the criteria for a Type E HEV qualifies for an additional advanced componentry allowance of 0.5 in the 2003 through 2011 model years, 0.45 in the 2012 through 2014 model years, and 0.35 in the 2015 and subsequent model years.

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(d) Qualification for ZEV Multipliers and Credits.

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(5) ZEV Credits for 2003 and Subsequent Model Years.

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(C) Multiplier for Certain Type I and Type II ZEVs. A ~~2003~~ 2004 through 2011 model-year Type I and Type II ZEV shall qualify for a multiplier of 1.25 if it is either sold to a motorist or is leased for three or more years to a motorist who is given the option to purchase or re-lease the vehicle **for two years or more** at the end of the first lease term.

[Commentary: This new subsection 1962(d)(5)(C) has been added to reflect Item 3 of Attachment D to the Resolution. It is designed to provide additional incentives for battery electric vehicles to be kept on the road longer, since battery electric drivers who have been delighted with the performance of their cars have sometimes been unable to obtain extensions of initial three-year leases.

An additional modification eliminates applicability of this provision to 2003 model-year vehicles because incentives for extended service of those vehicles is provided in subsection 1962(f) and “double” multipliers for that one model year would be inappropriate. The additional requirement that re-leases be for two years or more assures that the multiplier not be available where the option for only a minimal re-lease period is provided.]

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(f) ~~Extended Service Warranty~~ Multiplier for ~~2001-1997-2003-2004~~ Model-Year ZEVs and PZEVs With ≥ 10 Mile Zero Emission Range. Except in the case of a NEV, an

additional ZEV or PZEV multiplier will be earned ~~by the manufacturer of~~ for the ~~by a 2001~~ 1997 through 2011 ~~2004~~2003 model years ~~by a ZEV, or a PZEV with \geq 10 mile zero emission range, whose zero-emission energy storage or conversion system is under an original warranty from the vehicle manufacturer beyond three years of service and~~ for each full year it is registered for operation on public roads in California beyond its first three years of service, through the 2011 calendar year. ~~For the 2001 through 2007 model years, a~~ **For additional years of service starting earlier than April 24, 2003, the manufacturer will receive 0.1 times the ZEV credit that would be earned by the vehicle if it were leased or sold new in that year, including multipliers, on a year-by-year basis beginning in the fourth year after the vehicle is initially placed in service.** ~~For additional years of service starting April 24, 2003 or later, the~~ **manufacturer will receive 0.1** ~~0.2~~ times the ZEV credit that would be earned by the vehicle if it were leased or sold new in that year, including multipliers, on a year-by-year basis beginning in the fourth year after the vehicle is initially placed in service. ~~For the 2008 through 2011 model years, a manufacturer will receive 0.05 times the ZEV credit earned by the vehicle if it were leased or sold new in that year, including multipliers, on a year-by-year basis beginning in the fourth year.~~ The ~~warranty~~ **extended service** multiplier is reported and earned in the year following each continuous year of service. ~~ZEVs, other than NEVs, re-leased prior to January 25, 2001 for a period beyond three years of service will earn an additional ZEV multiplier of 0.1 times the ZEV credit earned by the vehicle if it were leased or sold new in that year, including multipliers, for each additional year that they are in service and registered for operation on public roads in California.~~ Such vehicles are not required to have the zero-emission energy storage or conversion system under an original warranty from the vehicle manufacturer.

[Commentary: These modifications reflect Item 4 in Attachment D to the Resolution. The requirement for an extended battery warranty in order for extended-use ZEVs to qualify for additional credits has been an impediment to lease extensions, since manufacturers are reluctant to commit to having to purchase a replacement battery pack while customers may be fully willing to lease the vehicle without an extended warranty as long as it continues to meet the customer's needs.

During the first "15-day" comment period, a number of commenters urged that the extended service multiplier be made available to pre-2001 model-year ZEVs, so that it would apply to General Motors EV1s, Honda EV+s, Chrysler Epics, and a good number of Toyota, Nissan, and Ford EVs. Commenters asserted that the original modifications failed both to satisfy the goal of encouraging vehicle re-leases and to provide backward compatibility for the previous extended warranty credit. The staff concurs, and a supplemental modification makes the multiplier available to vehicles in model years as early as 1997. The modifications eliminate applicability to 2004 model-year vehicles, because those vehicles qualify for the section 1962(d)(5)(C) multiplier and it is not appropriate to have "double" multipliers for the 2004 model year.

Using the April 24, 2003 Resolution 03-4 date as the dividing line between the 0.1 and 0.2 multipliers reflects the Board's intent that the increase in the multiplier was intended to provide a further incentive for future re-leases of ZEVs that have already been on the road. What had been the last sentence in the first "15-day" notice version is no longer necessary because all referenced vehicles will be covered by the new language regarding vehicles re-leased prior to April 24, 2003.]

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(i) *ZEV-Specific Definitions.* The following definitions apply to this section 1962.

(1) "Advanced technology PZEV" or "AT PZEV" means any PZEV with an allowance greater than 0.2 before application of the PZEV early introduction phase-in multiplier ~~or the high efficiency multiplier.~~

(2) "Battery electric vehicle" means any vehicle that operates solely by use of a battery or battery pack, or that is powered primarily through the use of an electric battery or battery pack but uses a flywheel or capacitor that stores energy produced by the electric motor or through regenerative braking to assist in vehicle operation.

(2.5) "Electric drive system" means an electric motor and associated power electronics which provide acceleration torque to the drive wheels sometime during normal vehicle operation. This does not include components that could act as a motor, but are configured to act only as a generator or engine starter in a particular vehicle application.

[Supplemental Commentary: Several commenters asked whether hybrid electric drive systems should be evaluated based on the total power of their electrical motor/generator systems (motor plus generator) or just the motor alone. This definition is intended to restrict the evaluation of the "electric drive system" to the traction motor only.]

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Note: Authority cited: Sections 39600, 39601, 43013, 43018, 43101, 43104 and 43105, Health and Safety Code. Reference: Sections 39002, 39003, 39667, 43000, 43009.5, 43013, 43018, 43100, 43101, 43101.5, 43102, 43104, 43105, 43106, 43107, 43204, and 43205.5, Health and Safety Code.

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