

# PROPOSED 2008 AMENDMENTS TO THE CALIFORNIA ZERO EMISSION VEHICLE REGULATION

1. Adopt section 1962.1 as follows (**This is a newly adopted regulation, shown without underline as permitted by California Code of Regulations, title 1, section 8.**):

## **§ 1962.1 Zero-Emission Vehicle Standards for 2009 and Subsequent Model Year Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles.**

(a) **ZEV Emission Standard.** The Executive Officer shall certify new 2009 and subsequent model passenger cars, light-duty trucks and medium-duty vehicles as ZEVs if the vehicles produce zero exhaust emissions of any criteria pollutant (or precursor pollutant) under any and all possible operational modes and conditions.

(b) **Percentage ZEV Requirements.**

(1) **General Percentage ZEV Requirement.**

(A) **Basic Requirement.** The minimum percentage ZEV requirement for each manufacturer is listed in the table below as the percentage of the PCs and LDT1s, and LDT2s to the extent required by section (b)(1)(C), produced by the manufacturer and delivered for sale in California that must be ZEVs, subject to the conditions in this section 1962.1(b).

<i>Model Years</i>	<i>Minimum ZEV Requirement</i>
2009 through 2011	11 %
2012 through 2014	12 %
2015 through 2017	14 %
2018 and subsequent	16 %

(B) **Calculating the Number of Vehicles to Which the Percentage ZEV Requirement is Applied.** A manufacturer's production volume of PCs and LDT1s, and LDT2s as applicable, produced and delivered for sale in California to comply with a given model year ZEV requirement will be based on a three-year average of the manufacturer's volume of PCs and LDT1s, and LDT2s as applicable, produced and delivered for sale in California in the prior fourth, fifth and sixth years (e.g. 2010 model-year ZEV requirements will be based on California production volumes of PCs and LDT1s, and LDT2s as applicable, for the 2004 to 2006 model years). This production averaging is used to determine ZEV requirements only, and has no effect on a manufacturer's size determination. As an alternative to the three year averaging of prior year production described above, a manufacturer may elect to base its ZEV obligation on the number of PCs and LDT1s, and LDT2s to the extent required by section (b)(1)(C), produced by the manufacturer and delivered for sale in California that same model year. In applying the ZEV requirement, a PC, LDT1, or LDT2 as

applicable, that is produced by a small volume manufacturer, but is marketed in California by another manufacturer under the other manufacturer's nameplate, shall be treated as having been produced by the marketing manufacturer.

**(C) Phase-in of ZEV Requirements for LDT2s.** Beginning with the ZEV requirements for the 2009 model year, a manufacturer's LDT2 production shall be included in determining the manufacturer's overall ZEV requirement under section (b)(1)(A) in the increasing percentages shown the table below.

2009	2010	2011	2012+
51%	68%	85%	100%

**(D) Exclusion of ZEVs in Determining a Manufacturer's Sales Volume.** In calculating for purposes of sections 1962.1(b)(1)(B) and 1962.1(b)(1)(C) the volume of PCs, LDT1s and LDT2s a manufacturer has produced and delivered for sale in California, the manufacturer shall exclude the number of ZEVs produced by the manufacturer, or by a subsidiary in which the manufacturer has a greater than 50 percent ownership interest, and delivered for sale in California.

**(2) Requirements for Large Volume Manufacturers.**

**(A) Primary Requirements for Large Volume Manufacturers through Model Year 2011.**

In the 2009 through 2011 model years, a large-volume manufacturer must meet at least 22.5 percent of its ZEV requirement with ZEVs or ZEV credits generated by such vehicles, and at least another 22.5 percent with ZEVs, advanced technology PZEVs, or credits generated by such vehicles. The remainder of the large-volume manufacturer's ZEV requirement may be met using PZEVs or credits generated by such vehicles.

**(B) Alternative Requirements for Large Volume Manufacturers through Model Year 2011.**

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

**a. [RESERVED].**

**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 a cumulative percentage ZEV requirement of 0.65 percent of the manufacturer's average annual California sales of PCs and LDT1s 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 or Type II ZEVs, provided that 2 Type I ZEVs or 1.33 Type II ZEVs or 0.8 Type IV ZEVs will equal one Type III ZEV.

c. **[RESERVED].**

d. **[RESERVED].**

e. **[RESERVED]**

f. **Exclusion of Additional Credits for Transportation Systems.**

Any additional credits for transportation systems generated in accordance with section 1962.1(g)(5) shall not be counted towards compliance with this section 1962.1(b)(2)(B)1.b.

g. **Carry-over of Excess Credits.** ZEV credits generated from excess production in model years 2005 through 2008 may be carried forward and applied to the 2009 through 2011 minimum floor requirement specified in 1962.1(b)(2)(B)1.b. provided that the value of these carryover credits shall be based on the model year in which the credits are used. Beginning in 2012, these credits may no longer be used to meet the ZEV requirement; they may be used as Enhanced AT PZEV, AT PZEV, or PZEV credits. ZEV credits earned in model year 2009 and subsequent would be allowed to be carried forward for two years for application to the ZEV requirement. For example, ZEV credit earned in 2010 would retain full flexibility through 2012, at which time that credit could only be used as Enhanced AT PZEV, AT PZEV, or PZEV credits, and could not be used to satisfy the ZEV credit obligation, which may only be satisfied with credit generated from ZEVs.

h. **Failure to Meet Requirement for Production of Type III ZEVs.** A manufacturer that, after electing to be subject to the alternative requirements in section 1962.1(b)(2)(B) for any model year from 2009 through 2011, fails to meet the requirement in section 1962.1(b)(2)(B)1.b. by the end of the specified three year period in which the model year falls, shall be treated as subject to the primary requirements in section 1962.1(b)(2)(A) for all model years in the specified three year period.

i. **Rounding Convention.** The number of Type III ZEVs needed for a manufacturer under section 1962.1(b)(2)(B)1.b. shall be rounded to the nearest whole number.

2. **Compliance with Percentage ZEV Requirements.** In the 2009 through 2011 model years, a large volume manufacturer electing to be subject to the alternative compliance requirements in a given model year must meet at least 45 percent of its ZEV requirement for that model year with ZEVs, advanced technology PZEVs, or credits generated from such vehicles. The remainder of the large volume manufacturer's ZEV requirement may be met using PZEVs or credits generated from such vehicles.

**3. Sunset of Alternative Requirements after the 2011 Model Year.**

The alternative requirements in section 1962.1(b)(2)(B) are not available after the 2011 model year.

**(C) Election of the Primary or Alternative Requirements for Large Volume Manufacturers for the 2009 through 2011 Model Years.** A large volume manufacturer shall be subject to the primary ZEV requirements for the 2009 model year unless it notifies the Executive Officer in writing prior to the start of the 2009 model year that it is electing to be subject to the alternative compliance requirements for that model year. Thereafter, a manufacturer shall be subject to the same compliance option as applied in the previous model year unless it notifies the Executive Officer in writing prior to the start of a new model year that it is electing to switch to the other compliance option for that new model year. However, a large volume manufacturer that has previously elected to be subject to the primary ZEV requirements for one or more of the model years in the three year period identified in section 1962.1(b)(1)(B)1.b. may prior to the end of the three year period elect to become subject to the alternative compliance requirements for the full three year period upon a demonstration that it has complied with all of the applicable requirements for that period in section 1962.1(b)(2)(B)1.b.

**(D) Requirements for Large Volume Manufacturers in Model Years 2012 through 2017.**

In the 2012 through 2017 model years, a large-volume manufacturer must meet the ZEV total percent requirement as shown in the table below with ZEVs or ZEV credits generated by such vehicles. The entire requirement may be met solely with ZEVs. Optionally, a manufacturer may choose to meet or exceed the minimum ZEV floor and then satisfy the remainder of the manufacturer requirement using Enhanced AT PZEVs, AT PZEVs, and PZEVs. The following table enumerates the total percent ZEV requirement and the maximum component percentages for the optional Enhanced AT PZEV, AT PZEV, and PZEV categories that may be used to meet the total percentage ZEV requirement.

Years	Total ZEV Percent Requirement	Minimum ZEV floor percentage range	Enhanced AT PZEVs percentage range	AT PZEVs	PZEVs up to
2012 – 2014	12	0.3 – 3.0	0.0 – 2.7	3.0	6.0
2015 – 2017	14	3.0 – 6.0	0.0 – 3.0	2.0	6.0

**(E) Requirements for Large Volume Manufacturers in Model Year 2018 and Subsequent.**

In the 2018 and subsequent model years, a large-volume manufacturer must meet a ZEV total percent requirement of 16 percent. The maximum portion of a

large volume manufacturer's percentage ZEV requirement that may be satisfied by PZEVs that are not advanced technology PZEVs, or credits generated by such vehicles, is limited to 6 percent of the manufacturer's applicable California PC, LDT1, and LDT2 production volume; advanced technology PZEVs or credits generated by such vehicles may be used to meet up to one-half of the manufacturer's remaining ZEV requirement.

**(3) Requirements for Intermediate Volume Manufacturers.** In 2009 and subsequent model years, an intermediate volume manufacturer may meet its ZEV requirement with up to 100 percent PZEVs or credits generated by such vehicles.

**(4) Requirements for Small Volume Manufacturers and Independent Low Volume Manufacturers.** A small volume manufacturer or an independent low volume manufacturer is not required to meet the percentage ZEV requirements. However, a small volume manufacturer or an independent low volume manufacturer may earn and market credits for the ZEVs or PZEVs it produces and delivers for sale in California.

**(5) Counting ZEVs and PZEVs in Fleet Average NMOG Calculations.** For the purposes of calculating a manufacturer's fleet average NMOG value and NMOG credits under sections 1960.1(g)(2) and 1961(b) and (c), a vehicle certified as a ZEV is counted as one ZEV, and a PZEV is counted as one SULEV certified to the 150,000 mile standards regardless of any ZEV or PZEV multipliers.

**(6) [RESERVED]**

**(7) Changes in Small Volume, Independent Low Volume, and Intermediate Volume Manufacturer Status.**

**(A) Increases in California Production Volume.** In 2009 and subsequent model years, if a small volume manufacturer's average California production volume exceeds 4,500 units of new PCs, LDTs, and MDVs based on the average number of vehicles produced and delivered for sale for the three previous consecutive model years, or if an independent low volume manufacturer's average California production volume exceeds 10,000 units of new PCs, LDTs, and MDVs based on the average number of vehicles produced and delivered for sale for the three previous consecutive model years, the manufacturer shall no longer be treated as a small volume, or independent low volume manufacturer, as applicable, and shall comply with the ZEV requirements for independent low volume or intermediate volume manufacturers, as applicable, beginning with the sixth model year after the last of the three consecutive model years.

If an intermediate volume manufacturer's average California production volume exceeds 60,000 units of new PCs, LDTs, and MDVs based on the average number of vehicles produced and delivered for sale for the three previous consecutive model years, the manufacturer shall no longer be treated as an intermediate volume manufacturer and shall, beginning with the sixth model year after the last of the three

consecutive model years, meet the ZEV requirements with PZEVs, of which at least one-fourth would have to be AT PZEVs and shall, beginning with the ninth model year after the last of the three consecutive model years, meet the ZEV regulation requirements with PZEVs, of which at least one-third would have to be AT PZEVs. The manufacturer would comply with all ZEV requirements for large volume manufacturers beginning with the twelfth model year after the last of the three consecutive model years.

The lead time shall be four rather than six years where a manufacturer ceases to be a small or intermediate volume manufacturer in 2003 or subsequent years due to the aggregation requirements in majority ownership situations, except that if the majority ownership in the manufacturer was acquired prior to the 2001 model year, the manufacturer must comply with the stepped-up ZEV requirements starting in the 2010 model year.

**(B) Decreases in California Production Volume.** If a manufacturer's average California production volume falls below 4,500, 10,000 or 60,000 units of new PCs, LDTs, and MDVs, as applicable, based on the average number of vehicles produced and delivered for sale for the three previous consecutive model years, the manufacturer shall be treated as a small volume, independent low volume, or intermediate volume manufacturer, as applicable, and shall be subject to the requirements for a small volume, independent low volume, or intermediate volume manufacturer beginning with the next model year.

**(C) Calculating California Production Volume in Change of Ownership Situations.** Where a manufacturer experiences a change in ownership in a particular model year, the change will affect application of the aggregation requirements on the manufacturer starting with the next model year. The manufacturer's small or intermediate volume manufacturer status for the next model year shall be based on the average California production volume in the three previous consecutive model years of those manufacturers whose production volumes must be aggregated for that next model year. For example, where a change of ownership during the 2010 model year results in a requirement that the production volume of Manufacturer A be aggregated with the production volume of Manufacturer B, Manufacturer A's status for the 2011 model year will be based on the production volumes of Manufacturers A and B in the 2008-2010 model years. Where the production volume of Manufacturer A must be aggregated with the production volumes of Manufacturers B and C for the 2010 model year, and during that model year a change in ownership eliminates the requirement that Manufacturer B's production volume be aggregated with Manufacturer A's, Manufacturer A's status for the 2011 model year will be based on the production volumes of Manufacturers A and C in the 2008-2010 model years. In either case, the lead time provisions in section 1962.1(b)(5)(A) and (B) will apply.

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

**(1) Introduction.** This section 1962.1(c) sets forth the criteria for identifying vehicles delivered for sale in California as PZEVs. The PZEV is a vehicle that cannot be certified as a ZEV but qualifies for a PZEV allowance of at least 0.2.

**(2) Baseline PZEV Allowance.** In order for a vehicle to be eligible to receive a PZEV allowance, the manufacturer must demonstrate compliance with all of the following requirements. A qualifying vehicle will receive a baseline PZEV allowance of 0.2.

**(A) SULEV Standards.** Certify the vehicle to the 150,000-mile SULEV exhaust emission standards for PCs and LDTs in section 1961(a)(1). Bi-fuel, fuel-flexible and dual-fuel vehicles must certify to the applicable 150,000-mile SULEV exhaust emission standards when operating on both fuels;

**(B) Evaporative Emissions.** Certify the vehicle to the evaporative emission standards in section 1976(b)(1)(E) (zero-fuel evaporative emissions standards);

**(C) OBD.** Certify that the vehicle will meet the applicable on-board diagnostic requirements in sections 1968.1 or 1968.2, as applicable, for 150,000 miles; and

**(D) Extended Warranty.** Extend the performance and defects warranty period set forth in sections 2037(b)(2) and 2038(b)(1) to 15 years or 150,000 miles, whichever occurs first, except that the time period is to be 10 years for a zero emission energy storage device used for traction power (such as a battery, ultracapacitor, or other electric storage device ).

**(3) Zero-Emission VMT PZEV Allowance.**

**(A) Calculation of Zero Emission VMT Allowance.** A vehicle that meets the requirements of section 1962.1(c)(2) and has zero-emission vehicle miles traveled ("VMT") capability will generate an additional zero emission VMT PZEV allowance calculated as follows:

<i>Urban Equivalent All-Electric Range (EAER)</i>	<i>Zero-emission VMT Allowance</i>
< 10 miles	0.0
10 miles to 100 miles	$EAER \times (1 - UF_{R_{cd}})/14.6$
> 100 miles	1.58

The urban equivalent all-electric range (EAER) and urban charge depletion range ( $R_{cd}$ ) shall be determined in accordance with section E.3.(2)(a) of the “California Exhaust Emission Standards and Test Procedures for 2009 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,” incorporated by reference in section 1962.1(h). Utility Factor (UF) based on the charge depletion range ( $R_{cd}$ ) shall be determined according to the 0-100 mile 4th order curve fit from SAE J1711, issued March 1999, p52.

**(B) *Alternative Procedures.*** As an alternative to determining the zero-emission VMT allowance in accordance with the preceding section 1962.1(c)(3)(A), a manufacturer may submit for Executive Officer approval an alternative procedure for determining the zero-emission VMT potential of the vehicle as a percent of total VMT, along with an engineering evaluation that adequately substantiates the zero-emission VMT determination. For example, an alternative procedure may provide that a vehicle with zero emissions of one regulated pollutant (e.g., NO<sub>x</sub>) and not another (e.g., NMOG) will qualify for a zero-emission VMT allowance of 1.5.

**(C) *[RESERVED].***

**(4) *PZEV Allowance for Advanced ZEV Componentry.*** A vehicle that meets the requirements of section 1962.1(c)(2) may qualify for an advanced componentry PZEV allowance as provided in this section 1962.1(c)(4).

**(A) *Use of High Pressure Gaseous Fuel or Hydrogen Storage System.*** A vehicle equipped with a high pressure gaseous fuel storage system capable of refueling at 3600 pounds per square inch or more and operating exclusively on this gaseous fuel shall qualify for an advanced componentry PZEV allowance of 0.2. A vehicle capable of operating exclusively on hydrogen stored in a high pressure system capable of refueling at 3600 pounds per square inch or more, or stored in nongaseous form, shall instead qualify for an advanced componentry PZEV allowance of 0.3.

**(B) *Use of a Qualifying HEV Electric Drive System.***

**1. *Classification of HEVs.*** HEVs qualifying for additional advanced componentry PZEV allowance or allowances that may be used in the AT PZEV category are classified in one of four types of HEVs based on the criteria in the



following table. HEVs must qualify for the Zero-Emission VMT Allowance in section 1962.1(c)(3)(A) and achieve 10 miles or more of all electric UDDS range in addition to meeting the requirements in the following table to qualify for Type F advanced componentry allowance.

<i>Characteristics</i>	<i>Type C</i>	<i>Type D</i>	<i>Type E</i>	<i>Type F</i>
Electric Drive System Peak Power Output	≥ 10 kW	≥ 10 kW	≥ 50 kW	Zero Emission VMT allowance; ≥ 10 mile all-electric range
Traction Drive System Voltage	< 60 Volts	≥ 60 Volts	≥ 60 volts	≥ 60 volts
Traction Drive Boost	Yes	Yes	Yes	Yes
Regenerative Braking	Yes	Yes	Yes	Yes
Idle Start/Stop	Yes	Yes	Yes	Yes

2. **[RESERVED]**

3. **[RESERVED]**

4. **Type C HEVs.** A 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 lithium ion batteries, 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 2009 through 2011 model years, 0.15 in the 2012 through 2014 model years, and 0.1 in the 2015 and subsequent model years.

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 2009 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 2009 through 2011 model years, 0.45 in the 2012 through 2014 model years, and 0.35 in the 2015 and subsequent model years.

**7. Type F HEVs.** A PZEV that the manufacturer demonstrates to the reasonable satisfaction of the Executive Officer meets all of the criteria for a Type F HEV qualifies for an additional advanced componentry allowance of 0.85 in the 2009 through 2011 model years, 0.8 in the 2012 through 2014 model years, and 0.7 in the 2015 and subsequent model years.

**8. Severability.** In the event that all or part of section 1962.1(c)(4)(B)1.-7. is found invalid, the remainder of section 1962.1, including the remainder of section 1962.1(c)(4)(B)1.-7. if any, remains in full force and effect.

**(5) PZEV Allowance for Low Fuel-Cycle Emissions.** A vehicle that makes exclusive use of fuel(s) with very low fuel-cycle emissions shall receive a PZEV allowance of 0.3. In order to receive the PZEV low fuel-cycle emissions allowance, a manufacturer must demonstrate to the Executive Officer, using peer-reviewed studies or other relevant information, that NMOG emissions associated with the fuel(s) used by the vehicle (on a grams/mile basis) are lower than or equal to 0.01 grams/mile. Fuel-cycle emissions must be calculated based on near-term production methods and infrastructure assumptions, and the uncertainty in the results must be quantified.

**(6) Calculation of PZEV Allowance.**

**(A) Calculation of Combined PZEV Allowance for a Vehicle.** The combined PZEV allowance for a qualifying vehicle in a particular model year is the sum of the PZEV allowances listed in this section 1962.1(c)(6), multiplied by any PZEV introduction phase-in multiplier listed in section 1962.1(c)(7), subject to the caps in section 1962.1(c)(6)(B).

**1. Baseline PZEV Allowance.** The baseline PZEV allowance of 0.2 for vehicles meeting the criteria in section 1962.1(c)(2);

**2. Zero-Emission VMT PZEV Allowance.** The zero-emission VMT PZEV allowance, if any, determined in accordance with section 1962.1(c)(3);

**3. Advanced Componentry PZEV Allowance.** The advanced ZEV componentry ZEV allowance, if any, determined in accordance with section 1962.1(c)(4); and

**4. Fuel-Cycle Emissions PZEV Allowance.** The fuel-cycle emissions ZEV allowance, if any, determined in accordance with section 1962.1(c)(5).

**(B) Caps on the Value of an AT PZEV Allowance.**

**1. Cap for 2012 and Subsequent Model-Year Vehicles.** The maximum value an AT PZEV may earn before phase-in multipliers, including the baseline PZEV allowance, is 3.0.

2. **[RESERVED].**

(7) **PZEV Multipliers.**

(A) **[RESERVED].**

(B) **Introduction Phase-In Multiplier for PZEVs That Earn a Zero Emission VMT Allowance.** Each 2009 through 2011 model year PZEV that earns a zero emission VMT allowance under section 1962.1(c)(3) and is produced and delivered for sale in California qualifies for a phase-in multiplier of 3.0.

(d) **Qualification for ZEV Multipliers and Credits.**

(1) **[RESERVED].**

(2) **[RESERVED].**

(3) **[RESERVED].**

(4) **[RESERVED].**

(5) **ZEV Credits for 2009 and Subsequent Model Years.**

(A) **ZEV Tiers for Credit Calculations.** ZEV credits from a particular ZEV are based on the assignment of a given ZEV into one of the following six ZEV tiers:

<i>ZEV Tier</i>	<i>UDDS ZEV Range (miles)</i>	<i>Fast Refueling Capability</i>
NEV	No minimum	N/A
Type 0	< 50	N/A
Type I	≥ 50, <75	N/A
Type I.5	≥ 75, <100	N/A
Type II	≥ 100	N/A
Type III	≥ 100	Must be capable of replacing 95 miles (UDDS ZEV range) in ≤ 10 minutes per section 1962.1(d)(5)(B)
OR	≥ 200	N/A
Type IV	≥ 200	Must be capable of replacing 190 miles (UDDS ZEV range) in ≤ 10 minutes per section 1962.1(d)(5)(B)

**(B) Fast Refueling.** The “fast refueling capability” requirement for a 2009 and subsequent model-year Type III or IV ZEV in section 1962(d)(5)(A) will be considered met if the Type III ZEV has the capability to accumulate at least 95 miles of UDDS range in 10 minutes or less and the Type IV ZEV has the capability to accumulate at least 190 miles in 15 minutes or less.

**(C) ZEV Credits for 2009 and Subsequent Model-Year ZEVs.** A 2009 and subsequent model-year ZEV, other than a NEV or Type 0, earns 1 ZEV credit when it is produced and delivered for sale in California. A 2009 and subsequent model-year ZEV earns additional credits based on the earliest year in which the ZEV is placed in service (not earlier than the ZEV’s model year). The following table identifies the total credits that a ZEV in each of the six ZEV tiers will earn, including the credit not contingent on placement in service, if it is placed in service in the specified model year or by June 30 after the end of the specified calendar year.

<i>Total Credit Earned by ZEV Type and Model Year for Production and Delivery for Sale and for Placement</i>		
<i>Tier</i>	<i>Year in Which ZEV is Placed in Service</i>	
	<i>2009-2017</i>	<i>2018+</i>
NEV	0.30	0.30
Type 0	1	1
Type I	2	2
Type I.5	2.5	2.5
Type II	3	3
Type III	4	3
Type IV	5	3

**(D) Multiplier for Certain Type I and Type II ZEVs.** A 2009 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.

**(E) Counting Specified ZEVs Placed in a Section 177 State.** As specified in the table below, specified model year Type I, I.5, II, III or IV ZEVs that are certified to the California ZEV standards and are placed in service in a state that is administering the California ZEV requirements pursuant to section 177 of the federal Clean Air Act (42 U.S.C. § 7507) applicable for the ZEV's model year may be counted towards compliance with the California percentage ZEV requirements in section 1962.1(b), including the requirements in section 1962.1(b)(2)(B), as if they were delivered for sale and placed in service in California. Similarly, specified model year Type I, I.5, II, III or IV ZEVs that are certified to the California ZEV standards and are placed in service in California may be counted towards the percentage ZEV requirements of any state that is administering the California ZEV requirements pursuant to section 177 of the federal Clean Air Act, including requirements based on section 1962.1(b)(2)(B).

Vehicle Type	Through Model Year:
Type I, I.5, or II ZEV	2014
Type III or IV ZEV	2017

(e) **[RESERVED]**

(f) **[RESERVED]**

(g) **Generation and Use of ZEV Credits; Calculation of Penalties**

(1) **Introduction.** A manufacturer that produces and delivers for sale in California ZEVs or PZEVs in a given model year exceeding the manufacturer's ZEV requirement set forth in section 1962.1(b) shall earn ZEV credits in accordance with this section 1962.1(g).

(2) **ZEV Credit Calculations.**

(A) **Credits from ZEVs.** The amount of g/mi ZEV credits earned by a manufacturer in a given model year from ZEVs shall be expressed in units of g/mi NMOG, and shall be equal to the number of credits from ZEVs produced and delivered for sale in California that the manufacturer applies towards meeting the ZEV requirements for the model year subtracted from the number of ZEVs produced and delivered for sale in California by the manufacturer in the model year and then multiplied by the NMOG fleet average requirement for PCs and LDT1s, and LDT2s as applicable, for that model year.

(B) **Credits from PZEVs.** The amount of g/mi ZEV credits from PZEVs earned by a manufacturer in a given model year shall be expressed in units of g/mi NMOG, and shall be equal to the total number of PZEVs produced and delivered for sale in California that the manufacturer applies towards meeting its ZEV requirement for the model year subtracted from the total number of PZEV allowances from PZEVs produced and delivered for sale in California by the manufacturer in the model year and then multiplied by the NMOG fleet average requirement for PCs and LDT1s, and LDT2s as applicable, for that model year.

(C) **Separate Credit Accounts.** The number of credits from a manufacturer's [i] ZEVs, [ii] advanced technology PZEVs, and [iii] all other PZEVs shall each be maintained separately.

(3) **ZEV Credits for MDVs and LDTs Other Than LDT1s.** ZEVs and PZEVs classified as MDVs or as LDTs other than LDT1s may be counted toward the ZEV requirement for PCs, LDT1s and LDT2s as applicable, and included in the calculation of ZEV credits as specified in this section 1962.1(g) if the manufacturer so designates.

**(4) ZEV Credits for Advanced Technology Demonstration Programs.** In model years 2009 through 2014, a vehicle, other than a NEV, which is placed in a California advanced technology demonstration program for a period of two or more years, may earn ZEV credits even if it is not “delivered for sale” or registered with the California Department of Motor Vehicles (DMV). To earn such credits, the manufacturer must demonstrate to the reasonable satisfaction of the Executive Officer that the vehicles will be regularly used in applications appropriate to evaluate issues related to safety, infrastructure, fuel specifications or public education, and that for 50 percent or more of the first two years of placement the vehicle will be situated in California. Such a vehicle is eligible to receive the same allowances and credits that it would have earned if placed in service. To determine vehicle credit, the model-year designation for a demonstration vehicle shall be consistent with the model-year designation for conventional vehicles placed in the same timeframe. Manufacturers may earn credit for as many as six vehicles under this section 1962.1(g)(5). A manufacturer’s vehicles in excess of the six-vehicle cap will not be eligible for advanced technology demonstration program credits.

**(5) ZEV Credits for Transportation Systems.**

**(A) General.** In model years 2009 and subsequent, a ZEV placed, for two or more years, as part of a transportation system may earn additional ZEV credits, which may be used in the same manner as other credits earned by vehicles of that category, except as provided in section (g)(5)(C) below. In model years 2009 through 2011, an advanced technology PZEV or PZEV placed as part of a transportation system may earn additional ZEV credits, which may be used in the same manner as other credits earned by vehicles of that category, except as provided in section (g)(5)(C) below. A NEV is not eligible to earn credit for transportation systems. To earn such credits, the manufacturer must demonstrate to the reasonable satisfaction of the Executive Officer that the vehicle will be used as a part of a project that uses an innovative transportation system as described in section (g)(5)(B) below.

**(B) Credits Earned.** In order to earn additional credit under this section (g)(5), a project must at a minimum demonstrate [i] shared use of ZEVs, AT PZEVs or PZEVs, and [ii] the application of “intelligent” new technologies such as reservation management, card systems, depot management, location management, charge billing and real-time wireless information systems. If, in addition to factors [i] and [ii] above, a project also features linkage to transit, the project may receive further additional credit. For ZEVs only, not including NEVs, a project that features linkage to transit, such as dedicated parking and charging facilities at transit stations, but does not demonstrate shared use or the application of intelligent new technologies, may also receive additional credit for linkage to transit. The maximum credit awarded per vehicle shall be determined by the Executive Officer, based upon an application submitted by the manufacturer and, if appropriate, the project manager. The maximum credit awarded shall not exceed the following:

<i>Type of Vehicle</i>	<i>Model Year</i>	<i>Shared Use, Intelligence</i>	<i>Linkage to Transit</i>
PZEV	through 2011	2	1
AT PZEV	through 2011	4	2
ZEV	2009 through 2011	6	3
ZEV	2012 and subsequent	2	1

**(C) Cap on Use of Credits.**

1. **ZEVs.** Credits earned or allocated by ZEVs pursuant to this section (g)(5), not including all credits earned by the vehicle itself, may be used to satisfy up to one-tenth of a manufacturer's ZEV obligation in any given model year.

2. **AT PZEVs.** Credits earned or allocated by AT PZEVs pursuant to this section (g)(5), not including all credits earned by the vehicle itself, may be used to satisfy up to one-twentieth of a manufacturer's ZEV obligation in any given model year, but may only be used in the same manner as other credits earned by vehicles of that category.

3. **PZEVs.** Credits earned or allocated by PZEVs pursuant to this section (g)(5), not including all credits earned by the vehicle itself, may be used to satisfy up to one-fiftieth of the manufacturer's ZEV obligation in any given model year, but may only be used in the same manner as other credits earned by vehicles of that category.

**(D) Allocation of Credits.** Credits shall be assigned by the Executive Officer to the project manager or, in the absence of a separate project manager, to the vehicle manufacturers upon demonstration that a vehicle has been placed in a project. Credits shall be allocated to vehicle manufacturers by the Executive Officer in accordance with a recommendation submitted in writing by the project manager and signed by all manufacturers participating in the project, and need not be allocated in direct proportion to the number of vehicles placed.

**(6) Use of ZEV Credits.** A manufacturer may meet the ZEV requirements in any given model year by submitting to the Executive Officer a commensurate amount of g/mi ZEV credits, consistent with section 1962.1(b). These credits may be earned previously by the manufacturer or acquired from another party, except that credits earned from NEVs offered for sale or placed in service in model years 2001 through 2005 cannot be used to satisfy more than 50 percent of a manufacturer's percentage ZEV obligation that may only be satisfied with credits from ZEVs. The manufacturer's percentage ZEV obligation that may be satisfied by credits from AT PZEVs but not PZEVs is listed in the table below:



<i>AT PZEV Category</i>	
<i>2009</i>	<i>2010 and beyond</i>
<i>75%</i>	<i>50%</i>

This limitation applies to credits earned in model years 2001 through 2005 by the same manufacturer or earned in model years 2001 through 2005 by another manufacturer and acquired. The amount of g/mi ZEV credits required to be submitted shall be calculated according to the criteria set forth in this section 1962.1(g).

ZEV credits generated from excess production in model years 2009 and subsequent, including those acquired from another party, may be carried forward and applied to the ZEV minimum floor requirement specified in 1962.1(b)(2)(B)1.b. for two subsequent model years. Beginning with the third subsequent model year, those earned ZEV credits may no longer be used to satisfy the manufacturer's percentage ZEV obligation that may only be satisfied by credits from ZEVs, but may be used to satisfy the manufacturer's percentage ZEV obligation that may be satisfied by credits from Enhanced AT PZEVs, AT PZEVs, or PZEVs. For example, ZEV credit earned in 2010 would retain full flexibility through 2012, at which time that credit could only be used as Enhanced AT PZEV, AT PZEV, or PZEV credits.

**(7) Requirement to Make Up a ZEV Deficit.**

**(A) General.** A manufacturer that produces and delivers for sale in California fewer ZEVs than required in a given model year shall make up the deficit by the end of the third model year by submitting to the Executive Officer a commensurate amount of g/mi ZEV credits. The amount of g/mi ZEV credits required to be submitted shall be calculated by [i] adding the number of ZEVs produced and delivered for sale in California by the manufacturer for the model year to the number of ZEV allowances from partial ZEV allowance vehicles produced and delivered for sale in California by the manufacturer for the model year (for a large volume manufacturer, not to exceed that permitted under section 1962.1(b)(2)), [ii] subtracting that total from the number of ZEVs required to be produced and delivered for sale in California by the manufacturer for the model year, and [iii] multiplying the resulting value by the fleet average requirements for PCs and LDT1s for the model year in which the deficit is incurred.

**(8) Penalty for Failure to Meet ZEV Requirements.** Any manufacturer that fails to produce and deliver for sale in California the required number of ZEVs and submit an appropriate amount of g/mi ZEV credits and does not make up ZEV deficits within the specified time period shall be subject to the Health and Safety Code section 43211 civil penalty applicable to a manufacturer that sells a new motor vehicle that does not meet the applicable emission standards adopted by the state board. The cause of action shall be deemed to accrue when the ZEV deficits are not balanced by the end of the specified time period. For the purposes of Health and Safety Code section 43211, the number of vehicles not meeting the state board's standards shall be calculated according to the following equation, provided that the percentage of a large

volume manufacturer's ZEV requirement for a given model year that may be satisfied with partial ZEV allowance vehicles or ZEV credits from such vehicles may not exceed the percentages permitted under section 1962.1(b)(2)(A):

(No. of ZEVs required to be produced and delivered for sale in California for the model year) - (No. of ZEVs produced and delivered for sale in California for the model year) - (No. of ZEV allowances from partial ZEV allowance vehicles produced and delivered for sale in California for the model year) - [(Amount of ZEV credits submitted for the model year) / (the fleet average requirement for PCs and LDT1s for the model-year)].

**(h) Test Procedures.** The certification requirements and test procedures for determining compliance with this section 1962.1 are set forth in "California Exhaust Emission Standards and Test Procedures for 2009 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," adopted by the state board on August 5, 1999, and last amended [Insert date of amendment], which is incorporated herein by reference.

**(i) ZEV-Specific Definitions.** The following definitions apply to this section 1962.1.

(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

(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.

(3) "Charge depletion range or  $R_{cd}$ " means the distance achieved by a hybrid electric vehicle on a specified driving cycle at the point when the zero emission energy storage device is depleted of off-vehicle charge and regenerative braking derived energy.

(4) "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.

(5) "Electric range fraction" means the fraction of electrical energy derived from off-vehicle charging and regenerative braking energy relative to total traction energy used over the charge depletion range on a specified drive cycle.

(6) “Enhanced AT PZEV” means any PZEV that has an allowance of 1.0 or greater per vehicle without multipliers and makes use of a ZEV fuel.

(7) “Equivalent all electric range” means the charge depletion range multiplied by the electric range fraction ( $EAER = R_{cd} \times ERF$ )

(8) “Neighborhood electric vehicle” means a motor vehicle that meets the definition of Low-Speed Vehicle either in section 385.5 of the Vehicle Code or in 49 CFR 571.500 (as it existed on July 1, 2000), and is certified to zero-emission vehicle standards.

(9) “Placed in service” means having been sold or leased to an end-user and not to a dealer or other distribution chain entity, and having been individually registered for on-road use by the California Department of Motor Vehicles.

(10) “Regenerative braking” means the partial recovery of the energy normally dissipated into friction braking that is returned as electrical current to an energy storage device.

(11) “Type 0, I, I.5, II, III, and IV ZEV” all have the meanings set forth in section 1962.1(d)(5)(A).

(12) “ZEV fuel” means a fuel that provides traction energy in on-road ZEVs. Examples of current technology ZEV fuels include electricity, hydrogen, and compressed air.

**(j) Abbreviations.** The following abbreviations are used in this section 1962.1:

“AER” means all-electric range.

“BEV” means battery electric vehicle.

“ERF” means electric range fraction.

“EAER” means equivalent all electric range.

“HEV” means hybrid-electric vehicle.

“HFEDS” means highway fuel economy driving cycle.

“LDT” means light-duty truck.

“LDT1” means a light-truck with a loaded vehicle weight of 0-3750 pounds.

“LDT2” means a “LEV II” light-duty truck with a loaded vehicle weight of 3751 pounds to a gross vehicle weight of 8500 pounds, or a “LEV I” light-duty truck with a loaded vehicle weight of 3751-5750 pounds.

“MDV” means medium-duty vehicle.

“Non-Methane Organic Gases” or “NMOG” means the total mass of oxygenated and non-oxygenated hydrocarbon emissions.

“MY” means model year.

“NEV” means neighborhood electric vehicle.  
“NOx” means oxides of nitrogen.  
“PC” means passenger car.  
“PZEV” means any vehicle that is delivered for sale in California and that qualifies for a partial ZEV allowance of at least 0.2.  
“R<sub>cd</sub>” means charge depletion range  
“SOC” means state of charge.  
“SULEV” means super-ultra-low-emission-vehicle.  
“UDDS” means urban dynamometer driving cycle.  
“ULEV” means ultra-low emission vehicle.  
“VMT” means vehicle miles traveled.  
“ZEV” means zero-emission vehicle.

**(k) Severability.** Each provision of this section is severable, and in the event that any provision of this section is held to be invalid, the remainder of this article remains in full force and effect.

**(l) Public Disclosure.** Records in the Board’s possession for the vehicles subject to the requirements of section 1962.1 shall be subject to disclosure as public records as follows:

(1) Each manufacturer’s annual production data and the corresponding credits per vehicle earned for ZEVs (including ZEV type), Enhanced AT PZEVs, AT PEVs, and PZEVs for the 2009 and subsequent model years; and

(2) Annual Credit balances for 2010 and subsequent years for:

**(A)** Each type of vehicle: ZEVs (minus NEVs), NEVs, Enhanced AT PZEVs, AT PEVs, and PZEVs; and

**(B)** Advanced technology demonstration programs; and

**(C)** Transportation systems; and

**(D)** Credits earned under section 1962.1(d)(5)(C).

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.