

Attachment E

Staff’s Suggested Modifications to the Original ZEV Proposal  
(Distributed at the January 26, 2012 Board hearing)

This attachment shows the modifications to the originally proposed regulatory language. The originally proposed regulatory language is shown in underline to indicate additions and ~~strikeout~~ to indicate deletions. The modifications made to this language are shown in double underline to indicate additions and ~~double-strikeout~~ to indicate deletions. Shown below are only those portions of the originally proposed language that have been modified. Additional changes are also described and modified regulatory language will be developed by staff as described, and the modified language will be made available to the public for a fifteen-day comment period prior to final adoption.

**The Zero Emission Vehicle Regulation: Model Years 2009 through 2017**

***Amend section 1962.1, title 13, California Code of Regulation (CCR), to read as follows:***

**§ 1962.1 Zero-Emission Vehicle Standards for 2009 and ~~Subsequent~~through 2017 Model Year Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles.**

\* \* \* \* \*

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

\* \* \* \* \*

**(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.*** For 2009 through 2014~~3~~ model years, Ccertify the vehicle to the 150,000-mile SULEV exhaust emission standards for PCs and LDTs in ~~section~~subdivision 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. For 2015~~4~~ through 2017 model years, certify the vehicle to the 150,000-mile SULEV 20 or 30 exhaust emission standards for PCs and LDTs in subdivision 1961.2(a)(1), or to the 150,000-mile SULEV exhaust emission standards for PCs and LDTs in subdivision 1961(a)(1). Bi-fuel, fuel flexible and dual-fuel vehicles must certify to the applicable 150,000-mile SULEV 20 or 30 exhaust emission standards when operating on both fuels;

**(B) *Evaporative Emissions.*** For 2009 through 2014~~3~~ model years, Ccertify the vehicle to the evaporative emission standards in ~~section~~subdivision 1976(b)(1)(E) (zero-fuel evaporative emissions standards). For 2015~~4~~ through 2017

model years, certify the vehicle to the evaporative emission standards in subdivision 1976(b)(1)(G) or subdivision 1976(b)(1)(E);

\* \* \* \* \*

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

\* \* \* \* \*

(This section is being added back into staff's proposal)

~~**(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., NOx) and not another (e.g., NMOG) will qualify for a zero-emission VMT allowance of 1.5.~~

\* \* \* \* \*

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

**(A) General.** In model years 2009 through 2011, 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 subdivision (g)(5)(C) below. In model years 2012~~09~~ and subsequent through 2017, 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 subdivision (d)(5)(E)2. and as provided in ~~section~~subdivision (g)(5)(C) below . In model years 2009 through 2011, an ~~Enhanced AT PZEV~~ TZEV, AT 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~~subdivision (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~~subdivision (g)(5)(B) below.

\* \* \* \* \*

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

\* \* \* \* \*

**(5)** “Conventional rounding method” means to increase the last digit to be retained when the following digit is five or greater. Retain the last digit as is when the following digit is four or less.

**(456)** “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.

**(567)** “Enhanced AT PZEV” means any model year 2009 through 2011 PZEV that has an allowance of 1.0 or greater per vehicle without multipliers and makes use of a ZEV fuel. Enhanced AT PZEV means Transitional Zero Emission Vehicle.

**(678)** “Neighborhood electric vehicle” or “NEV” 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.

**(789)** “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 DMV.

**(910)** “Proportional value” means the ratio of a manufacturer’s California applicable sales volume to the manufacturer’s Section 177 state applicable sales volume. In any given model year, the same applicable sale volume calculation method must be used to calculate proportional value.

**(4011)** “Range Extended Battery Electric Vehicle” means a vehicle powered predominantly by a zero emission energy storage device, able to drive the vehicle for more than 75 all-electric miles, and also equipped with a backup APU, which does not operate until the energy storage device is fully depleted, and meeting requirements in subdivision 1962.1(d)(5)(G).

**(8112)** “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.

**(91213)** “Section 177 state” means a state that is administering the California ZEV requirements pursuant to section 177 of the federal Clean Air Act (42 U.S.C. § 7507).

~~(1314)~~ “Transitional Zero Emission Vehicle” means a PZEV that has an allowance of 1.0 or greater, and makes use of a ZEV fuel.

~~(101415)~~ “Type 0, I, I.5, II, III, IV, and V ZEV” all have the meanings set forth in section 1962.1(d)(5)(A).

~~(114516)~~ “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.

\* \* \* \* \*

**The Zero Emission Vehicle Regulation: Model Years 2018 and Subsequent**

***Amend section 1962.2, title 13, California Code of Regulation (CCR), to read as follows:***

**§ 1962.2 Zero-Emission Vehicle Standards for 2018 and Subsequent Model Year Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles.**

\* \* \* \* \*

**(c) Transitional Zero Emission Vehicles (TZEV).**

\* \* \* \* \*

**(2) TZEV Requirements.** In order for a vehicle to be eligible to receive a ZEV allowance, the manufacturer must demonstrate compliance with all of the following requirements:

**(A) SULEV Standards.** Certify the vehicle to the 150,000-mile SULEV 20 or 30 exhaust emission standards for PCs and LDTs in subdivision 1961.2(a)(1). Bi-fuel, fuel flexible and dual-fuel vehicles must certify to the applicable 150,000-mile SULEV 20 or 30 exhaust emission standards when operating on both fuels. Manufacturers may certify 2018 and 2019 TZEVs to the 150,000-mile SULEV exhaust emission standards for PCs and LDTs in subdivision 1961(a)(1);

**(B) Evaporative Emissions.** Certify the vehicle to the evaporative emission standards in subdivision 1976(b)(1)(G). Manufacturers may certify 2018 and 2019 TZEVs to the evaporative standards for PCs and LDTs in subdivision 1976(b)(1)(E);

\* \* \* \* \*

**(3) Allowances for TZEVs**

**(A) Zero Emission Vehicle Miles Traveled TZEV Allowance**

**Calculation.** A vehicle that meets the requirements of subdivision 1962.2(c)(2) and has zero-emission vehicle miles traveled (VMT), as defined by and calculated by the “California Exhaust Emission Standards And Test Procedures For 2018 And Subsequent Model Zero-Emission Vehicles And Hybrid Electric Vehicles, In The Passenger Car, Light-Duty Truck And Medium-Duty Vehicle Classes”, incorporated by reference, and measured as ~~all electric R<sub>cda</sub>~~ equivalent all electric range (EAER) capability will generate an allowance according to the following equation:

<i>UDDS Test Cycle Range (R<sub>cda</sub>)</i>	<i>Allowance</i>
<10 all electric miles	0.0
≥10 all electric miles	TZEV Credit = [(0.01) * <del>R<sub>cda</sub></del> <u>EAER</u> + 0.3]
>80 miles (credit cap)	<u>1.31</u>

\* \* \* \* \*

**(G) BEVx.** A BEVx must meet the following in order to receive credit, based on its all electric UDDS Range, through subdivision 1962.2(d)(5)(A):

\* \* \* \* \*

**3. Minimum Zero Emission Range Requirements.** BEVxs must have a minimum of ~~90~~ 75 miles UDDS all electric range.

\* \* \* \* \*

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

\* \* \* \* \*

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

\* \* \* \* \*

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

**1. ZEVs.** Transportation system credits earned or allocated by ZEVs or BEVxs pursuant to subdivision 1962.1 (g)(5), not including any 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, and may be used to satisfy up to one-tenth of a manufacturer’s ZEV obligation which must be met with ZEVs, as specified in subdivision

~~1962.2(b)(2)(E). Manufacturers may not use transportation system credits earned by ZEVs to comply with requirements specified in subdivision 1962.2(d)(5)(F)~~

**2. TZEVs.** Transportation system credits earned or allocated by TZEVs pursuant to subdivision 1962.1(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, but may only be used in the same manner as other credits earned by vehicles of that category. ~~Manufacturers may not use transportation system credits earned by TZEVs to comply with requirements specified in subdivision 1962.2(d)(5)(F)~~

\* \* \* \* \*

**(C) GHG-ZEV Over Compliance Credits.**

**1. Application.** Manufacturers may apply to the Executive Officer, no later than May 1, ~~2018~~2017, to eligible for this subdivision 1962.2(g)(6)(C), based on the following qualifications:

\* \* \* \* \*

**2. Credit Generation and Calculation.** Manufacturers must calculate their over compliance with section 1961.3 requirements for model years 2018 through 2021 based on compliance with the previous model year standard. For example, to generate credits for this subdivision 1962.2(g)(6)(C) for model year 2018, manufacturers would calculate credits based on model year 2017 compliance with section 1961.3.

\* \* \* \* \*

**b.** Credits earned under section 1961.3(~~ba~~)(9) may not be included in the calculation of gCO<sub>2</sub>/mile credits for use in the above equation in subdivision a.

\* \* \* \* \*

**(i) ZEV-Specific Definitions.** The following definitions apply to this section 1962.2.

\* \* \* \* \*

**(3)** “Conventional rounding method” means to increase the last digit to be retained when the following digit is five or greater. Retain the last digit as is when the following digit is four or less.

**(34)** “Discounted PZEV and AT PZEV credits” means credits earned under section 1962 and 1962.1 by delivery for sale of PZEVs and AT PZEVs, discounted according to subdivision 1962.1(g)(2)(F).

**(45)** “Energy storage device” means a storage device able to provide the minimum power and energy storage capability to enable engine stop/start capability, traction boost, regenerative braking, and (nominal) charge sustaining mode driving capability. In the case of TZEVs, a minimum range threshold relative to certified, new-vehicle range capability is not specified or required.

**(56)** “Hydrogen fuel cell vehicle” means a ZEV that is fueled primarily by hydrogen, but may also have off-vehicle charge capability.

**(67)** “Hydrogen internal combustion engine vehicle” means a TZEV that is fueled exclusively by hydrogen.

**(78)** “Majority ownership situations” means when one manufacturer owns another manufacturer more than 33.4%, for determination of size under CCR Section 1900.

**(89)** “Manufacturer US PC and LDT Sales” means a manufacturer’s total passenger car and light duty truck (up to 8,500 pounds loaded vehicle weight) sales sold in the United States of America in a given model year.

**(910)** “Neighborhood electric vehicle” or “NEV” 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.

**(4011)** “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 DMV.

**(4112)** “Proportional value” means the ratio of a manufacturer’s California applicable sales volume to the manufacturer’s Section 177 state applicable sales volume. In any given model year, the same applicable sales volume calculation method must be used to calculate proportional value.

**(4213)** “Range Extended Battery Electric Vehicle” or “BEVx” means a vehicle powered predominantly by a zero emission energy storage device, able to drive the vehicle for more than 75 all-electric miles, and also equipped with a backup APU, which does not operate until the energy storage device is fully depleted, and meeting requirements in subdivision 1962.2(d)(5)(G).

**(4314)** “Section 177 state” means a state that is administering the California ZEV requirements pursuant to section 177 of the federal Clean Air Act (42 U.S.C. § 7507).

~~(4415)~~ “Transitional zero emission vehicle” or “TZEV” means a vehicle that meet the all criteria of subdivision 1962.2(c)(2) and qualifies for an allowance in subdivision 1962.2(c)(3)(D) or (E).

~~(4516)~~ “Zero emission vehicle” or “ZEV” means a vehicle that produces zero exhaust emissions of any criteria pollutant (or precursor pollutant) or greenhouse gas under any possible operational modes or conditions.

~~(4617)~~ “Zero emission vehicle fuel” means a fuel that provides traction energy in on-road ZEVs. Examples of current technology ZEV fuels include electricity, hydrogen, and compressed air.

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(j) **Abbreviations.** The following abbreviations are used in this section 1962.2:

\* \* \* \* \*

~~“R<sub>red</sub>” means charge depletion actual range (urban Cycle).~~

\* \* \* \* \*

**Additional Staff Suggested Modifications (without modified regulatory language)**

Modified regulatory language will be developed by staff as described below, and the modified language will be made available to the public for a fifteen-day comment period prior to final adoption.

**Section 1962.2 – Optional Section 177 State Compliance Path**

In addition to Staff’s proposal to extend the travel provision through 2017 for battery electric vehicles (BEV) and until there is sufficient infrastructure available in the Section 177 States for hydrogen fuel cell vehicles (FCV), staff is proposing an optional Section 177 ZEV compliance path available for intermediate and large volume manufacturers. In order to be eligible for this optional compliance path, manufacturers must place additional BEVs in the 177 states equal to 0.75% of sales in MY 2016 and 1.5% of sales in MY 2017. These obligations cannot be met with “Traveled” credits, and are in addition to the existing requirements (i.e. 3% in each year) which can be met with “Traveled” credits. Existing carry-forward and carry-back provisions will remain available to manufacturers. In exchange for these pre-2018 ZEVs placed in the Section 177 ZEV States, manufacturers will have the following reductions in their allowed TZEV percentage and minimum ZEV requirement:

**Optional Compliance Path Section 177 State Allowed TZEV Credit Percentage**

	2015	2016	2017	2018
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New TZEV Credit % in S177 States	2.25%	2.40%	2.55%	2.25%
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**Optional Compliance Path Section 177 State Minimum ZEV Credit Percentage**

	2018	2019	2020
New min ZEV Credit % in S177 States	1.25%	3%	5.25%

In addition to the above credit percentage reductions, manufacturers on this optional compliance path will be allowed to “pool” their TZEV and ZEV credits within two regional pools: an East Region pool and a West Region pool. The East Region pool will be defined as Section 177 States east of the Mississippi River. The West Region pool will be defined as the Section 177 States located west of the Mississippi River. Currently, the East Region includes the following states: Connecticut, Maine, Maryland, Massachusetts, Rhode Island, New Jersey, New York, and Vermont. The West Region currently includes the following states: New Mexico and Oregon. Pooling for TZEV credits shall begin in 2015 model year through 2021 model year, and pooling for ZEV credits shall begin in 2016 model year through 2021 model year. Trading between the East and West pools is allowed at a 30% premium. For example, a manufacturer wanting to trade from their East to West pool would take 130 credits from their East pool, and move those credits to their West pool, where they would only be worth 100 credits in their West pool. Intermediate or Large volume manufacturers must submit written notification for choosing this path no later than September 1, 2014. Pooling will be assessed if it is working as intended and considered for model years beyond 2021 at later review of the ZEV regulation.

**Section 1962.2 – GHG-ZEV Over Compliance Provision**

Staff is proposing to add language to Section 1962.2 that clarifies subdivision (g)(6)(C) is only available if the Board accepts compliance with the Federal GHG fleet standard as compliance with the California GHG Fleet Standard.

**Section 1962.3 – Alternate Approval Process for vehicles with SAE J1772 AC equivalency**

Staff is proposing an alternative approval process in 1962.3 for vehicles with SAE J1772 AC “equivalency” when equipped with a manufacturer provided, safety-listed adapter. This is due to manufacturers being wary of incorporation of combination inlets until the industry sorts out and selects the “winning” DC fast charge connector standard.