

California Environmental Protection Agency  
AIR RESOURCES BOARD

Part 2

**CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR  
2009 THROUGH 2017 MODEL ZERO-EMISSION VEHICLES AND HYBRID  
ELECTRIC VEHICLES, IN THE PASSENGER CAR, LIGHT-DUTY TRUCK AND  
MEDIUM-DUTY VEHICLE CLASSES**

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Amended: December 2, 2009  
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Note: The proposed amendments to this document are shown in underline to indicate additions and strikeout to indicate deletions compared to the test procedures as adopted December 6, 2012. Existing intervening text that is not amended in this rulemaking is indicated by “\* \* \* \*”.

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## C. Zero-Emission Vehicle Standards.

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### 4. Qualification for ZEV Multipliers and Credits.

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#### 4.4 Credits for 2009 through 2017 Model Years ZEVs.

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(b) *Fast Refueling.* For purposes of subdivision C.4.4(a), a Model Year 2009 through 2017 ZEV, inclusive, shall be deemed a Type III, Type IV or Type V ZEV if it has the capability to accumulate at least 95 miles of UDDS range in 10 minutes or less, at least 190 miles of UDDS range in 15 minutes or less, or 285 miles of UDDS range in 15 minutes or less, respectively. The “fast refueling capability” requirement for a 2009 through 2017 model year Type III, IV, or V ZEV in subdivision C.4.4(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 or V ZEV has the capability to accumulate at least 190 or 285 miles, respectively, in 15 minutes or less. For ZEVs that utilize more than one ZEV fuel, such as plug-in fuel cell vehicles, the Executive Officer may choose to waive these subdivision 1962.1(d)(5)(B)C.4.4(b) fast refueling requirements and base the amount of credit earned on UDDS ZEV range, as specified in subdivision C.4.4(a).

For Model Years 2009 through 2014, inclusive, “capability to accumulate” means the ZEV’s refueling system has been demonstrated to the satisfaction of ARB’s Executive Officer as having the potential, with appropriate infrastructure or other equipment, to accumulate the miles required under this subdivision within the given time period for the claimed ZEV type. For Model Years 2015 through 2017, inclusive, “capability to accumulate” means the ZEV’s refueling system has been demonstrated to the satisfaction of ARB’s Executive Officer as actually accumulating the miles required under this subdivision within the given time period for the claimed ZEV type, based on actual fast refueling events. Examples of fast refueling events include any refueling of an electric vehicle that meets the time and mileage fueling criteria for a Type III, IV, or V ZEV, including the refueling of a hydrogen fuel cell vehicle or any swapping of the depleted battery pack in a battery electric vehicle with an equivalent or larger capacity, fully-charged battery pack. To receive fast refueling credits manufacturers must apply to ARB with the information and documentation as specified below.

(1). Issuance of Fast Refueling Credits for Model Year 2015, 2016, or 2017 Type III, IV, and V ZEVs.

(A) To obtain fast refueling credits, the ZEV manufacturer must apply to ARB's Executive Officer for such credits. No credits shall be granted without Executive Officer approval of the application. Each application shall be specific to Type III, IV, or V ZEV vehicles of a single Model Year. Each application shall contain the documentation specified in subdivision C.4.4(b)(2). No later than 15 days before submittal of the first application in a calendar year, the applicant shall provide written notice to the Executive Officer of its intent to conduct fast refueling for its Type III, IV, or V ZEVs in that calendar year.

(B) Fast refueling capability shall be assigned to the number of Type III, IV, and V ZEVs of a given model year that have been fueled by an actual fast refueling event during the year.

i. The total number of a manufacturer's Type III ZEVs assigned the fast refueling capability for a given model year, based on actual fast refueling events, shall not exceed the manufacturer's total number of Type III ZEVs sold in California for that model year that are capable of fast refueling (i.e., the sum of those Type III ZEVs that were fueled with an actual fast refueling event and those Type III ZEVs that are able to be fast refueled but were not actually fueled using any fast refueling).

ii. The provision in subdivision C.4.4(b)(1)(B)i. also applies to Type IV and V ZEVs in the same manner described for Type III ZEVs.

iii. Only the first 25 fast refueling events performed on any individual Type III, IV, or V ZEV shall count towards the total number of fast refueling events, respectively.

iv. The frequency at which fast refueling credits are issued shall be based on the frequency of records and documentation submitted to support a claim for fast refueling credits. For example, a manufacturer that submits records of fast refueling events on a monthly, quarterly, or yearly basis shall be issued fast refueling credits on the applicable monthly, quarterly, or yearly basis.

(2.) Documentation of fast refueling events

(A) For each specific model year ZEV type for which a manufacturer claims fast refueling credits, the manufacturer must submit documentation of the total number of fast refueling events used to refuel the Type III, IV or V ZEVs in that model year.

(B) To support a manufacturer's claimed number of fast refueling events, that manufacturer must provide documentation of each fast refueling event. For each claimed fast refueling event, the manufacturer shall document the date of the fast refueling event, street address of the fast refueling facility used, and the vehicle identification number of the vehicle that was fast refueled. Fast refueling credit applicants shall retain this documentation for a minimum of three years from the date it was created and provide the documentation to ARB staff upon request within 3 business days.

(3.) The fast refueling application and data submission requirements in this subdivision do not apply to manufacturers of fuel cell electric vehicles because such vehicles are already designed to be fast refueled at all times.

(c) *ZEV Credits for 2009 through 2017 Model-Year ZEVs.* A 2009 through 2017 model-year ZEV, including a Type 1.5x and Type IIx, other than a NEV or Type 0, earns 1 ZEV credit when it is produced and delivered for sale in California. A 2009 through 2017 model-year ZEV earns additional credits based on the earliest year in which the ZEV is placed in service in California (not earlier than the ZEV's model year). The vehicle must be delivered for sale and placed in service in a Section 177 state or in California in order to earn the total credit amount. The total credit amount will be earned in the state (i.e. California or a Section 177 state) in which the vehicle was delivered for sale. The following table identifies the total credits that a ZEV in each of the eight ZEV tiers will earn, including the credit not contingent on placement in service, if it is placed in service in the specified calendar year or by June 30 after the end of the specified calendar year. A vehicle is not eligible to receive credits if it is placed in service after December 31, five calendar years after the model year. For example, if a vehicle is produced in 2012, but does not get placed until January 1, 2018, the vehicle would no longer be eligible for ZEV credits.

<i>Total Credit Earned by ZEV Type and Model Year for Production and Delivery for Sale and for Placement</i>		
<i>Tier</i>	<i>Calendar Year in Which ZEV is Placed in Service</i>	
	2009-2011	2012 - 2017
NEV	0.30	0.30
Type 0	1	1
Type I	2	2
Type I.5	2.5	2.5
Type I.5x	n/a	2.5
Type II	3	3
Type IIx	n/a	3
Type III	4	4
Type IV	5	5*
Type V	7	2012-2014: 7 2015-2017: 9*

\* As specified in subdivision C.4.4(b)

\* \* \* \* \*

(e) *Counting Specified ZEVs Placed in a Section 177 State and in California.*

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(3) *Optional Section 177 State Compliance Path.* Large volume manufacturers and intermediate volume manufacturers that choose to elect the optional ~~s~~Section 177 state compliance path must notify the Executive Officer and each ~~s~~Section 177 state in writing no later than September 1, 2014.

(A) *Additional 2016 and 2017 Model Year ZEV Requirements.* Large volume manufacturers and intermediate volume manufacturers that elect the optional ~~s~~Section 177 state compliance path must generate additional 2012 through 2017 model year ZEV credits, including no more than 50% Type 1.5x and Type IIx vehicle credits and excluding all NEV<sub>1</sub> and Type 0 ZEV credits, and transportation system credits, in each

Section 177 states equal to fulfill the following percentages requirements of their sales volume determined under subdivision C.4.5(e)(3)(A)1.:

Model Years	Additional Section 177 State ZEV Requirements
2016	0.75%
2017	1.50%

Subdivision C.4.5(e)(2) shall not apply to any ZEV credits used to meet a manufacturer's additional 2016 and 2017 model year ZEV requirements under this subdivision C.4.5(e)(3)(A). ZEVs produced to meet a manufacturer's additional 2016 and 2017 model year ZEV requirements under this subdivision C.4.5(e)(3)(A) must be placed in service in the Section 177 states no later than June 30, 2018.

1. *Trading and Transferring ZEV Credits within the West Region Pool and East Region Pool.* Starting in model year 2016, ~~Manufacturers~~ may trade or transfer ~~specified 2012 through 2017~~ model year ZEV credits, used to meet the ~~same model year~~ requirements in subdivision C.4.5(e)(3)(A) and (C), within the West Region pool, and will incur no premium on their credit values. For example, for a manufacturer to make up a 2016 model year shortfall of 100 credits in State X, the manufacturer may transfer 100 (2012 and 2016 model year) ZEV credits, from State Y, within the West Region pool. Starting in model year 2016, ~~Manufacturers~~ may trade or transfer ~~specified 2012 through 2017~~ model year ZEV credits, used to meet the ~~same model year~~ requirements in subdivision C.4.5(e)(3)(A) and (C), within the East Region pool, and will incur no premium on their credit values. For example, for a manufacturer to make up a 2016 model year shortfall of 100 credits in State W, the manufacturer may transfer 100 (2012 through 2016 model year) ZEV credits from State Z, within the East Region pool.

2. *Trading and Transferring ZEV Credits between the West Region Pool and East Region Pool.* Starting in model year 2016, ~~Manufacturers~~ may trade or transfer ~~specific 2012 through 2017~~ model year ZEV credits used to meet the ~~same model year~~ requirements in subdivision C.4.5(e)(3)(A) and (C) between the West Region pool and the East Region pool; however, any credits traded or transferred will incur a premium of 30% of their value. For example, in order for a manufacturer to make up a 2016 model year shortfall of 100 credits in the West Region Pool, the manufacturer may transfer 130 (2012 through 2016 model year) ZEV credits from the East Region Pool. No credits may be traded or transferred to the East Region pool or West Region pool from a manufacturer's California ZEV bank, or from the East Region pool or West Region pool to a manufacturer's California ZEV bank.

(B) *Reduced TZEV Percentages.* Large volume manufacturers and intermediate volume manufacturers that elect the optional Section 177 state compliance path and that fully comply with the additional 2016 and 2017 model year ZEV requirements in this subdivision C.4.5(e)(3)(A) are allowed to meet TZEV percentages reduced from the allowed TZEV percentages in subdivision C.2.2(d)(2) and (3) in 2015 through 2017 model year in each Section 177 state as enumerated below:

Model Year	2015	2016	2017
Existing TZEV Percentage	3.00%	3.00%	3.00%
Section 177 State Adjustment for Optional Compliance Path for TZEVS	75.00%	80.00%	85.00%
New Section 177 State Optional Compliance Path TZEV Percentage	2.25%	2.40%	2.55%

Manufacturers may meet the reduced TZEV percentages above with credits from ZEVs or credits from TZEVS. These reduced TZEV percentages also reduce the total ZEV percent requirement, as illustrated in subdivision C.4.5(e)(3)(C).

1. *Trading and Transferring TZEV Credits within the West Region Pool and East Region Pool.* Starting in model year 2015, ~~Manufacturers may trade or transfer specified 2012 through 2017 model year~~ TZEV credits, as applicable, used to meet the ~~same model-year-subdivision C.4.5(e)(3)(C) percentages~~ within the West Region pool, and will incur no premium on their credit values. For example, for a manufacturer to make up a 2016 shortfall of 100 credits in State X, the manufacturer may transfer 100 (2012 through 2016 model year) TZEV credits from State Y, within the West Region pool. Starting in model year 2015, ~~Manufacturers may trade or transfer TZEV credits, as applicable, used to meet the same model-year-subdivision C.4.5(e)(3)(C) percentages~~ within the East Region pool, and will incur no premium on their credit values. For example, for a manufacturer to make up a 2016 model year shortfall of 100 credits in State W, the manufacturer may transfer 100 (2012 through 2016 model year) TZEV credits from State Z, within the East Region pool.

2. *Trading and Transferring TZEV Credit between the West Region Pool and East Region Pool.* Starting in model year 2015, ~~Manufacturers may trade or transfer specified 2012 through 2017 model year~~ TZEV credits, as applicable, used to meet subdivision C.4.5(e)(3)(C) ~~the same model-year percentages in subdivision C.4.5(e)(3)(C)~~ between the West Region pool and the East Region pool; however, any credits transferred will incur a premium of 30% of their value. For example, in order for a manufacturer to make up

a 2016 model year shortfall of 100 credits in the West Region Pool, the manufacturer may transfer 130 (2012 through 2016 model year) TZEV credits from the East Region Pool. No credits may be traded or transferred to the East Region pool or West Region pool from a manufacturer's California ZEV bank, or from the East Region pool or West Region pool to a manufacturer's California ZEV bank.

(C) *Total Requirement Percentages.* Requirements for the minimum ZEV floor, and allowed percentages for AT PZEVs and PZEVs in subdivision C.2 remain in effect for large and intermediate volume manufacturers choosing the optional Section 177 state compliance path in each Section 177 state. However, the optional Section 177 compliance path requires manufacturers to meet additional ZEV requirements and allows manufacturers to meet reduced TZEV percentages as described above in subdivision C.4.5(e)(3)(A) and (B). The table below enumerates the total annual percentage obligation in each Section 177 state for the 2015 through 2017 model years if the manufacturer elects the optional Section 177 state compliance path and produces the minimum number of credits required to meet its minimum ZEV floor and the maximum percentage allowed to be met with credits from TZEVs, AT PZEVs and PZEVs.

Large Volume Manufacturer Annual Percentage Obligations under the Section 177 State Optional Compliance Path

Years	Total ZEV Percent Requirement for Optional Compliance Path	Minimum ZEV Floor for Optional Compliance Path	TZEVs for Optional Compliance Path	AT PZEVs (no change)	PZEVs (no change)
2015	13.25%	3.00%	2.25%	2.00%	6.00%
2016	14.15%	3.75%	2.40%	2.00%	6.00%
2017	15.05%	4.50%	2.55%	2.00%	6.00%

Intermediate Volume Manufacturer Annual Percentage Obligations under the Section 177 State Optional Compliance Path

<u>Years</u>	<u>Total ZEV Percent Requirement for Optional Compliance Path</u>	<u>Additional ZEV Percentage</u>	<u>Percent Requirement that may be met with PZEVs</u>
<u>2015</u>	<u>11.25%</u>	<u>0%</u>	<u>11.25%</u>
<u>2016</u>	<u>12.15%</u>	<u>0.75%</u>	<u>11.40%</u>
<u>2017</u>	<u>13.05%</u>	<u>1.50%</u>	<u>11.55%</u>

~~d.(D)~~ *Reporting Requirements.* ~~On an annual basis~~ For 2015 to 2017 model year, by May 1st of the calendar year following the close of a model year, each



manufacturer that elects the optional Section 177 state compliance path shall submit, in writing, to the Executive Officer and each Section 177 state a report, including an itemized list, that demonstrates the manufacturer has met the requirements of this subdivision C.4.5(e)(3)(C) in each Section 177 state as well as in the East Region pool and in the West Region pool. The itemized list shall include the following:

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- iii. Make, model, ~~vehicle identification number~~, credit earned, and Section 177 state where delivery for sale of each TZEVS occurred and Section 177 state where delivery for sale and placement in service of each ZEV occurred to meet manufacturer's requirements under subdivision C.4.5(e)(3)(C)

(E) Right to Request Vehicle Identification Numbers. Upon request by the Executive Officer or a Section 177 state, each manufacturer that elects the optional Section 177 state compliance path under subdivision C.4.5(e)(3) shall provide the vehicle identification numbers in the report required by subdivision C.4.5(e)(3)(D)iii.

e.(F) Failure to Meet Optional Section 177 State Compliance Path Requirements. A manufacturer that elects the optional Section 177 state compliance path and does not meet the requirements in subdivision C.4.5(e)(3)(A) by June 30, 2018 in all Section 177 states within an applicable pool shall be treated as subject to the total ZEV percentage requirements in section C.2 for the 2015 through 2017~~future~~ model years in each Section 177 state and the pooling provisions in subdivision C.4.5(e)(3)(A) shall not apply. Any transfers of ZEV credits between Section 177 states will be null and void, and ZEV credits will return to the section 177 state in which the credits were earned~~prohibited~~. A manufacturer that elects the optional Section 177 state compliance path and does not meet the percentages in subdivision C.4.5(e)(3)(B) in a model year or make up their deficit within the specified time and with the specified credits allowed by subdivision C.7.7(a) in all Section 177 states within an applicable pool shall be treated as subject to the ZEV percentage requirements in section C.2 for the 2015 through 2017~~all future~~ model years in each Section 177 state and the pooling provisions in subdivision C.4.5(e)(3)(B) shall not apply. Any ~~future~~ transfers of TZEVS credits between section 177 states will be null and void if a manufacturer fails to comply, and TZEVS credits will return to the section 177 state in which the credits were earned~~prohibited~~. Penalties shall be calculated separately by each Section 177 state where a manufacturer fails to make up the ZEV deficits by the end of the 2018 model year.

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f.(G) The provisions in section C shall apply to a manufacturer electing the optional Section 177 state compliance path, except as specifically modified by this subdivision C.4.5(e)(3).

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