

## FINAL REGULATION ORDER

Set forth below are the proposed amendments to title 13 of the California Code of Regulations. Amendments proposed and subject to comment in this rulemaking are shown in underline to indicate additions and ~~strikeout~~ to indicate deletions.

Amendments to these regulations that were adopted by the Board on September 24, 2009 as part of the "Rulemaking to Consider Proposed Amendments to New Passenger Motor Vehicle Greenhouse Gas Emission Standards," but which have not yet been approved by California's Office of Administrative Law (OAL) are indicated in dotted underline to indicate additions and ~~italics double strikeout~~ to indicate deletions. That rulemaking was sent to OAL for approval on February 22, 2010. OAL has until April 6, 2010 to make a determination.

Subsections for which no changes are proposed in this rulemaking are indicated with [No change] or "\* \* \* \*".

**Amend the following Sections of Title 13, California Code of Regulations, to read:**

**§ 1961. Exhaust Emission Standards and Test Procedures - 2004 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles.**

*Introduction.* [No change.]

Sections (a) through (c). [No change.]

(d) *Test Procedures.* The certification requirements and test procedures for determining compliance with the emission standards in this section are set forth in the “California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles,” as amended ~~December 2, 2009~~ ~~February 22, 2010~~ March 29, 2010, and the “California Non-Methane Organic Gas Test Procedures,” as amended July 30, 2002, which are incorporated herein by reference. In the case of hybrid electric vehicles and on-board fuel-fired heaters, the certification requirements and test procedures for determining compliance with the emission standards in this section are set forth in the “California Exhaust Emission Standards and Test Procedures for 2005 through 2008 Model Zero-Emission Vehicles, and 2001 through 2008 Model Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes,” incorporated by reference in section 1962 and the “California Exhaust Emission Standards and Test Procedures for 2009 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 in section 1962.1.

(e) *Abbreviations.* [No change.]

Note: Authority cited: Sections 39500, 39600, 39601, 43013, 43018, 43101, 43104, ~~and~~ 43105, and 43106, Health and Safety Code. Reference: Sections 39002, 39003, 39667, 43000, 43009.5, 43013, 43018, 43100, 43101, 43101.5, 43102, 43104, 43105, 43106, 43204, and 43205, Health and Safety Code.

**§ 1961.1. Greenhouse Gas Exhaust Emission Standards and Test Procedures - 2009 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles.**

(a) *Greenhouse Gas Emission Requirements.* The greenhouse gas emission levels from new 2009 and subsequent model year passenger cars, light-duty trucks, and medium-duty passenger vehicles shall not exceed the following requirements. Light-duty trucks from 3751 lbs. LVW – 8500 lbs. GVW that are certified to the Option 1 LEV II NOx Standard in section 1961(a)(1) are exempt from these greenhouse gas emission requirements, however, passenger cars, light-duty trucks 0-3750 lbs. LVW, and medium-duty passenger vehicles are not eligible for this exemption.

(1) *Fleet Average Greenhouse Gas Requirements for Passenger Cars, Light-Duty Trucks, and Medium-Duty Passenger Vehicles.*

(A)(i) The fleet average greenhouse gas exhaust mass emission values from passenger cars, light-duty trucks, and medium-duty passenger vehicles that are produced and delivered for sale in California each model year by a large volume manufacturer shall not exceed:

<b>FLEET AVERAGE GREENHOUSE GAS EXHAUST MASS EMISSION REQUIREMENTS FOR PASSENGER CAR, LIGHT-DUTY TRUCK, AND MEDIUM- DUTY PASSENGER VEHICLE WEIGHT CLASSES<sup>1</sup></b> (4,000 mile Durability Vehicle Basis)		
<i>Model Year</i>	<i>Fleet Average Greenhouse Gas Emissions</i>  <i>(grams per mile CO<sub>2</sub>-equivalent)</i>	
	<i>All PCs; LDTs 0-3750 lbs. LVW</i>	<i>LDTs 3751 lbs. LVW - 8500 lbs. GVW; MDPVs</i>
2009	323	439
2010	301	420
2011	267	390
2012	233	361
2013	227	355
2014	222	350
2015	213	341
2016+	205	332

<sup>1</sup> Each manufacturer shall demonstrate compliance with these values in accordance with section 1961.1(a)(1)(B).

1. For each model year, a manufacturer must demonstrate compliance with the fleet average requirements in this section 1961.1(a)(1)(A) based on one of two options applicable throughout the model year, either:

Option 1: the total number of passenger cars, light-duty trucks, and medium-duty passenger vehicles that are certified to the California exhaust emission standards in this section 1961.1, and are produced and delivered for sale in California; or

Option 2: the total number of passenger cars, light-duty trucks, and medium-duty passenger vehicles that are certified to the California exhaust emission standards in this section 1961.1, and are produced and delivered for sale in California, the District of Columbia, and all states that have adopted California's greenhouse gas emission standards for that model year pursuant to Section 177 of the federal Clean Air Act (42 U.S.C. § 7507).

a. For the 2009 and 2010 model years, a manufacturer that selects compliance Option 2 must notify the Executive Officer of that selection, in writing, within 30 days of the effective date of the amendments to this section (a)(1)(A)1 or must comply with Option 1.

b. .... For the 2011 and later model years, a manufacturer that selects compliance Option 2 must notify the Executive Officer of that selection, in writing, prior to the start of the applicable model year or must comply with Option 1.

c. .... When a manufacturer is demonstrating compliance using Option 2 for a given model year, the term "in California" as used in subsections 1961.1(a)(1)(B)3, and 1961.1(b) means California, the District of Columbia, and all states that have adopted California's greenhouse gas emission standards for that model year pursuant to Section 177 of the federal Clean Air Act (42 U.S.C. § 7507).

d. .... A manufacturer that selects compliance Option 2 must provide to the Executive Officer separate values for the number of vehicles produced and delivered for sale in the District of Columbia and for each individual state within the average.

(A)(ii) For the 2012 through 2016 model years, a manufacturer may elect to demonstrate compliance with this section 1961.1 by demonstrating compliance with the National greenhouse gas program as follows:

1. A manufacturer that selects compliance with this option 1961.1(a)(1)(A)(ii) must notify the Executive Officer of that selection, in writing, prior to the start of the applicable model year or must comply with 1961.1(a)(1)(A)(i).

2. The manufacturer must submit to ARB a copy of the Model Year CAFE report that it submitted to EPA as required under 40 CFR §86.1865-12 (as proposed at 74 Fed.Reg. 49454, 49760 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed.Reg. [insert page] (April [insert date], 2010), for demonstrating compliance with the National greenhouse gas program and the EPA determination of compliance. These must be submitted within 30 days of receipt of the EPA determination of compliance, for each model year that a manufacturer selects compliance with this option 1961.1(a)(1)(A)(ii). and

3. If a manufacturer has outstanding greenhouse gas debits at the end of the 2011 model year, as calculated in accordance with 1961.1(b), the manufacturer must submit to the Executive Officer a plan for offsetting all outstanding greenhouse gas debits by using greenhouse gas credits earned under the National greenhouse gas program before applying those credits to offset any National greenhouse gas program debits. Upon approval of the plan by the Executive Officer, the manufacturer may demonstrate compliance with this section 1961.1 by demonstrating compliance with the National greenhouse gas program. Any California debits not offset by the end of the 2016 model year National greenhouse gas program reporting period are subject to penalties as provided in this Section 1961.1.

(B) *Calculation of Fleet Average Greenhouse Gas Value.*

1. *Basic Calculation.*

a. Option A: Each manufacturer shall calculate both a “city” grams per mile average CO<sub>2</sub>-equivalent value for each GHG vehicle test group and a “highway” grams per mile average CO<sub>2</sub>-equivalent value for each GHG vehicle test group, including vehicles certified in accordance with section 1960.5 and vehicles certified in accordance with section 1961(a)(14), using the following formula. Option B: For a manufacturer that elects to demonstrate compliance with the greenhouse gas requirements using CAFE data, “GHG vehicle test group” shall mean “subconfiguration” in this subsection 1961.1(a)(1)(B)1.a. Greenhouse Gas emissions used for the “city” CO<sub>2</sub>-equivalent value calculation shall be measured using the “FTP” test cycle (40 CFR, Part 86, Subpart B). Greenhouse Gas emissions used for the “highway” CO<sub>2</sub>-equivalent value calculation shall be based on emissions measured using the Highway Test Procedures.

$$\text{CO}_2\text{-Equivalent Value} = \text{CO}_2 + 296 \times \text{N}_2\text{O} + 23 \times \text{CH}_4 - \text{A/C Direct Emissions Allowance} - \text{A/C Indirect Emissions Allowance}$$

A manufacturer may use N<sub>2</sub>O = 0.006 grams per mile in lieu of measuring N<sub>2</sub>O exhaust emissions. A manufacturer that elects to use CAFE data to demonstrate compliance with the greenhouse gas requirements may substitute the term 1.9 CO<sub>2</sub>-equivalent grams per mile for the terms “296 x N<sub>2</sub>O + 23 x CH<sub>4</sub>” in this equation.

b. *A/C Direct Emissions Allowance.* A manufacturer may use the following A/C Direct Emission Allowances, upon approval of the Executive Officer, if that manufacturer demonstrates that the following requirements are met. Such demonstration shall include specifications of the components used and an engineering evaluation that verifies the estimated lifetime emissions from the components and the system. A manufacturer shall also provide confirmation that the number of fittings and joints has been minimized and components have been optimized to minimize leakage. No A/C Direct Emissions Allowance is permitted if the following requirements are not met.

Sections (a)(1)(B)1.b.i. through (a)(1)(B)1.b.iii. [No change.]

iv. .... A manufacturer that elects to use CAFE Program emissions data to demonstrate compliance with the greenhouse gas requirements shall calculate the A/C Direct Emissions Allowance for each Vehicle Configuration by calculating the A/C Direct Emissions Allowance for each air conditioning system used in that Vehicle Configuration and calculating a sales-weighted average for that Vehicle Configuration.

c. *A/C Indirect Emissions Allowance.* A manufacturer may use the following A/C Indirect Emissions Allowances, upon approval of the Executive Officer, if the manufacturer demonstrates using data or an engineering evaluation that the air conditioning system meets the following requirements. A manufacturer may use the following A/C Indirect Emissions Allowances for other technologies, upon approval of the Executive Officer, if that manufacturer demonstrates that the air conditioning system achieves equal or greater CO<sub>2</sub>-equivalent grams per mile emissions reductions.

Sections (a)(1)(B)1.c.i. through (a)(1)(B)1.c.iii. [No change.]

iv. .... A manufacturer that elects to use CAFE Program emissions data to demonstrate compliance with the greenhouse gas requirements shall calculate the A/C Indirect Emissions Allowance for each Vehicle Configuration by calculating the A/C Indirect Emissions Allowance for each air conditioning system used in that Vehicle Configuration and calculating a sales-weighted average for that Vehicle Configuration.

Sections (a)(1)(B)1.d. through (d). [No change.]

(e) *Definitions Specific to this Section.* The following definitions apply to this section 1961.1:

(1) "A/C Direct Emissions" means any refrigerant released from a motor vehicle's air conditioning system.

(2) "A/C Indirect Emissions" means any increase in motor vehicle exhaust CO<sub>2</sub> emissions that can be attributed to the operation of the air conditioning system.

(3) "GHG Vehicle Test Group" means vehicles that have an identical test group, vehicle make and model, transmission class and driveline, aspiration method (e.g., naturally aspirated, turbocharged), camshaft configuration, valvetrain configuration, and inertia weight class.

(4) "Greenhouse Gas" means the following gases: carbon dioxide, methane, nitrous oxide, and hydrofluorocarbons.

(5) "Grid-Connected Hybrid Electric Vehicle" means a hybrid electric vehicle that has the capacity for the battery to be recharged from an off-board source of electricity and has some all-electric range.

(6) “GWP” means the 100-year global warming potential specified in IPCC (Intergovernmental Panel on Climate Change) 2000: Emissions Scenarios. N. Nakicenovic et. al. editors, Special Report of Working Group III of the IPCC, Cambridge University Press, Cambridge UK, ISBN 0-521-80493-0.

(7) “National greenhouse gas program” means the national program that applies to new 2012 through 2016 model year passenger cars, light-duty trucks, and medium-duty passenger vehicles as proposed by the U.S. Environmental Protection Agency at 74 Fed.Reg. 49454 (September 28, 2009) and adopted by EPA on April 1, 2010, 75 Fed.Reg. [insert page], April [insert date], 2010, as incorporated in and amended by the “California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles.”

(87) “Normal Operation” of an air conditioning system means typical everyday use of the A/C system to cool a vehicle. “Normal Operation” does not include car accidents, dismantling of an air conditioning system, or any other non-typical events.

(98) “Optional GHG Test Vehicle Configuration” means any GHG vehicle configuration that is selected for testing by the manufacturer as allowed by section G.2.3 of the “California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles,” other than the worst-case configuration.

(109) “Renewable Energy Resource” means a facility that meets all of the criteria set forth in Public Resources Code section 25741(a), except that the facility is not required to be located in California or near the border of California.

(110) “Variable Displacement Compressor” means a compressor in which the mass flow rate of refrigerant is adjusted independently of compressor speed by the control system in response to cooling load demand.

(124) “Variable Speed Compressor” means a compressor in which the mass flow rate of refrigerant can be adjusted by control of the compressor input shaft speed, independent of vehicle engine speed. For example, a variable speed compressor can have electric drive, hydraulic drive, or mechanical drive through a variable speed transmission.

(132) “Worst-Case” means the vehicle configuration within each test group that is expected to have the highest CO<sub>2</sub>-equivalent value, as calculated in section 1961.1(a)(1)(B)1.

Sections (f) and (g). [No change.]

Note: Authority cited: Sections 39500, 39600, 39601, 43013, 43018, 43018.5, 43101, 43104 and 43105, Health and Safety Code. Reference: Sections 39002, 39003, 39667, 43000, 43009.5, 43013, 43018, 43018.5, 43100, 43101, 43101.5, 43102, 43104, 43105, 43106, 43204, 43205, and 43211, Health and Safety Code.