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# Air Resources Board

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Arnold Schwarzenegger  
Governor

August 29, 2007

Mail-Out MSO #2007-03

TO: ALL MANUFACTURERS OF

- PASSENGER CARS
- LIGHT-DUTY TRUCKS
- MEDIUM-DUTY VEHICLES AND ENGINES USED IN SUCH VEHICLES
- HEAVY-DUTY VEHICLES AND ENGINES USED IN SUCH VEHICLES
- ON-ROAD MOTORCYCLES
- OFF-HIGHWAY RECREATIONAL VEHICLES
- OFF-ROAD SMALL SPARK-IGNITED ENGINES
- OFF-ROAD LARGE SPARK-IGNITED ENGINES
- OFF-ROAD SPARK-IGNITED MARINE ENGINES
- OFF-ROAD COMPRESSION-IGNITION ENGINES

ALL OTHER INTERESTED PARTIES

SUBJECT: NEW REQUIREMENT TO REPORT CARBON DIOXIDE EMISSIONS FROM 2008 AND SUBSEQUENT MODEL YEAR CALIFORNIA CERTIFIED VEHICLES AND ENGINES

The California Global Warming Solutions Act of 2006 requires the Air Resources Board (ARB) to determine the Statewide 1990 greenhouse gas (GHG) emissions level as a statewide aggregate emissions limit to be achieved by 2020. Under separate statutory authority, on January 1, 2007, ARB received responsibility for maintaining the Statewide GHG emissions inventory from the California Energy Commission (CEC). In response, ARB has undertaken an extensive inventory documentation and refinement exercise to develop a draft updated Statewide GHG emissions inventory and corresponding documentation. To facilitate improvements to the GHG emissions inventory, staff needs CO<sub>2</sub> emissions data representative of the mobile source engines and vehicles operating in the state. This mail-out is to facilitate collection of that data.

Currently, manufacturers of engines and vehicles subject to ARB emission control regulations measure CO<sub>2</sub> as part of the certification emissions testing. Parallel sections of the regulations and test procedures for the different off-road and on-road engines and

*The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: <http://www.arb.ca.gov>.*

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vehicles require that CO<sub>2</sub> emissions be collected and manufacturers maintain such records. In addition to ARB's general authority to request emissions data (17 CCR §91100), there are similar parallel sections in the respective regulations and test procedures that require manufacturers to provide test results upon request of the Executive Officer or designee. For example, for light and medium duty passenger vehicles the requirements to test for, maintain records of, and provide CO<sub>2</sub> test data to ARB upon request, may be found in 40 Code of Federal Regulations (CFR) Part 86.140-94, 86.142-90, 86.127(a)(1), 86.1843-01(g), and 86.1844-01(d)(7), all as incorporated by reference in California's test procedures. Similar language for small off-road engines may be found in part at 40 CFR 90.121. Until now, ARB has not required manufacturers to report CO<sub>2</sub> data as part of the normal certification process.

The purpose of this mail-out is to inform all off-road and on-road engine and vehicle manufacturers of the new requirement to report CO<sub>2</sub> emissions measured during the certification emissions tests. This is a reporting requirement applicable to all 2008 and subsequent model year engines/vehicles and does not require any additional emissions tests. Certifying engine/vehicle manufacturers must now include the measured carbon dioxide emissions in their certification applications.

Since this new requirement impacts all off-road and on-road engine/vehicle categories, the ARB is issuing this mail-out to provide guidance to all manufacturers on how to report CO<sub>2</sub> emissions. Typically, CO<sub>2</sub> emissions have been measured along with criteria pollutant emissions by the testing facilities and used in the emissions calculations. However, until now, the certification application did not require the CO<sub>2</sub> emissions to be reported to ARB. Table 1 provides information on how and where to report the CO<sub>2</sub> emissions in the certification application. Given the large number of categories and engine/vehicle manufacturers, all certifying parties must strictly follow the format provided in Table 1. Failure to report the CO<sub>2</sub> emissions using the referenced units or in the wrong database field may delay the processing of the certification application. The CO<sub>2</sub> data submitted must be labeled by the test date or test number so that it can be associated with other emissions data shown in the certification application.

Manufacturers who have already received Executive Orders for the 2008 model year are requested to update their certification applications, within 45 days from the date of this mail-out, in the manner described in Table 1 to report CO<sub>2</sub> emissions for these 2008 model year engine families and test groups already certified.

If you have general questions or issues regarding this mail-out, please contact Ms. Jackie Lourenco, Chief, New Vehicle/Engine Programs Branch, at (626) 450-6152, [jlourenc@arb.ca.gov](mailto:jlourenc@arb.ca.gov). For technical and certification questions, please contact Mr. Kumar Muthukumar, Manager, Off-Road Certification/Audit Section at (626) 575-7040 or [cmuthuku@arb.ca.gov](mailto:cmuthuku@arb.ca.gov), or Mr. Duc Nguyen, Manager, On-Road Certification/Audit Section at (626) 575-6844 or [dnguyen@arb.ca.gov](mailto:dnguyen@arb.ca.gov).

Sincerely,

/s/

Annette Hebert, Chief  
Mobile Source Operations Division

Enclosure

**Table 1. Where/how the CO<sub>2</sub> emissions must be reported**

| <b>Engine/Vehicle Category</b>   | <b>Reporting Units</b> | <b>Field (in certification application) where data should be reported</b>  |
|--|------------------------|--|
| Heavy-Duty Vehicles and Engines used in such vehicles  | g/bhp-hr               | FileMaker Pro:<br>-Test Information Form, Official Test Results: fill in the CO <sub>2</sub> fields.<br>-Supplemental Test Information Form, Supplemental Euro III Modal Tests: add a row for CO <sub>2</sub> and fill in the modal test results.<br>- Supplemental Test Information Form, Weighted Composite Results: add a cell for CO <sub>2</sub> and fill in the ESC weighted modal test result |
| Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles tested under chassis test procedures | g/mi                   | -For manufacturers (MFRs) voluntarily using ARB's Certification Review Sheet, add the CO <sub>2</sub> numbers for HWFE, US06, and SC03 tests on the form.<br>-For MFRs not using ARB's Certification Review Sheet, report the CO <sub>2</sub> numbers for FTP, HWFE, US06, and SC03 tests on a separate sheet in a format of your choice, e.g., Word tables, Excels                                  |
| Medium-Duty Vehicles tested under engine test procedures and engines used in such vehicles       | g/bhp-hr               | FileMaker Pro:<br>-Test Information Form, Official Test Results: fill in the CO <sub>2</sub> fields.<br>-Supplemental Test Information Form, Supplemental Euro III Modal Tests: add a row for CO <sub>2</sub> and fill in the modal test results.<br>- Supplemental Test Information Form, Weighted Composite Results: add a cell for CO <sub>2</sub> and fill in the ESC weighted modal test result |
| Off-Road Compression-Ignition Engines  | g/kW-hr                | FileMaker Pro<br>- Test Information Form<br>- Official Test Results (CO <sub>2</sub> field)  |
| Off-Road Large Spark-Ignited Engines   | g/kW-hr                | Microsoft Access<br>- Emission Test Result Section<br>- Remarks  |
| Off-Highway recreational vehicles  | g/km, or g/kW-hr       | Fill in the CO <sub>2</sub> numbers in section 5 of the CSI (g/km for chassis testing; g/kW-hr for engine testing)   |
| Off-Road Small Spark-Ignited Engines   | g/kW-hr                | FileMaker Pro<br>- Comments Form   |
| Off-Road Spark-Ignited Marine Engines  | g/kW-hr                | Microsoft Access<br>- Emission Test Result Section<br>- Remarks  |
| On-Road motorcycles  | g/km                   | Fill in the CO <sub>2</sub> numbers in section 5 of the CSI  |

\* Include test number and test date along with CO<sub>2</sub> emissions