



Air Resources Board



Matthew Rodriguez
Secretary for
Environmental Protection

Mary D. Nichols, Chairman
9480 Telstar Avenue, Suite 4
El Monte, California 91731 • www.arb.ca.gov

Edmund G. Brown Jr.
Governor

October 14, 2013

Reference No. NSC-2013-262

Mr. Gerry Coons
VP Industry Affairs
Outdoor Power Equipment Institute
341 South Patrick Street
Alexandria, Virginia 22314

Dear Mr. Coons:

This is in regards to greenhouse gas (GHG) emissions calculation factors for 2014 and later model-year small spark-ignition engines. Earlier, in a letter dated March 8, 2013 to the Outdoor Power Equipment Institute (OPEI), California Air Resources Board (ARB) had approved OPEI's request to use calculation factors for methane (CH₄) and nitrous oxide (N₂O) emissions for 2013 model-year engines less than or equal to 80 cc. In support of this request, OPEI provided limited GHG emissions test data from 7 engines. Additionally, ARB had requested OPEI to provide GHG emissions data from 17 additional engines in order to develop robust calculation factors for CH₄ and N₂O emissions for 2014 and later model-year engines less than or equal to 80 cc.

In response to ARB's request, OPEI recently submitted the GHG test data from 17 additional engines. This additional data from a number of different engine manufacturers was very useful in characterizing the CH₄ and N₂O emissions from engines less than or equal to 80 cc. Staff reviewed the submitted data and concluded that the previously approved calculation factors for 2013 model-year engines less than or equal to 80 cc were appropriate for estimating CH₄ and N₂O emissions for such engines.

As a result, for the 2014 and later model-year engine families, staff hereby approves the following methodology for small spark-ignition engines less than or equal to 80 cc, as follows:

- (a) Calculate CH₄ emissions value by applying a calculation factor of 2 percent for 2-stroke engines and 5 percent for 4-stroke engines to total hydrocarbons emissions measurement.
- (b) For 2-stroke engines equipped with aftertreatment technology, specify 0.000 g/kW-hr for N₂O emissions value.

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>.

California Environmental Protection Agency

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Please note that as ARB obtains more GHG emissions test data going forward, ARB may use the new data to update the CH₄ and N₂O calculation factors as appropriate for subsequent model years.

If you have any questions, please contact Mr. Kumar Muthukumar, Manager, Mobile Source Operations Division, at (626) 575-7040 or cmuthuku@arb.ca.gov.

Sincerely,



Jackie Lourenco

Branch Chief

Mobile Source Operations Division

cc: Kumar Muthukumar, Manager
Off-Road Spark-Ignited Engine Certification Section
Mobile Source Operations Division