



**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Parts 85, 86, 1036, 1037, 1039, 1042, 1048, 1054, 1065, 1066, 1068**

**DEPARTMENT OF TRANSPORTATION**

**National Highway Traffic Safety Administration**

**49 CFR Parts 523 and 535**

**[EPA-HQ-OAR-2012-0102; NHTSA-2012-0152; FRL 9772-3]**

**RIN 2060-AR48; 2127-AL31**

**Heavy-Duty Engine and Vehicle, and Nonroad Technical Amendments**

**AGENCIES:** Environmental Protection Agency (EPA) and National Highway Traffic Safety Administration (NHTSA), Department of Transportation.

**ACTION:** Direct final rule.

**SUMMARY:** EPA and NHTSA, on behalf of the Department of Transportation, are each adopting corrections to provisions in our respective Medium- and Heavy-Duty Greenhouse Gas Emissions and Fuel Efficiency final rule issued on September 15, 2011. These amendments eliminate duplicative reporting requirements, reduce inadvertent minor differences between the EPA and NHTSA programs regarding such matters as voluntary early model year compliance, better align testing procedures to market realities, and reduce unnecessary testing burdens. This action also separately amends several regulations exclusive to EPA by: adjusting the provisions of the replacement engine exemption, expanding EPA's discretion to allow greater flexibility under the Transition Program for Equipment Manufacturers related to the Tier 4 standards for nonroad diesel engines, specifying multiple versions of the applicable SAE standard for demonstrating that fuel lines for nonroad spark-ignition engines above 19 kilowatts meet permeation

requirements, and allowing for the use of the ethanol-based test fuel specified by the California Air Resources Board for nonroad spark-ignition engines at or below 19 kilowatts. Some of the individual EPA-only provisions of this action may have minor impacts on the costs and emission reductions of the underlying regulatory programs amended in this action, though in most cases these are simple technical amendments. For those provisions that may have a minor impact on the costs or benefits of the amended regulatory program, any potential impacts would be small and we have not attempted to quantify the potential changes.

**DATES:** These rules are effective on **[insert date 60 days after publication in the FEDERAL REGISTER]** without further notice, unless EPA or NHTSA receives adverse comment. If we receive relevant adverse comment on distinct elements of this rule by **[insert date 30 days after publication in the FEDERAL REGISTER]**, we will publish a timely withdrawal in the Federal Register indicating which provisions we are withdrawing. The provisions that are not withdrawn will become effective on **[insert date 60 days after publication in the FEDERAL REGISTER]**, notwithstanding adverse comment on any other provision.

The incorporation by reference of certain publications listed in this regulation is approved by the Director of the **Federal Register** as of *[Insert date 60 days after publication in the Federal Register]*.

**ADDRESSES:** Submit your comments, identified by Docket ID No. NHTSA-2012-0152 and/or EPA-HQ-OAR-2012-0102, by one of the following methods:

- [www.regulations.gov](http://www.regulations.gov): Follow the on-line instructions for submitting comments.
- Email: [a-and-r-docket@epa.gov](mailto:a-and-r-docket@epa.gov)

- Fax: **NHTSA:** (202) 493-2251; **EPA:** (202) 566-9744

- Mail:

**NHTSA:** Docket Management Facility, M-30, U.S. Department of Transportation, West Building, Ground Floor, Rm. W12-140, 1200 New Jersey Avenue, SE, Washington, DC 20590.

**EPA:** Air and Radiation Docket and Information Center, Environmental Protection Agency, Air Docket, Mail-code 28221T, 1200 Pennsylvania Ave., NW, Washington, DC 20460.

1. Hand Delivery:

**NHTSA:** West Building, Ground Floor, Rm. W12-140, 1200 New Jersey Avenue, SE, Washington, DC 20590, between 9 a.m. and 5 p.m. Eastern Time, Monday through Friday, except Federal Holidays.

**EPA:** EPA Docket Center (EPA/DC), EPA West, Room 3334, 1301 Constitution Ave., NW, Washington, DC, Attention Docket ID No. EPA-HQ- OAR-2012-0102. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

*Instructions:* Direct your comments to Docket ID No. NHTSA-2012-0152 and/or EPA-HQ-OAR-2012-0102. See the **SUPPLEMENTARY INFORMATION** section on "Public Participation" for additional instructions on submitting written comments.

*Docket:* All documents in the docket are listed in the [www.regulations.gov](http://www.regulations.gov) index.

Although listed in the index, some information is not publicly available, e.g., information claimed as Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material,

will be publicly available only in hard copy. Publicly available docket materials are available either electronically in [www.regulations.gov](http://www.regulations.gov) or in hard copy at the following locations:

**NHTSA:** Docket Management Facility, M-30, U.S. Department of Transportation, West Building, Ground Floor, Rm. W12-140, 1200 New Jersey Avenue, SE, Washington, DC 20590. The Docket Management Facility is open between 9 a.m. and 5 p.m. Eastern Time, Monday through Friday, except Federal holidays.

**EPA:** EPA Docket Center, EPA/DC, EPA West, Room 3334, 1301 Constitution Ave., NW, Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the Air Docket is (202) 566-1742.

**FOR FURTHER INFORMATION CONTACT:** Lily Smith, Office of Chief Counsel, National Highway Traffic Safety Administration, 1200 New Jersey Avenue, SE, Washington, DC 20590; telephone: (202) 366-2992. Angela Cullen, Environmental Protection Agency, Office of Transportation and Air Quality, Assessment and Standards Division, 2000 Traverwood Drive, Ann Arbor, Michigan 48105; telephone number: 734-214-4419; email address: [cullen.angela@epa.gov](mailto:cullen.angela@epa.gov).

#### **SUPPLEMENTARY INFORMATION**

##### **A. Why are EPA and NHTSA publishing a direct final rule?**

The agencies have found that prior notice and comment is unnecessary for this action because it consists of minor amendments made for the following types of reasons:

to eliminate duplicative reporting requirements, reduce inadvertent minor differences between the EPA and NHTSA programs regarding such matters as voluntary early model year compliance, better align testing procedures to market realities, reduce unnecessary testing burdens, and correct clear technical errors. As these amendments are not expected to be controversial or to result in adverse comment, the agencies believe that this action falls under the “good cause” exception to the Administrative Procedure Act requirement for prior notice and comment.<sup>1</sup>

If no adverse comments are received within thirty days of publication, this rule will become effective as stated in the **DATES** section. In that case, approximately 30 days before the effective date, the agencies will publish a document in the **Federal Register** stating that no adverse comments were received and confirming that this rule will become effective as scheduled. The agencies would not consider frivolous or irrelevant comments to be adverse. The agencies would also not consider a comment recommending additional actions or changes to be adverse, unless the comment also states why the direct final rule would be ineffective without the additional action or change.

If adverse comments are received to any part of this rule, that part will be withdrawn by publishing a timely notice in the Federal Register indicating which provisions are being withdrawn. The provisions that are not withdrawn will become

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<sup>1</sup> See 5 U.S.C. 553(b). The “good cause” exception provides that the requirement for prior notice and comment on a proposed action does not apply “when the agency for good cause finds (and incorporates the finding and a brief statement of reasons therefore in the rules issued) that notice and public procedure thereon are impracticable, unnecessary, or contrary to the public interest.”

effective on the date set out above, notwithstanding adverse comment on any other provision.

If either or both agencies receive adverse comment to this rule, they will rely upon the agency-specific processes as follows, after the provision is withdrawn. If an adverse comment applies to a NHTSA provision of this rule, NHTSA will issue a notice of proposed rulemaking (NPRM) and provide another opportunity to comment. If EPA receives an adverse comment or a request for public hearing on a distinct EPA provision of this rulemaking, the related NPRM<sup>2</sup> published in the “Proposed Rules” section of today’s Federal Register will serve as the proposed rule to adopt the EPA provisions. If a public hearing is held on any provision that affects both agencies’ regulations, both agencies will participate. EPA does not plan to institute a second comment period on this action. Any parties interested in commenting on EPA technical amendments must do so at this time. EPA would address all public comments in a subsequent final rule.

We request that commenters identify in their comments any portions of the action with which they agree and support as written, in addition to any comments regarding provisions with which they disagree. In this way, the agencies will be able to adopt those elements of this action that are fully supported and most needed today while properly considering and addressing any adverse comments through a “notice and comment”

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<sup>2</sup> This document contains EPA revisions for heavy-duty engines and vehicles and the EPA provisions for replacement engines.

rulemaking. For further information about commenting on this rule, see the ADDRESSES section of this document.

**B. Does This Action Apply to Me?**

This action affects companies that manufacture, sell, or import into the United States new heavy-duty engines and new Class 2b through 8 vehicles, including combination tractors, school and transit buses, vocational vehicles such as utility service trucks, as well as  $\frac{3}{4}$ -ton and 1-ton pickup trucks and vans. The heavy-duty category incorporates all motor vehicles with a gross vehicle weight rating of 8,500 pounds or greater, and the engines that power them, except for medium-duty passenger vehicles already covered by the greenhouse gas emissions standards and corporate average fuel economy standards issued for light-duty model year 2012-2016 vehicles (75 FR at 25324, May 7, 2010).

This action also affects nonroad engine manufacturers.

Regulated categories and entities include the following:

Category	NAICS Code <sup>a</sup>	Examples of Potentially Affected Entities
Industry	336111	Motor Vehicle Manufacturers, Engine and Truck Manufacturers
	336112	
	333618	
	336120	
Industry	541514	Commercial Importers of Vehicles and Vehicle Components
	811112	
	811198	
Industry	336111	Alternative Fuel Vehicle Converters
	336112	
	422720	
	454312	
	541514	
	541690	
	811198	
	336510	
Industry	811310	Engine Repair, Remanufacture, and Maintenance

Note:

<sup>a</sup> North American Industry Classification System (NAICS)

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely covered by these rules. This table lists the types of entities that the agencies are aware may be regulated by this action. Other types of entities not listed in the table could also be regulated. To determine whether your activities are regulated by this action, you should carefully examine the applicability criteria in the referenced regulations. You may direct questions regarding the applicability of this action to the persons listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

### **C. What Should I Consider as I Prepare My Comments?**

Comments that are submitted for consideration by one agency should be identified as such, and comments that are submitted for consideration by both agencies should be identified as such. Absent such identification, each agency will exercise its

best judgment to determine whether a comment is submitted on its respective part of these rules.

Further instructions for submitting comments to either the EPA or NHTSA docket are described below.

**NHTSA:** Your comments must be written and in English. To ensure that your comments are correctly filed in the Docket, please include the Docket ID No. NHTSA-2012-0152 in your comments. By regulation, your comments must not be more than 15 pages long.<sup>3</sup> NHTSA established this limit to encourage you to write your primary comments in a concise fashion. However, you may attach necessary additional documents to your comments. There is no limit on the length of the attachments. If you are submitting comments electronically as a PDF (Adobe) file, we ask that the documents submitted be scanned using the Optical Character Recognition (OCR) process, thus allowing the agencies to search and copy certain portions of your submissions.<sup>4</sup> Please note that pursuant to the Data Quality Act, in order for the substantive data to be relied upon and used by the agencies, it must meet the information quality standards set forth in the Office of Management and Budget (OMB) and Department of Transportation (DOT) Data Quality Act guidelines. Accordingly, we encourage you to consult the guidelines in preparing your comments. OMB's guidelines may be accessed at <http://www.whitehouse.gov/omb/fedreg/reproducible.html>. DOT's guidelines may be accessed at <http://regs.dot.gov>.

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<sup>3</sup> See 49 CFR § 553.21

<sup>4</sup> Optical character recognition (OCR) is the process of converting an image of text, such as a scanned paper document or electronic fax file, into computer-editable text.

**EPA:** Direct your comments to Docket ID No. **EPA-HQ-OAR-2012-0102**. EPA's policy is that all comments received will be included in the public docket without change and may be made available online at [www.regulations.gov](http://www.regulations.gov), including any personal information provided, unless the comment includes information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through [www.regulations.gov](http://www.regulations.gov) or e-mail. The [www.regulations.gov](http://www.regulations.gov) website is an "anonymous access" system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an e-mail comment directly to EPA without going through [www.regulations.gov](http://www.regulations.gov) your e-mail address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses. For additional information about EPA's public docket visit the EPA Docket Center homepage at <http://www.epa.gov/epahome/dockets.htm>.

### **(1) Tips for Preparing Your Comments**

When submitting comments, remember to:

- Identify the rulemaking by docket number and other identifying information (subject heading, Federal Register date and page number).

- Follow directions - The agencies may ask you to respond to specific questions or organize comments by referencing a Code of Federal Regulations (CFR) part or section number.
- Explain why you agree or disagree, suggest alternatives, and substitute language for your requested changes.
- Describe any assumptions and provide any technical information and/or data that you used.
- If you estimate potential costs or burdens, explain how you arrived at your estimate in sufficient detail to allow for it to be reproduced.
- Provide specific examples to illustrate your concerns, and suggest alternatives.
- Explain your views as clearly as possible, avoiding the use of profanity or personal threats.
- Make sure to submit your comments by the comment period deadline identified in the **DATES** section above.

## **(2) How Can I Be Sure That My Comments Were Received?**

**NHTSA:** If you submit your comments by mail and wish Docket Management to notify you upon its receipt of your comments, enclose a self-addressed, stamped postcard in the envelope containing your comments. Upon receiving your comments, Docket Management will return the postcard by mail.

### **(3) How Do I Submit Confidential Business Information?**

Any confidential business information (CBI) submitted to one of the agencies will also be available to the other agency.<sup>5</sup> However, as with all public comments, any CBI only needs to be submitted to either one of the agencies' dockets and it will be available to the other. Following are specific instructions for submitting CBI to either agency.

**NHTSA:** If you wish to submit any information under a claim of confidentiality, you should submit three copies of your complete submission, including the information you claim to be CBI, to the Chief Counsel, NHTSA, at the address given above under **FOR FURTHER INFORMATION CONTACT**, according the process outlined in 49 CFR part 512. When you send a comment containing CBI, you should include a cover letter setting forth the information specified in our CBI regulation. In addition, you should submit a copy from which you have deleted the claimed CBI to the Docket by one of the methods set forth above.

**EPA:** Do not submit CBI to EPA through [www.regulations.gov](http://www.regulations.gov) or e-mail. Clearly mark the part or all of the information that you claim to be CBI. For CBI in a disk or CD ROM that you mail to EPA, mark the outside of the disk or CD ROM as CBI and then identify electronically within the disk or CD ROM the specific information that is claimed as CBI. In addition to one complete version of the comment that includes information claimed as CBI, a copy of the comment that does not contain the information claimed as

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<sup>5</sup> This statement constitutes notice to commenters pursuant to 40 CFR 2.209(c) that EPA will share confidential business information received with NHTSA unless commenters expressly specify that they wish to submit their CBI only to EPA and not to both agencies.

CBI must be submitted for inclusion in the public docket. Information so marked will not be disclosed except in accordance with procedures set forth in 40 CFR part 2.

**(4) Will the Agencies Consider Late Comments?**

NHTSA and EPA will consider all comments received before the close of business on the comment closing date indicated above under **DATES**. To the extent practicable, we will also consider comments received after that date. If interested persons believe that any new information the agency places in the docket affects their comments, they may submit comments after the closing date concerning how the agency should consider that information for the final rules. However, the agencies' ability to consider any such late comments in this rulemaking will be limited due to the time frame for issuing the final rules.

If a comment is received too late for us to practicably consider in developing the final rules, we will consider that comment as an informal suggestion for future rulemaking action.

**(5) How Can I Read the Comments Submitted by Other People?**

You may read the materials placed in the dockets for this document (*e.g.*, the comments submitted in response to this document by other interested persons) at any time by going to <http://www.regulations.gov>. Follow the online instructions for accessing the dockets. You may also read the materials at the NHTSA Docket Management Facility or the EPA Docket Center by going to the street addresses given above under **ADDRESSES**.

## **I. Technical Amendments to the Heavy-Duty Engine and Vehicle Greenhouse Gas and Fuel Efficiency Standards Rules**

EPA and NHTSA developed the first-ever program to reduce greenhouse gas (GHG) emissions and fuel consumption in the heavy-duty (HD) highway vehicle sector. The rulemaking was developed as a single, national program with both EPA and NHTSA promulgating complementary standards that allow manufacturers to build one set of vehicles to comply with both agencies' regulations. This broad heavy-duty sector – ranging from large pickups to sleeper-cab tractors – together represent the second largest contributor to oil consumption and GHG emissions from the mobile source sector, after light-duty passenger cars and trucks. The final rule was published in the Federal Register on September 15, 2011 (76 FR 57106).

### **A. Background of the HD GHG and Fuel Efficiency Standards and Amendments**

EPA's GHG standards and NHTSA's fuel consumption standards apply to manufacturers of the following types of heavy-duty vehicles and their engines:

- Heavy-duty Pickup Trucks and Vans
- Combination Tractors
- Vocational Vehicles

The rules include separate standards for the engines that power combination tractors and vocational vehicles. Certain parts of the program are exclusive to EPA's GHG standards. These include EPA's final hydrofluorocarbon standards to control leakage from air conditioning systems in combination tractors and in pickup trucks and vans. Also exclusive to the EPA rules are standards for nitrous oxide (N<sub>2</sub>O) and methane

(CH<sub>4</sub>) emissions standards that apply to all heavy-duty engines and to pickup trucks and vans.

EPA's final greenhouse gas emission standards for heavy-duty vehicles under the Clean Air Act will begin with model year 2014. NHTSA's final fuel consumption standards under the Energy Independence and Security Act of 2007 will be voluntary in model years 2014 and 2015, becoming mandatory with model year 2016 for most regulatory categories. Both agencies allow manufacturers to comply early in model year 2013 and promote early compliance by providing incentives to do so.

In the final rulemaking, EPA established all-new regulations in 40 CFR parts 1036, 1037, and 1066. EPA also included changes to existing regulations in 40 CFR parts 85, 86, 1039, 1065, and 1068. Similarly, NHTSA modified its existing regulations in 49 CFR parts 523 and 534, and established an all-new regulation in 49 CFR part 535.

After publication of the heavy-duty rule, EPA and NHTSA began an extensive outreach effort to aid in the rule's implementation. EPA and NHTSA held public workshops on November 3, 2011 and August 10, 2012. In the course of these efforts, the agencies received a series of comments on specific aspects of the rules and prepared question and answer responses.<sup>6</sup> In some cases, it became clear that minor changes to the rules would better clarify the rule's intent, or amend the rule to make it more effective. The amendments adopted in this rule are largely based on these implementation discussions.

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<sup>6</sup> See U.S. EPA website at <http://www.epa.gov/otaq/climate/regs-heavy-duty.htm>.

The revisions related to the heavy-duty GHG emissions and fuel efficiency regulations in this direct final rule generally affect the joint heavy-duty program. Therefore, the agencies are issuing this joint rule to maintain a single, harmonized program. However, some of these technical amendments are unique to the rules of one or the other agency. Thus, this section is further divided into three subsections. First is the set of amendments that directly affect both EPA's and NHTSA's regulations, which are discussed in Section I.B below. Next, the technical amendments exclusive to NHTSA's regulations in 49 CFR parts 523 and 535 are discussed in Section I.C. Finally, EPA's unique amendments in 40 CFR parts 86, 1036, 1037, 1065, and 1066, are discussed in Section I.D.

#### **B. Joint Heavy-Duty GHG and Fuel Efficiency Technical Amendments**

The following amendments correct minor, technical inconsistencies and add clarifications in the current regulatory text of both agencies. If adverse comment is received by either agency relative to any aspect of the joint technical amendments that directly affect both EPA's and NHTSA's regulations, then both agencies will withdraw that joint amendment. A comparison of the original and amended regulatory text is provided in a memorandum to the dockets for this rulemaking.<sup>7</sup>

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<sup>7</sup> Hicks, M. and A. Cullen. Memorandum to Dockets EPA-HQ-OAR-2012-0102 and NHTSA-2012-0152. Heavy-Duty Engine and Vehicle Greenhouse Gas Emissions and Fuel Consumption Regulatory Changes. May 2013.

## **(1) Hybrid Testing**

40 CFR 1036.525, 40 CFR 1036.615, and 49 CFR 535.7(e)(1)(ii) specify requirements for testing hybrid engines and engines with Rankine cycle waste heat recovery. The regulatory text includes references for testing “post-transmission” and “pre-transmission” hybrid systems in these sections. In a pre-transmission hybrid system, the energy from both the engine and motor is input into the drive shaft prior to the transmission. In a post-transmission hybrid system, the engine energy is input into the drive shaft prior to the transmission, but the motor energy is input into the drive shaft after the transmission. Since post-transmission hybrid systems are incompatible with engine testing, the agencies have decided to remove the reference to post-transmission systems in the hybrid engine test requirements in 40 CFR part 1036 and 49 CFR part 535. 40 CFR 1037.525, 40 CFR 1037.550, 40 CFR 1037.615, and 49 CFR 535.7(e)(1)(i) include requirements for testing post-transmission hybrids using a vehicle test. The agencies anticipate that there will be no impact on manufacturers by the deletion of this text, since the vehicle test procedures set out in the regulation specify how to test post-transmission systems.

Specifically, 40 CFR 1037.525, 40 CFR 1037.550, 40 CFR 1037.615, and 49 CFR 535.7(e)(1)(i) describe or reference the procedure to be used for testing hybrid systems with and without power take-off (PTO) devices on a vehicle test. Both pre- and post-transmission hybrid systems can use, and be tested with and without, PTO devices on a whole vehicle test. The current rule text states that manufacturers can test post-transmission hybrid systems on a whole vehicle test procedure to quantify CO<sub>2</sub> and fuel consumption improvements resulting with and without PTO equipment, but inadvertently

excludes pre-transmission hybrid systems. Therefore, agencies are amending the language to allow these pre-transmission hybrid systems with and without PTO to be tested on the vehicle test procedures in 40 CFR 1037.525, 40 CFR 1037.550, and 49 CFR 535.7(e)(1)(i). The agencies believe this is a non-controversial amendment that will allow the existing vehicle test procedure to appropriately apply to existing hybrid systems.

## **(2) Advanced Technology Improvement Factor**

40 CFR 1037.615 and 49 CFR 535.7(e)(1)(i) describe the procedure for measuring CO<sub>2</sub> and fuel consumption improvements from vehicles with hybrid and other advanced technologies (such as Rankine engines, electric vehicles and fuel cell vehicles), in order to generate advanced technology credits.<sup>8</sup> 40 CFR 1037.615 specifies how manufacturers can measure the effectiveness of the advanced system by chassis-testing a vehicle equipped with the advanced system and an equivalent conventional vehicle using the test procedures in 40 CFR part 1037, subpart F.

The effectiveness of the advanced system is calculated by measuring the CO<sub>2</sub> output from chassis tests of the vehicle with the advanced system and an equivalent conventional vehicle, thereby obtaining the relative marginal improvement between the two vehicles (the “improvement factor”). The “benefit” associated with the advanced system is then calculated by multiplying the Greenhouse Gas Emissions Model (GEM)

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<sup>8</sup> Advanced technology credits may be increased by a 1.5 multiplier and applied to any heavy-duty vehicle or engine subcategory with certain maximum limits applying. See 40 CFR 1036.740, 1037.740 and 49 CFR 535.7(e) for description of advanced technology credit program.

result for the vehicle with advanced technology by the dimensionless improvement factor. The benefit is then converted to advanced technology credits for the model year production volume of the vehicle subfamily with the advanced technology.

The final rule specified the procedure for applying the improvement factor in simulating a chassis test with a post-transmission hybrid system for A to B testing (40 CFR 1037.550) across multiple vehicle configurations having the same advanced technology. However, the regulations for developing the improvement factor using the chassis test procedures (40 CFR 1037.615 and 49 CFR 535.7(e)(1)(i)(A)(3)), did not allow the improvement factor to be applied to multiple vehicle configurations having the same advanced technology. The agencies are, therefore, amending the regulatory text that describes the measurement of advanced technology improvement to include this optional specification as well (in effect, carrying over the specification from 40 CFR 1037.550 to 40 CFR 1037.615 and 49 CFR 535.7(e)(1)(i)(A)(3)). The hybrid and advanced technology improvement factor can now be applied to multiple vehicle configurations using the same technology, as long as the value used for other configurations “represents the vehicle configuration with the smallest potential reduction in greenhouse gas emissions as a result of the hybrid capability” and is consistent with good engineering judgement. The agencies believe that no one will object to these changes.

The agencies are therefore revising 40 CFR 1037.615 and 49 CFR 535.7(e)(1)(i) to allow manufacturers, if they wish, to generate advanced technology credits from multiple heavy-duty vehicle configurations within a vehicle family group by testing a single vehicle of that group, provided the vehicle tested has the smallest potential

reduction in fuel consumption of the vehicles with advanced technology capability. The agencies anticipate that this change may reduce testing and reporting costs for manufacturers while still allowing flexibility in choosing to test additional configurations within the family group. By limiting the use of this testing option to vehicles with the smallest potential reduction in emissions (or fuel consumption), fuel efficiency gains and emission reductions will not be compromised. Therefore, the agencies do not expect this change to be controversial.

### **(3) Optional Certification for Up to Class 6 Spark-Ignition Engine Vehicles**

Heavy-duty pickup trucks and vans are pickup trucks and vans with a gross vehicle weight rating between 8,501 pounds and 14,000 pounds (Class 2b through 3 vehicles) manufactured as complete vehicles by a single or final stage manufacturer or manufactured as incomplete vehicles as designated by a manufacturer. Under the GHG rules and fuel efficiency rules, these vehicles are certified on a chassis dynamometer test, as opposed to the GEM simulation tool used to certify the vocational and tractor categories. NHTSA's current regulations allow Classes 4 and 5 spark-ignition vehicles the option of certifying on a chassis dynamometer test and to comply with heavy-duty pickup truck and van standards instead of vocational standards, as those vehicles may have more similar characteristics to Class 2b-3 pickups or vans than they do with other vocational vehicles in their class.<sup>9</sup> At the time of the final rule, NHTSA was unaware of any higher class spark ignition vehicles that would be similarly appropriate to test on a

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<sup>9</sup> See 49 CFR 523.7.

chassis dynamometer. EPA's current regulations allow spark-ignition vehicles of all classes the option of certifying on a chassis dynamometer test and to the standards in 40 CFR 1037.104.<sup>10</sup>

This amendment will align the regulatory texts by closing the current gap in vehicle classes eligible for NHTSA's and EPA's optional certification provisions. The agencies are aware of several Class 4 and 5 vehicles that could benefit from the optional certification path but now have identified one spark-ignition Class 6 vehicle for which the chassis dynamometer test would be appropriate. This vehicle is available in complete and cab-complete configurations. NHTSA has performed an analysis that supports that allowing this testing option up to and including Class 6 vehicles will reduce testing burden without resulting in a credit windfall or otherwise affecting the stringency of the standards.<sup>11</sup> As the agencies are not aware of any spark-ignition vehicles above Class 6, we believe it is appropriate to limit this option to Classes 6 and below. Therefore, the agencies anticipate that this alignment will be non-controversial.

The agencies are therefore allowing manufacturers of complete or cab-complete vehicles up to and including Class 6 vehicles that have spark-ignition engines the option of certifying using the chassis dynamometer test procedures and to the standards of 40 CFR 1037.104. The agencies are revising the requirements in 40 CFR 1037.104, 40 CFR 1037.150, 49 CFR 523.7, and 49 CFR 535.5(a)(6) to reflect this alignment of provisions.

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<sup>10</sup> See 40 CFR 1037.150(l).

<sup>11</sup> NHTSA. Memorandum to Docket NHTSA-2012-0152. November 2012.

#### **(4) Reporting for Heavy-Duty Pickup Truck and Van Manufacturers**

For model years 2013 and later, heavy-duty pickup truck and van (PUV) (i.e., Class 2b-3) manufacturers complying with NHTSA's voluntary and mandatory standards are required to submit two different reports after the end of the model year (49 CFR 535.8(d) and (e)). Manufacturers must submit an end-of-the-year-report (EOY report), including both GHG emissions and fuel consumption information, within 90 days after the end of the given model year and no later than April 1 of the next calendar year. Manufacturers must also submit a final report within 270 days after the end of the given model year and no later than October 1 of the next calendar year. Both EOY and final reports contain the same information, and are used by the agencies to review a manufacturer's final compliance data and to identify which manufacturers have a credit surplus or deficit for the given model year. Thus, NHTSA's final rule regulatory text requires that both a final and an EOY report be submitted from all heavy-duty PUV manufacturers. EPA requires one final report from the heavy-duty PUV manufacturers, specified in 40 CFR 86.1865-12(1)(2). This final report must be submitted no later than May 1 of the calendar year following the given model year.

The final rule preamble discussed the agencies' intent to streamline final reports submitted to the agencies, consolidating the multiple and separate reports as proposed in the NPRM (see 76 FR 57262). However, the agencies believed, and still believe that requiring two reports from manufacturers that have not previously been subject to fuel efficiency regulations will assist in assessing manufacturer compliance and will assist in the identification of any potential issues. That reasoning does not apply to PUV manufacturers, who are already regulated under the light-duty CAFE program and have

well-established reporting systems. Further, for this joint national program, the agencies intended that PUV manufacturers would send single combined reports to satisfy the compliance needs of both agencies. The additional report presently required by the NHTSA regulation is inconsistent with this goal.

NHTSA is therefore combining the EOY and final reporting requirements for heavy-duty pickup truck and van manufacturers in 49 CFR 535.8(d) and (e). In parallel with the existing EPA regulations, those manufacturers will now only be required to submit a single final report. To supplement the existing reference to the provisions outlining this requirement, EPA and NHTSA are also adding another more specific reference in the regulations to clarify the alignment of the submission date for these reports with that of EOY reports from other heavy-duty vehicle and engine manufacturers (90 days after the end of the given model year and no later than April 1 of the next calendar year). This amendment will harmonize reporting requirements between the two agencies and reduce the compliance burden for manufacturers, without affecting the overall content reported, or the agencies' ability to effectively assess compliance. As such, the agencies do not expect that it will be controversial.

#### **(5) Configuration and Subconfiguration Definitions**

The existing EPA and NHTSA regulations contain definitions for “configuration” and “subconfiguration,” which define how to group vehicles by similar characteristics within a test group when conducting testing to determine CO<sub>2</sub> emissions and fuel consumption rates for heavy-duty pickup trucks and vans. In each agency's regulations, “configuration” means a subclassification within a test group that is based on engine code, transmission type and gear ratios, final drive ratio and other parameters that EPA

designates. Likewise, “subconfiguration” means a unique combination within a vehicle configuration of equivalent test weight, road-load horsepower, and any other operational characteristics or parameters that EPA determines may significantly affect CO<sub>2</sub> emissions within a vehicle configuration.

The agencies believe the current definitions could be specified further according to established principles to prevent any ambiguity for manufacturers in conducting testing for heavy-duty pickup trucks and vans. The terms “transmission type” and “engine code” can be further defined in the definition for “configuration,” to reflect common industry understanding of the terms. In addition, the term “equivalent test weight” could be further defined in the definition for “subconfiguration” to carryover the existing definition included in 40 CFR 1037.104(d)(11). Therefore, the agencies are adding these further details to clarify these terms in 40 CFR 1037.104(d)(12) and 49 CFR 535.4. As both additions provide clarity to existing concepts, and do not introduce new meanings to the terms, the agencies believe they are non-controversial.

#### **(6) Vocational Tractor Vehicle Families**

In the final rule, the regulatory text in 40 CFR 1037.230 related to vocational tractor families is unintentionally ambiguous, and is inconsistent with, the preamble and other regulatory text. In the vocational tractor provisions of 40 CFR 1037.630(b)(2), EPA requires that tractors “reclassified under this provision must be certified as a separate vehicle family. However, they remain part of the vocational regulatory subcategory and averaging set that applies to their weight class.” Although 40 CFR 1037.630(b)(2) requires two vocational tractor families dependent on the GVWR of the vehicle, the text in 40 CFR 1037.230(a)(1) implies only a single vocational tractor family

default. This inconsistency is the result of an oversight when provisions were added allowing tractors to certify as vocational vehicles, and it is inconsistent with the way vehicle families are treated throughout the program, where they are split by weight class (76 FR at 57240, September 15, 2011). Therefore, EPA is revising 40 CFR 1037.230(a)(1) to be consistent with 40 CFR 1037.630(b)(2) by splitting the vocational vehicles families into two groups, those above 33,000 pounds GVWR and those above 26,000 pounds GVWR and at or below 33,000 pounds GVWR.

NHTSA is adding the same distinction in 49 CFR 535.5(c) to clarify how fuel consumption credits are generated and apply to averaging sets for these vehicles. As these clarifications align with the existing treatment of all vehicle families and the premise of the division of vehicle families, the agencies believe they are non-controversial.

### **C. NHTSA Regulatory Action on HD Fuel Efficiency Technical Amendments**

NHTSA seeks to correct technical errors, clarify requirements, and incorporate requirements that were inadvertently omitted in 49 CFR part 535 in order to align with EPA's current regulatory text. As the following changes merely parallel existing EPA requirements that were more consistent with the intent of the final rule and will not result in additional requirements for manufacturers or in a change in the stringency of the standards, they are not anticipated to be controversial or to result in adverse comment.

A side-by-side comparison of the original and amended regulatory text is provided in a memorandum to the dockets for this rulemaking.<sup>12</sup>

**(1) Secondary Manufacturers**

Both fuel consumption and greenhouse gas emission standards apply to the manufacturer holding the EPA certificate of conformity. In the EPA regulatory text (40 CFR 1037.620(a) and (b)), a primary manufacturer has the option to transfer an uncertified incomplete tractor or vocational vehicle to a secondary manufacturer to be completed and sold in the United States so long as that secondary manufacturer has substantial control over the final design and completes assembly of the emission controls (ensuring that the engine and vehicle will conform to regulations in their final configurations). By agreement with the primary manufacturer, the secondary manufacturer may finish the assembly of the emission control systems of a partially complete vehicle and perform vehicle testing. In that case, the second stage manufacturer would apply for the vehicle's EPA certificate of conformity.

The current NHTSA regulations do not specify the process by which a secondary stage manufacturer may become an EPA certificate holder, and thus subject to both greenhouse gas emissions and fuel consumption standards. Thus, if someone unfamiliar with the EPA process were to read the NHTSA regulations alone, it would not be clear how a secondary stage manufacturer could become subject to fuel consumption

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<sup>12</sup> Hicks, M. and A. Cullen. Memorandum to Dockets EPA-HQ-OAR-2012-0102 and NHTSA-2012-0152. Heavy-Duty Engine and Vehicle Greenhouse Gas Emissions and Fuel Consumption Regulatory Changes. May 2013.

standards. Therefore, NHTSA is modifying its provisions in 49 CFR 535.3(b) and (c) to more clearly include secondary stage manufacturers meeting the EPA requirements in 40 CFR 1037.620 as subject to the fuel consumption standards. NHTSA is also modifying its provisions in 49 CFR 535.7(a) to clarify that either the primary or secondary manufacturer can generate fuel consumption credits for over-compliance and may use one or more of the program flexibilities in gaining credits.

These clarifications will align NHTSA's regulations with EPA's. As the clarifications simplify the path a reader must take to understand how an entity becomes subject to the fuel consumption standards, and do not actually change the application of the standards, NHTSA does not expect this to be controversial.

## **(2) Credit Holders**

In the preamble to the final rule, the agencies stated that the NHTSA and EPA flexibility provisions ("ABT" programs)<sup>13</sup> are essentially identical in structure and function (see 76 FR 57127). The agencies also stated that they intended to allow a manufacturer to offset any credit shortfalls within an averaging set, by using "banked" or "traded" credits received from another manufacturer. The EPA regulations (40 CFR 1036.701(e) and (h)) allow manufacturers to trade emissions credits generated from engines or vehicles to any purchaser other than manufacturers so long as those parties retire the credits. Likewise, trading is defined as "the exchange of emission credits between manufacturers, or the transfer of credits to another party to retire them" (40 CFR

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<sup>13</sup> NHTSA and EPA flexibilities include: Averaging, banking, and trading (ABT) provisions; early credits; advanced technology credits (including hybrid powertrains); and innovative technology credit provisions.

1036.720(a) and 1037.720(a)). The current NHTSA regulations are silent on how parties other than manufacturers can acquire and trade credits.

NHTSA believes that the existing EPA ABT provisions help to maximize the benefits of the standards achieved during this critical initial phase of the program by providing the means for manufacturers to take full advantage of the program flexibility to trade earned credits, while providing a path for this flexibility to result in continued gains in fuel efficiency. In addition, NHTSA did not envision differences between the EPA and NHTSA ABT programs. Therefore, NHTSA is adding requirements to 49 CFR part 535 that parallel EPA's treatment of non-manufacturers in the ABT program. NHTSA is adding a definition in 49 CFR 535.4 for "credit holder" and adding requirements in 49 CFR 535.7 to clarify the limitations for non-manufacturers to obtain and trade fuel consumption credits. These additions will complement the EPA requirements in 40 CFR 1036.701(h), 1036.720(a), 1037.701(e), and 1037.720(a), and we do not expect anyone to object to this provision.

### **(3) Voluntary Compliance**

Manufacturers can voluntarily comply early with both the NHTSA and EPA standards for model year (MY) 2013, and with the NHTSA standards through MY 2015 (EPA's standards are mandatory beginning in MY 2014). For MYs 2013 and 2014, EPA provides additional flexibilities and specifications in 40 CFR 1037.150 to incentivize early compliance. NHTSA inadvertently omitted parallel provisions for its early compliance program. As described in the final rule preamble, manufacturers entering the early compliance program for NHTSA must do so "exactly as implemented" under EPA's early compliance program (see 76 FR 57245). The purpose of the NHTSA early

compliance provisions is to provide incentives for near-term fuel efficiency gains by allowing manufacturers to comply with both programs simultaneously in MYs 2013 and 2014.

EPA provisions in 40 CFR 1037.150(a)(2) limit the number of EPA credits a manufacturer can generate for heavy-duty pickup trucks and vans produced after MY 2013 begins. EPA specifies that for any test groups used to certify these vehicles produced after the start of the model year, a manufacturer may only generate credits for those vehicles that are produced after the last test group has received an approved certificate by EPA. Therefore, for example, if a manufacturer produces three test groups in an averaging set and it receives certificates for those test groups on January 4, 2013, March 15, 2013, and April 24, 2013, it may not generate credits for its MY 2013 production for any of the vehicles that are produced before April 24, 2013. The same limitation is provided for production tractors and vocational vehicles (40 CFR 1037.150(a)(1)). NHTSA is proposing to incorporate these provisions into its voluntary compliance sections (49 CFR 535.5(a)(4), (b)(2) and (c)(2)) in order to ensure harmonization between the two programs. Otherwise, manufacturers could gain credits under the NHTSA program that would be excluded by the EPA program.

For MY 2013, EPA provisions allow manufacturers to certify their U.S.-directed production tractors and vocational vehicles within each regulatory subcategory separately (instead of certifying all the vehicles within a regulatory category) as an incentive for early introduction (40 CFR 1037.150(a)(1)). For example, a manufacturer could certify only its medium heavy-duty vocational vehicles in MY 2013 and then certify all of its three vocational vehicle subcategories starting in MY 2014. NHTSA provided parallel

provisions in 49 CFR 535.5(b)(2) and (c)(2), but the current regulatory text would require manufacturers to comply with all the vehicles within each regulatory category. Thus, in this example, the vocational vehicle manufacturer would have to certify all of its U.S.-directed production vehicles in MY 2013 for NHTSA whereas it would only have to certify its medium heavy-duty vocational vehicles for EPA. The mismatch in certified vehicles under the EPA and NHTSA programs for MY 2013 could cause manufacturers to opt to comply with the EPA standards early, but to not opt into the NHTSA program or could disadvantage a manufacturer under the NHTSA program compared to the EPA program. NHTSA is therefore correcting 49 CFR 535.5(b)(2) and (c)(2) to include the same provisions for regulatory sub-category compliance for MY 2013 as EPA.

The definition of a model year in the final rule allows manufacturers to include vehicles in a given model year that are manufactured after January 1 of the previous calendar year for which the model year is named through December 31 of the corresponding year (see 40 CFR 1037.801 and 49 CFR 535.4). However, compliance with EPA standards for model year 2014 is optional for vehicles manufactured prior to January 1, 2014 (40 CFR 1037.150(g)). Thus, a manufacturer may choose to certify only vehicles produced from January 1, 2014 through December 31, 2014 and exclude model year 2014 vehicles produced between January 1, 2013 and December 31, 2013.

NHTSA's requirements for the voluntary MY 2014 do not allow manufacturers this same flexibility. Instead, manufacturers choosing to comply with the NHTSA program in MY 2014 must certify vehicles produced over the entire standard model year period. NHTSA intended that provisions for voluntary early compliance with its program align with the EPA program. NHTSA believes that the MY 2014 EPA provisions are appropriate for

that model year, the first mandatory year under the EPA program, particularly because they would lead to the least confusion among manufacturers. Aligning NHTSA's program provisions with EPA's will encourage manufactures to voluntarily opt in to the NHTSA program and enable manufacturers to generate similar credit balances in both programs, as intended. Therefore, NHTSA is modifying 49 CFR 535.5(a)(4), (b)(2) and (c)(2) to incorporate those provisions. As manufacturers typically lock their production plans anywhere from 18 to 24 months in advance of the production model year, they may not be able to bring early MY 2014 production vehicles into compliance with the NHTSA program absent this change.

As these corrections will align the NHTSA early compliance program to the specifications provided in the EPA program, and thus also align the NHTSA program with the intent of harmonization expressed in the preamble, NHTSA does not expect these corrections to be controversial.

#### **(4) Reporting**

The final rule preamble specifies that a manufacturer not participating in the ABT program is required to provide an end-of-the-year (EOY) report after each model year. The EPA regulations (40 CFR 1036.250 and 1037.250) require this report to be submitted within 90 days after the calendar year ends. The NHTSA regulations require two reports for non-ABT participating manufacturers, an EOY report containing preliminary final estimates and a final report containing the final data. For this joint national program, the agencies developed their reporting requirements with the intent for manufacturers to send single combined reports to satisfy the compliance requirements of both agencies. The differences in the agencies' reporting requirements do not support this goal. Further,

requiring non-ABT manufacturers to submit two reports would create unnecessary burden, as a single report would enable NHTSA to assess compliance for non-ABT manufacturers. Therefore, NHTSA is restructuring its reporting provisions (49 CFR 535.8(d) and (e)) to align with EPA's by clarifying that non-ABT participating manufacturers are only required to provide one report with final data 90 days after the model year.

For vehicle and engine manufacturers participating in the ABT program, EPA and NHTSA require EOY reports to be submitted with preliminary final estimates of compliance information 90 days after the model year ends. NHTSA is adding a clarification in 49 CFR 535.8(d) to specify that these EOY reports for participating manufacturers must contain preliminary data and for non-participating manufacturers must contain finalized data. Likewise, as discussed in Section I.B.4, clarifications will also be added for heavy-duty pickup truck and van manufacturers specifying that the EOY reports must contain finalized data.

NHTSA is also clarifying requirements for submitting information on exempted vehicles for both participating and non-participating manufacturers. In the final rule, NHTSA regulations require manufacturers to provide a plan describing the vehicles exempted as off-road vehicles in the EOY and final reports. EPA regulations require the plan be submitted only in the EOY report with finalized data. NHTSA is modifying its regulations to align with the EPA provisions and will require information on exempted vehicles to be submitted only with the EOY report with finalized data. This single reporting will provide NHTSA with the information needed to assess compliance.

As these clarifications are consistent with the agencies' intent as expressed in the final rule preamble (to consolidate duplicative reporting requirements), and the change will reduce reporting burdens without sacrificing necessary compliance data, NHTSA does not believe that this alignment will be controversial.

#### **(5) Vocational Tractor Compliance**

The final rule allows tractors meeting the definition of vocational tractors in 49 CFR 523.2 to comply with requirements for heavy-duty vocational vehicles. However, if a manufacturer is found not to have applied this allowance in good faith in its application for certification, it may not use this compliance path (it must comply instead with the tractor standards). EPA provides the complete requirements for vocational tractors in 40 CFR 1037.630. However, the NHTSA regulations mistakenly reference EPA's vocational tractor provisions as 40 CFR 1037.610 (the regulation for "vehicles with innovative technologies") instead of 40 CFR 1037.630. Therefore, NHTSA is correcting the reference specified in 49 CFR 535.5(c)(5).

#### **(6) Fuel Consumption Calculations and Credit Equations**

NHTSA is making a minor technical revision to address rounding inconsistencies when converting CO<sub>2</sub> values to equivalent fuel consumption values in the Greenhouse Gas Emissions Model (GEM) simulation tool. The GEM is programmed to use manufacturer-provided vehicle specifications to derive the CO<sub>2</sub> emissions (in grams CO<sub>2</sub> per ton-mile) and fuel consumption performance (in gallons per 1000 ton-miles) of vehicles. Both the CO<sub>2</sub> emissions and fuel consumption values are calculated and rounded to eight decimal places and then rounded once again in accordance with each agency's regulations. For NHTSA, the equivalent fuel consumption value derived by the

GEM must be rounded to the nearest 0.1 gallons per 1000 ton-mile (49 CFR 535.6(b)(3)). For EPA, the CO<sub>2</sub> emissions value must be rounded to the nearest 1 gram of CO<sub>2</sub> per ton-mile (40 CFR 1037.701). The rounding can cause differences in equivalency between the performance results in the EPA and NHTSA programs. For compliance, vehicles are grouped into subfamilies based upon the GEM-derived CO<sub>2</sub> emissions value for the EPA program and the GEM-derived fuel consumption value for the NHTSA program. Rounding can cause differences in how vehicles are grouped in the EPA and NHTSA programs, creating compliance accounting differences that the agencies did not intend. The agencies intended that the same vehicles would be grouped in each subfamily for the EPA program and the NHTSA program. To address the rounding inconsistencies, NHTSA is amending 49 CFR 535.6(b)(3) to clarify that equivalent fuel consumption values in the GEM must be derived from the CO<sub>2</sub> value rounded to the nearest whole number and expressed to the nearest 0.1 gallons per 1000 ton-mile. This change will ensure the same vehicles will be grouped into a single subfamily for compliance under both programs. Hence, the agencies are releasing a revised version of GEM, GEM v2.0.1, with this rulemaking which incorporates this change in conversion methodology.

There is also a typographical error in the equations that are used to determine fuel consumption credits in the NHTSA regulations (49 CFR 535.7). In the existing equations, fuel consumption credits for heavy-duty vehicles and engines are calculated by multiplying by a factor of  $10^2$  for heavy-duty pickup trucks and vans and for engines, and by a factor of  $10^3$  for vocational vehicles and tractors. However, the correct factors for multiplication should be  $10^{-2}$  for heavy-duty pickup trucks and vans and for engines and  $10^{-3}$  for vocational vehicle and tractors. These factors ensure the proper conversion and

alignment between EPA and NHTSA calculated credits. Therefore, NHTSA is amending its fuel consumption credit equations in 49 CFR 535.7(b)(9), (c)(11) and (d)(11) to reflect the correct factors for multiplication and does not anticipate any objections to this.

**(7) Definitions for Incomplete and Complete Heavy-Duty Pickup Trucks and Vans**

In the final rule, EPA included separate definitions to describe complete and incomplete vehicles in the vocational vehicle and tractor regulatory subcategories and for vehicles in the heavy-duty pickup truck and van subcategory. NHTSA included the same definitions for incomplete and complete vocational vehicle and tractors in its regulations but omitted the ones for pickup trucks and vans. Therefore, NHTSA is adding a reference to the EPA definitions for complete and incomplete pickup trucks and vans in 49 CFR part 523. NHTSA believes these changes are non-controversial as they will simply help to clarify characteristics in the construction of complete and incomplete heavy-duty pickup trucks and vans already existing in EPA's regulations.

**(8) Off-road Exclusion Petitioning Process**

EPA and NHTSA requirements specify that heavy-duty off-road vehicles meeting the criteria in 40 CFR 1037.631 and 49 CFR 535.3(g) are exempted without request from vehicle standards, and manufacturers with off-road vehicles not meeting the enumerated criteria may petition for exemption by describing how and why their vehicles should qualify for exclusion (49 CFR 535.8(h)(6)(ii)). While this voluntary process is already described in this provision, NHTSA believes that manufacturers would benefit from additional language highlighting timing considerations should they plan to rely upon such

a petition. While a manufacturer may submit a petition at any time, NHTSA recommends that they be submitted early enough in advance of the model year to ensure that a determination can be made by the agencies, and should the vehicles fail to be excluded, the manufacturer has sufficient time to submit and obtain approved certificates of conformity from EPA required prior to first commercial sale. Therefore, NHTSA is adding this recommendation to the existing provision for off-road exemptions in 49 CFR 535.8(a). As this amendment merely highlights existing timing considerations, and does not change any aspect of the process or requirements, NHTSA believes it will be non-controversial.

#### **D. EPA Regulatory Action on HD GHG Amendments**

EPA is amending 40 CFR parts 86, 1036, 1037, 1065, and 1066 to correct typographical errors, clarify test procedures and certification procedures, and correct the regulations to make them consistent with the intent expressed in the preamble to the final rules (see 76 FR 57106). If EPA receives adverse comment on a distinct EPA provision in this subsection, then EPA will publish a timely withdrawal in the Federal Register indicating which provisions EPA is withdrawing. The provisions that are not withdrawn will become effective on the date set out in the DATES section of this action. EPA would address all public comments in a subsequent final rule based on the EPA-proposed rule accompanying this joint direct final rule.

A comparison of the original and amended regulatory text is provided in a memorandum to the dockets for this rulemaking.<sup>14</sup>

**(1) Regulatory Changes to 40 CFR Part 1036**

EPA is revising portions of the regulations in 40 CFR part 1036, as described below.

- EPA is revising §§ 1036.5, 1036.150, and 1036.615 to address typographical issues to correct regulatory citations within the regulations.
- EPA is correcting § 1036.150(g)(2) and (g)(3) to change the assigned additive deterioration factor (DF) for nitrous oxide (N<sub>2</sub>O) and methane (CH<sub>4</sub>) emissions from 0.02 to 0.020 g/hp-hr to account for the appropriate number of significant digits.
- EPA is amending § 1036.225 to clarify that the CO<sub>2</sub> FEL is not required on the emission control information (ECI) label according to the provisions in § 1036.135.
- EPA is clarifying that the CH<sub>4</sub> and N<sub>2</sub>O emission standards apply to all testable configurations in § 1036.205.
- EPA is adding a definition of “preliminary approval” to § 1036.801.

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<sup>14</sup> Hicks, M. and A. Cullen. Memorandum to Dockets EPA-HQ-OAR-2012-0102 and NHTSA-2012-0152. Heavy-Duty Engine and Vehicle Greenhouse Gas Emissions and Fuel Consumption Regulatory Changes. May 2013.

## **(2) Regulatory Changes to 40 CFR Part 1037**

EPA is also revising portions of the regulations in 40 CFR part 1037 to correct technical errors and provide additional clarity in the regulations.

- **Heavy-Duty Pickup Truck and Van Regulations:** EPA is amending several provisions in §§ 1037.15 and 1037.104 to specify which parts of 40 CFR part 86 apply to these vehicles and to specifically reference portions of 40 CFR part 86 in 40 CFR part 1037. EPA also is revising the language in § 1037.150(a)(2) to make it consistent with the preamble to the final rule which stipulates that the entire heavy-duty pickup truck and van fleet must be certified to qualify for early credits (see 76 FR 57245). Also, EPA is clarifying how heavy-duty pickup truck and van subconfigurations are selected for testing in § 1037.104(d)(9)(i) through (iii). EPA is also revising § 1037.104(g)(2)(ii), (g)(2)(iv), and (g)(5) to clarify the approach for estimating analytically derived CO<sub>2</sub> emission rates (ADCs).
- **Air Conditioning (A/C) Leakage Provisions:** The MY2017-2025 Light-Duty GHG and Fuel Economy Rule separated 40 CFR 86.1866 into four sections for clarity. The A/C leakage section moved to 40 CFR 86.1867-12. Thus, EPA is amending § 1037.115 to reflect this change. In addition, EPA is revising § 1037.115 because the procedure for determining the hydrofluorocarbon (HFC) leakage rate for air conditioning systems with alternate refrigerants is already addressed in SAE J2727, which is incorporated by reference in 40 CFR 86.1, and therefore does not need to be included in § 1037.115.
- **Labeling clarification:** EPA is clarifying in § 1037.135 that the emission control label for the vehicle only requires a statement regarding the size of the fuel tank

for vehicles that contain an evaporative canister for controlling emissions.

- Typographical fixes: EPA is addressing the typographical errors in § 1037.135 relative to labeling, § 1037.501 related to the trailer specification, and § 1037.520 which includes a weight reduction explanation.
- EPA is clarifying that the general requirements for obtaining a certificate of conformity and EPA's authority to perform confirmatory testing on vehicles, including the vehicles used to determine Falt-aero (see § 1037.201).
- EPA is revising § 1037.550 to change the nomenclature used for the vehicle speed variable from *S* to *v* to be consistent with 40 CFR part 1065. EPA is also removing the torque control option for testing post-transmission hybrid systems because it causes testing issues when the vehicle is shifting and braking. In addition, removing torque control mode from the dynamometer control options reduces lab-to-lab variability.
- EPA is clarifying the regulatory text in § 1037.620(a)(3) to cover instances where the secondary manufacturer who would hold the vehicle GHG certificate may be a small business that is exempted from the GHG regulations.
- EPA is revising § 1037.660 related to the automatic engine shutdown (AES) provisions. § 1037.660(c) currently allows manufacturers to obtain a discounted credit for installing AES systems that expire prior to the end of the vehicle's life based on the ratio of the set point relative to 1,259,000 miles.<sup>15</sup> EPA is not

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<sup>15</sup> The basis for the lifetime mileage assumption for heavy-duty tractors is discussed in the Regulatory Impact Analysis for the Final Rule on page 2-69. Available in Docket # EPA-HQ-OAR-2010-0162-3634

revising that provision, except to change the regulatory provision numbering from § 1037.660(c) to § 1037.660(c)(1). However, similar to the reasons which supported the development of vehicle speed limiter flexibilities, an automatic engine shutdown system can be developed to alleviate other potential concerns that impede its adoption. For example, some amount of idling may be needed for truckers who experience significant ambient temperature excursions that would necessitate extended idling or for idle reduction technologies, such as auxiliary power units, that malfunction and necessitate extended idling. A remedy to these concerns would be to design the AES such that it allows for a predetermined number of hours per year of idling. EPA is adding § 1037.660(c)(2) to appropriately quantify the CO<sub>2</sub> emissions and fuel consumption of a partial AES system by discounting the AES input to GEM. EPA is using an assumption of 1,800 hours as the annual idling time in the calculation, which is consistent with the final rule (76 FR 57154). EPA used 1,800 hours as the annual idling time for sleeper cabs because it reasonably reflects the available range of idling time cited in several studies, as discussed in the preamble to the final rule and in the Final Regulatory Impact Analysis (pages 2-67 and 2-68).<sup>16</sup> The 1,800 hours of idling was used in the final rule to determine the credit of 5 grams of CO<sub>2</sub> per ton-mile for the use of AES systems (page 2-68 of the Final Regulatory Impact

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<sup>16</sup> Regulatory Impact Analysis: Final Rulemaking to Establish Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles. August 2011. Available in Docket # EPA-HQ-OAR-2010-0162-3634.

Analysis).EPA is adding a provision to § 1037.745. This new provision clarifies manufacturers' liability for offsetting debits (or deficit credits) after certifying with emissions above the standards for three years. We want to avoid claims that the statute of limitations starts to apply in the first year of using debits, since this could significantly limit our ability to adequately enforce the requirement. We have generally adopted this approach in other rules that allow debits to be carried forward a given number of model years and are later offset with credits (40 CFR 86.1861-04(e), 86.1864-10(o), and 86.1865-12(k)).

- EPA is adding a definition of “preliminary approval” to § 1037.801.
- EPA is revising the “Regulatory Sub-category” definitions in § 1037.801 to match the definition of “Class” in 40 CFR 1037.801, be consistent with DOT’s Gross Vehicle Weight Rating Classes in Table II of 49 CFR 565.15, and aggregate the heavy-duty pickup truck and van sub-category to match the definition in 49 CFR 535.4.

### **(3) 40 CFR Part 1037 Aerodynamic Assessment**

A vehicle’s design impacts the amount of power that is required to move the vehicle down the road. Depending on the vehicle speed, two of the largest impacts on GHG emissions and fuel consumption are aerodynamics and tire rolling resistance. As part of the Heavy-Duty GHG and Fuel Efficiency rule, manufacturers are required to meet vehicle-based GHG emissions and fuel efficiency standards. Compliance with the vehicle standard for combination tractors is determined based on a vehicle simulation tool called the Greenhouse Gas Emissions Model (GEM). Various characteristics of the

vehicle are measured and these measurements are used as inputs to the model. These characteristics relate to key technologies appropriate for this subcategory of truck—including aerodynamic features, weight reductions, tire rolling resistance, the presence of idle-reducing technology, and vehicle speed limiters. See generally 76 FR 57135.

The aerodynamic drag of a vehicle is determined by the vehicle's coefficient of drag (Cd), frontal area, air density and speed. As noted in the Heavy-Duty GHG and Fuel Efficiency rule, quantifying truck aerodynamics as an input to the GEM presents technical challenges because of the proliferation of vehicle configurations, the lack of a clearly preferable standardized test method, and subtle variations in measured aerodynamic values among various test procedures. Id. at 76 FR 57148-57151. Class 7 and 8 tractor aerodynamics are currently developed by manufacturers using a range of techniques, including wind tunnel testing, computational fluid dynamics, and constant speed tests.

We developed a broad approach that allows manufacturers to use these multiple different test procedures to demonstrate aerodynamic performance of the tractor fleet given that no single test procedure is superior in all aspects to other approaches. Allowing manufacturers to use multiple test procedures and modeling coupled with good engineering judgment to determine aerodynamic performance is consistent with the current approach used in determining representative road load forces for light-duty vehicle testing (40 CFR 86.129-00(e)(1)). However, we also recognize the need for consistency and a level playing field in evaluating aerodynamic performance.

The agencies developed a bin structure to group aerodynamic test results for the proposed rulemaking, and adjusted the method used to determine the bins in the final

rule. The agencies, while working with industry, developed an approach for the final rulemaking which identified a reference aerodynamic test method and a procedure to align results from other aerodynamic test procedures with the reference method, an enhanced coastdown procedure. Manufacturers will be able to use any aerodynamic evaluation method in demonstrating a vehicle's aerodynamic performance as long as the method is aligned to the reference method.

As discussed in the final rules, the agencies adopted aerodynamic technology bins which divide the wide spectrum of tractor aerodynamics into five bins (*i.e.*, categories) for high roof tractors (see 76 FR 57149). The first high roof category, Bin I, is designed to represent tractor bodies that prioritize appearance or special duty capabilities over aerodynamics. These Bin I trucks incorporate few, if any, aerodynamic features and may have several features that detract from aerodynamics, such as bug deflectors, custom sunshades, B-pillar exhaust stacks, and others. The second high roof aerodynamics category is Bin II, which roughly represents the aerodynamic performance of the average new tractor sold today. The agencies developed this bin to incorporate conventional tractors that capitalize on a generally aerodynamic shape and avoid classic features which increase drag. High roof tractors within Bin III build on the basic aerodynamics of Bin II tractors with added components to reduce drag in the most significant areas on the tractor, such as integral roof fairings, side extending gap reducers, fuel tank fairings, and streamlined grill/hood/mirrors/bumpers, similar to SmartWay trucks today. The Bin IV aerodynamic category for high roof tractors builds upon the Bin III tractor body with additional aerodynamic treatments such as underbody airflow treatment, down exhaust, and lowered ride height, among other technologies. And finally, Bin V tractors

incorporate advanced technologies that are currently in the prototype stage of development, such as advanced gap reduction, rearview cameras to replace mirrors, wheel system streamlining, and advanced body designs.

The agencies developed the aerodynamic drag area, CdA, bin values for the tractor categories based on coastdown testing conducted by EPA using the enhanced coastdown test procedures adopted for the final HD GHG and Fuel Efficiency rulemaking. EPA tested high roof sleeper cab combination tractors from each of the manufacturers in order to represent the aerodynamic performance that we would expect from a Bin III vehicle. The test results used for the HD GHG and Fuel Efficiency final rule are included in Table 0-1 below.<sup>17</sup>

**Table 0-1: Tractor CdA Values used in HD GHG Final Rule**

Truck	Expected Bin	Source	CdA (m <sup>2</sup> )
Class 8 High Roof Sleeper Cab			
B-3JM2-2H-TXCR	Bin III	EPA Test Program	6.4
B-3JM2-4N-TXCR	Bin III-IV	EPA Test Program	5.7
B-3JM2-2K-TXCR	Bin III	EPA Test Program	6.3
C-3JM2-1B-TXCR	Bin III	EPA Test Program	6.2
C-3JE2-1F-TXCR	Bin II-III	EPA Test Program	6.7

As part of EPA’s quality checks to the enhanced coastdown test program, EPA supplied OEMs with the coastdown test data for their individual trucks. Through post-rulemaking work with one OEM, EPA found an error in the data attributable to a testing contractor. The contractor had entered the same coastdown run twice into the dataset

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<sup>17</sup> U.S. EPA and NHTSA. Final Rulemaking to Establish Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles – Regulatory Impact Analysis. August 2011. Page 2-48.

provided to EPA for one of the trucks tested (one of 20 repeat runs was entered twice). As a result the truck appeared to have a CdA value of 5.7, rather than its actual value of 6.6. As such, the data that should have been used to establish the aerodynamic bins for the high roof sleeper cabs are listed in Table 0-2.

**Table 0-2: Tractor CdA Values used in this DFR**

Truck	Expected Bin	Source	CdA (m <sup>2</sup> )
Class 8 High Roof Sleeper Cab			
B-3JM2-2H-TXCR	Bin III	EPA Test Program	6.4
B-3JM2-4N-TXCR	Bin III	EPA Test Program	6.6
B-3JM2-2K-TXCR	Bin III	EPA Test Program	6.3
C-3JM2-1B-TXCR	Bin III-IV	EPA Test Program	6.2
C-3JE2-1F-TXCR	Bin II-III	EPA Test Program	6.7

Since the coastdown test is an input into the aerodynamic bins, EPA is correcting the CdA range for the affected bin levels. The adjustment to the ranges will allow Bin III, which represents a SmartWay truck, to still mean exactly what was intended in the HD GHG and Fuel Efficiency final rule. The Bins IV and V adjustments will require the same level of improvement we expected in the HD GHG and Fuel Efficiency final rule. This amendment is a correction, so will not change the standards or the costs or projected emissions reductions. The HD GHG and Fuel Efficiency rulemaking estimates of technology costs and the resulting aerodynamic efficiency improvements were made separately from the test procedure normalization reflected in the bin tables. Those cost and technical feasibility assessments set the absolute values of the steps in the table, where the testing results of the five tractors in Table 0-2 set the range of Bin III against which the rest of the aerodynamic bins are defined. Since EPA is not changing either the technical descriptions of the bins or the estimates of the aerodynamic loss or benefits in moving between bins in the table, EPA is estimating no change in HD GHG and Fuel

Efficiency final rulemaking costs or benefits. EPA is also not changing the input into GEM related to each aerodynamic bin; therefore, this change has no impact on the GHG or on fuel consumption standards.

EPA is making the adjustments shown in Table 0-3 to correct the technical error in the coastdown data used in the HD GHG and Fuel Efficiency final rule. Manufacturers will use these corrected aerodynamic bin levels in their end of year reports for all 2013 MY and later tractors.

**Table 0-3: Revised Table in § 1037.520(b)**

High-Roof Sleeper Cabs		
If your measured $C_D A$ ( $m^2$ ) is . . .	Then your Bin Level is...	Then your $C_D$ input is . . .
$\geq 7.6$	Bin I	0.75
6.8-7.5	Bin II	0.68
6.3-6.7	Bin III	0.60
5.6-6.2	Bin IV	0.52
$\leq 5.5$	Bin V	0.47

**(4) Regulatory Changes to 40 CFR Parts 1065 and 1066**

EPA is restoring text to § 1065.610(c)(3)(i) through (iii) which was inadvertently removed in the final rule adopting standards for Category 3 marine diesel engines (75 FR 22896, April 30, 2010). This text was most recently published in the final rule adopting standards for locomotive engines and Category 1 and Category 2 marine diesel engines (73 FR 37325, June 30, 2008).

EPA is also revising portions of the regulations in 40 CFR part 1066 to clarify test procedures. Specifically, § 1066.310(b) is revised to clarify the coastdown process and simplify the anemometer calibration process.

**(5) Regulatory Changes to 40 CFR Part 85**

EPA is revising § 85.525 to separate the light-duty and heavy-duty fuel conversion regulations to provide clarity regarding the applicability of the fuel conversion regulations to heavy-duty pickup trucks and vans.

**(6) Regulatory Changes to 40 CFR Part 86**

EPA is also revising portions of the regulations in 40 CFR part 86. First, EPA is revising § 86.010-18(q) to provide a mechanism for engine manufacturers to identify engines which are only suitable for installation in hybrid applications due to the on-board diagnostics (OBD) calibration. Manufacturers who opt to produce a unique set of engines for hybrid applications will include a compliance statement on the ECI label that states “for use in hybrid applications only.”

Second, EPA is revising portions of § 86.1865-12 to clarify the provisions that specifically apply to the heavy-duty pickup trucks and vans subject to 40 CFR 1037.104.

Third, EPA is removing §§ 86.007-23(n) and 86.1844-01(j), which describe how to report CO<sub>2</sub>, N<sub>2</sub>O, and CH<sub>4</sub> emissions. There is no need or benefit for manufacturers to submit greenhouse gas emission data in the model years before emission standards apply for those pollutants.

**(7) Summary of Heavy-Duty GHG Amendments**

EPA does not expect that these minor revisions to 40 CFR parts 85, 86, 1036, 1037, 1065, and 1066 will have any adverse cost impact to the manufacturers. There are no testing costs associated with the revisions. There is no environmental impact associated with this regulatory action because this rulemaking does not change the heavy-

duty engine and vehicle greenhouse gas emission standards that manufacturers have to meet; it simply makes some minor amendments to the regulations.

## **II. EPA Technical Amendments**

### **A. Replacement Engines**

In 1996, EPA adopted a provision allowing manufacturers in limited circumstances to produce new, exempt engines for replacing failed engines (61 FR 58102, November 12, 1996). With this approach, manufacturers have been able to make new, exempt engines in cases where engines certified to current standards do not have the physical or performance characteristics needed to power the equipment with the old engine. Without this provision, some equipment owners would have been forced to prematurely scrap otherwise working equipment (sometimes worth millions of dollars), because no engine meeting current emission standards could be adapted for installation in the space occupied by the original engine.

EPA later added language to the replacement engine exemption to address the complications related to producing partially complete engines for replacement purposes, and to address the need to produce and sell replacement engines such that they would be available to operators with a critical need to avoid extended downtime in the case of engine failure (73 FR 59034, October 8, 2008). This expanded approach allowed manufacturers to sell a limited number of new, exempt replacement engines without taking the steps that would otherwise be required to document the need for the exemption and to arrange for the proper disposition of the old engine. Along with this expanded approach, EPA added circumvention language to describe the overall purpose of the replacement engine exemption in an attempt to prevent manufacturers and operators from

using exempted engines in ways that were unnecessary and/or detrimental to the environment. In particular, this text states that the provisions § 1068.240 are “intended to allow for replacement of engines that fail prematurely . . .” This language has been interpreted to mean that replacement engines may be used for no other purpose.

Since then, EPA has found that the circumvention language has had some unintended consequences. For example, California has adopted requirements for operators to reduce emissions from in-use equipment, which has led to a desire to install new replacement engines that are cleaner than the old engines. It is often the case that it is infeasible or impractical to install replacement engines certified to current standards, but suitable replacement engines designed to meet an intermediate level of emission standards are available. The circumvention language may prevent operators in California from achieving overall emission reductions that would result from upgrading their existing equipment with cleaner engines in this manner. It may also be the case that an engine will simply wear out, rather than experiencing premature failure, well before the equipment in which it is installed is at the end of its life. Under the current regulation, an operator under these circumstances would need to install a new engine certified to current standards, or find a used engine, to keep the equipment operating.

EPA continues to believe that new, exempt replacement engines should only be used in cases where a currently certified engine cannot practically be installed to power the old equipment. EPA believes the regulatory language without our description of intent to prevent circumvention serves this purpose without the unintended consequences described above. EPA is therefore removing the circumvention provisions from the regulations in § 1068.240. EPA expects manufacturers and operators following the

regulations to continue to use the exemption provisions appropriately and not for the purpose of circumventing the emission standards. EPA is adding language to explicitly limit this provision to equipment that has been in service 25 years or less (at the point of installation) so that manufacturers and operators do not use this provision to keep in operation older dirtier, equipment beyond the normal lifetime of the equipment, by continually using new engines to replace old engines. EPA has adopted this same restriction for stationary engines under 40 CFR 60.4210(i), except that the maximum equipment age is 15 years. EPA will continue to monitor compliance with the exemption provisions and will consider any appropriate changes to the regulation in the future to ensure that the exemption is properly used toward this purpose. This 25-year limit does not apply for marine diesel engines, since those engines are subject to separate replacement engine provisions.

The tracked option specified in § 1068.240(b) also includes an additional step to qualify for the replacement engine exemption for equipment not experiencing premature engine failure. In particular, manufacturers would need to make a determination that the replacement engine is designed with the greatest degree of emission control that is available for the particular application. For example, if the engine being replaced was built before the Tier 1 standards started to apply and engines of that size are currently subject to Tier 2 standards, the manufacturer would need to also consider whether it produces any Tier 1 or Tier 2 engines with the appropriate physical and performance characteristics for replacing the old engine. If the manufacturer produces a Tier 1 engine with the appropriate physical and performance characteristics, engines emitting at levels above the Tier 1 standards do not qualify for an exemption. The requirement to use the

cleanest available engine fits with the intent of facilitating voluntary incentive programs involving replacement engine upgrades toward the goal of reducing emissions from in-use equipment, but without imposing a requirement that would involve new technology development or impractical equipment design changes. This provision has already been in place for marine diesel engines in § 1042.615. In the case of equipment experiencing premature engine failure, we will continue to apply the simpler requirement that the replacement engine must meet emission standards that are the same as or better than the standards that apply to the old engine.

EPA is also adjusting the provisions related to the disposition of the old engine in § 1068.240(b). To be re-introduced into U.S. commerce, the old engine must either meet current emission standards or qualify for an exemption as if it were a new engine. The old engine could be re-used as a replacement engine for a different piece of equipment. Under this approach, an engine made from all new parts and an engine built with a used engine block and any mix of new or used additional parts would be treated the same way. For example, the recycled replacement engine would be subject to all the demonstrations and documentation requirements of § 1068.240(b), and it would count toward the allowance to produce a limited number of replacement engines under § 1068.240(c). For engines that are not re-introduced into U.S. commerce, manufacturers must destroy the old engine or confirm that it has been destroyed. These changes will further address the concern expressed in the circumvention language described above; in particular, EPA believes it is necessary to prevent the possibility of these old engines being installed in new equipment.

EPA is also adding some clarification to the regulations to address questions that have arisen, as well as making the following changes:

- Revising the labeling requirements to account for the possibility of using a new replacement engine to replace a previously exempted replacement engine. To the extent that the revised label statement differs from that specified by California ARB, we would expect to approve an adjusted statement that allows for a single, 50-state label under § 1068.201(c).
- Adjusting the reporting deadline for untracked replacement engines under § 1068.240(c). This change would allow manufacturers some time after the end of the calendar year to make the determinations and to take the required steps to fulfill the tracking requirements for replacement engines under § 1068.240(b). Any engines for which these steps and determinations are incomplete by the deadline for the report would need to be counted as untracked replacement engines. Further, to account for prevailing practices and typical timelines for replacement engines, we are moving back the deadline for this report from February 15 to March 31.
- Revising § 1068.240(c)(1) to specify that manufacturers may base sales limits for the untracked option on total U.S. production of certified and exempted engines together (including stationary engines).
- Adding language to clarify that § 1068.240(e) applies only for engines produced under a current, valid certificate. An exemption under § 1068.240(b) or (c) would be required to produce an engine that is identical to one that is no longer certified, even if the engine was formerly certified to standards (or a Family Emission Limits) that are at least as stringent as the current standards.

- Clarifying that the provisions in § 1068.240(d) related to partially complete engines also apply for “current-tier” replacement engines exempted under § 1068.240(e).
- Adding a statement to § 1042.615 for marine diesel engines to clarify our pre-determination that certified Tier 4 engines do not have the appropriate physical and performance characteristics for replacing older engines in marine vessels. This policy was established in our June 30, 2008 final rule (see 73 FR 37157).

In addition, we are revising § 1068.1 to correct two errors regarding the applicability of part 1068. First, we are restoring highway motorcycles to the list of categories that are not subject to part 1068. This was added, but then inadvertently removed, when we were completing two parallel rulemakings. Second, we are adding a reference to 40 CFR part 85 to identify how part 1068 applies in certain circumstances for heavy-duty highway engines. These changes are intended to clarify and reinforce existing requirements without modifying the underlying programs in any way.

#### **B. Nonroad Diesel Engine Technical Hardship Program**

EPA is amending the nonroad diesel engine technical hardship program to facilitate EPA granting exemptions to address certain hardship circumstances that were not considered when the original 2004 final rule was published. EPA adopted Tier 4 standards for nonroad diesel engines under 40 CFR part 1039 in 2004 (69 FR 38958, June 29, 2004). To meet these standards, engine manufacturers are pursuing development of advanced technologies, including new approaches for exhaust aftertreatment. Equipment manufacturers will need to modify their equipment designs to accommodate these new engine technologies and the corresponding changes to engine operating parameters (such

as operating temperatures and heat rejection rates). To provide flexibility for equipment manufacturers in their efforts to respond to these engine design changes, the Tier 4 standards included the Transition Program for Equipment Manufacturers. Flexibilities allowed under this program include delaying compliance with small-volume equipment models for several years or using allowances in the first year to manage the transition to the Tier 4 engines.

The Transition Program for Equipment Manufacturers is intended to allow nonroad equipment manufacturers wide discretion to manage their product development timeline. Equipment manufacturers may comply either based on a percent of their production (generally for high-volume manufacturers, as described in § 1039.625(b)(1)), or based on a maximum number of exempted pieces of equipment (generally for low-volume manufacturers, as described in § 1039.625(b)(2)). At the same time, the regulations include at § 1039.625(m) an acknowledgement that equipment manufacturers might face a wide range of circumstances, including cases where engine manufacturers might be late in providing compliant engines to nonintegrated equipment manufacturers such that the specified allowances are insufficient to avoid a disruption in the equipment manufacturer's production schedule. The technical hardship provision at § 1039.625(m) allows EPA to make a judgment that an equipment manufacturer that buys engines from another company, through no fault of its own, needs additional allowances to manage the transition to Tier 4 products. The regulation specifies a maximum allowance of 150 percent of a manufacturer's annual production (relative to § 1039.625(b)(1)), or a total of 1,100 allowances (relative to § 1039.625(b)(2)). The regulation also provides economic hardship provisions under § 1068.255; however, eligibility depends on manufacturers

showing that their solvency is in jeopardy without relief. Economic hardship therefore serves as a flexibility provision of last resort.

As the compliance dates for the Tier 4 standards approach, equipment manufacturers have described several scenarios where the technical hardship provisions are too restrictive to address their circumstances. For example, engine manufacturers have in some cases delayed delivery of Tier 4 engines until six or even twelve months after the Tier 4 standards start to apply, which could force equipment manufacturers to use up all their allowances under § 1039.625(b) in the first year of the new standards. The maximum number of allowances under § 1039.625(m) would cover a good portion of the second year of the Tier 4 standards, but we have heard how this too is inadequate to allow equipment manufacturers to respond to late deliveries of compliant engines.

As another example where additional flexibility may be warranted, corporate acquisitions can cause equipment manufacturers to find themselves disadvantaged with respect to allowances because two companies have become a single company for purposes of regulatory compliance. Taken to an extreme, the combined company could exceed its allowances under § 1039.625(b) on the day of the merger because each of the separate companies may have used allowances that, taken together, exceed the specified thresholds for a single company. The combined company may apply for technical hardship under § 1039.625(m), but we have seen that this too can provide insufficient relief for equipment manufacturers trying to incorporate Tier 4 engines into their equipment.

In these cases, the maximum allowable relief under § 1039.625(m) is insufficient to allow equipment manufacturers to transition to meeting Tier 4 requirements without

disrupting their ability to continue producing their equipment models. There have also been cases where a company would meet the criteria to qualify for consideration for technical hardship under § 1039.625(m) except that the regulation disallows technical hardship relief for all engines above 560 kW and provides only limited relief for engines above 37 kW. The regulation also provides only limited relief for companies that are not small businesses. In these cases, no additional relief is available under § 1039.625(m), which again leaves equipment manufacturers unable to continue producing their equipment models. We are amending the Transition Program for Equipment Manufacturers in three ways to address these concerns. First, we are removing the qualifying criteria so that any equipment manufacturer may apply for technical hardship relief under § 1039.625(m) for any size engine, rather than limiting the technical hardship relief to small businesses and to engines within certain power categories. We believe it is more appropriate to rely on our discretion to evaluate each hardship application on its merits rather than automatically precluding hardship relief based on certain characteristics of the engine or the company. If hardship relief is not appropriate because of an engine's power rating or a company's size or financial standing, we will not approve the request.

Second, we are removing the maximum number of allowances we can approve under § 1039.625(m), for both percent-of-production (currently 150 percent) and small-volume allowances (currently 1,100 units), and we are removing the deadlines for exercising those additional allowances. We have learned that the specified restrictions on hardship allowances are in some cases too limiting to address the legitimate concerns raised by equipment manufacturers. Again, we believe it is most appropriate to resolve

issues of extent of relief once an equipment manufacturer has demonstrated that relief is appropriate, rather than limiting it *a priori*. We will not approve a greater number of technical hardship allowances than is needed to meet the established objectives. Finally, for additional small-volume allowances under § 1039.625(b)(2) and (m)(4), we may waive the annual limits on the number of allowances instead of or in addition to granting additional hardship allowances. There may be times when manufacturers only need approval to use up their regular allowances at a faster pace than the regulations currently allow.

An additional concern has come to our attention as it relates to marine engines. Vessel manufacturers may use certified land-based engines in marine vessels as long as the engines are not modified from their certified configuration (see § 1042.605). We adopted this provision with the understanding that, given the additional technological challenges of operating engines in a marine environment, marine standards are set to be no more stringent than land-based standards and are often set at a level somewhat less stringent than the standards that apply to the land-based engines. Vessel manufacturers have used these provisions extensively to access a wide range of engine models that are not available in a certified marine configuration. The part 1039 Tier 4 standards have made this more complicated. The Tier 4 standards for most sizes of land-based engines are much more stringent than the Tier 3 marine standards, which will continue to apply for many Category 1 engines. Engine distributors supplying product to vessel manufacturers have reported that several engine models will not be available to them in the transition period. In that way, vessel manufacturers are much like nonroad equipment manufacturers, except that the vessels are not actually required to use engines meeting the

more stringent standards now or, for engines below 600 kW, in the foreseeable future. It would be a natural solution to use allowances under § 1039.625, but the regulations specifically require that vessel manufacturers may use only *certified* land-based engines under § 1042.605. There is a risk that this gap would significantly limit their ability to continue producing vessels in the near term. We are addressing this by revising 40 CFR part 1042 to specifically allow vessel manufacturers to use allowances under § 1039.625 for certain model year 2013 engines installed in marine vessels. This provision does not apply for engines at or below 19 kW, since the land-based and marine standards for those engines are very similar. This provision also does not apply for engines above 600 kW because the dynamic for designing and certifying those high-power engines allows for a greater expectation that they will be certified in a marine configuration. We expect no negative environmental impact because the engines will be meeting the nonroad Tier 3 standards, which will continue to be at least as stringent as the standards that currently apply for marine engines. Since this is only a temporary measure, vessel manufacturers will either need to use Tier 4 land-based engines or find certified Tier 3 marine engines starting with the 2014 model year.

There are further minor changes to the regulations to clarify some of the detailed transition provisions for nonroad diesel engines, as follows:

- Revising § 1039.104(g) to remove the limitations on the number of engines using the specified alternate FEL caps. Manufacturers have pointed out that this expanded flexibility would address the same concerns as described in this section for transitioning to the Tier 4 standards, but there would be no net environmental impact since manufacturers would need to produce low-emission engines that generate

emission credits to offset the additional credits used by transition engines certified to with higher FELs. We are also revising the regulation to specify that the same Temporary Compliance Adjustment Factor is the same whether an engine is subject to NO<sub>x</sub>+NMHC standards or NO<sub>x</sub>-only standards. The revision also addresses Tier 3 carry-over engines that would need to certify to the alternate FEL caps after the Tier 4 final standards take effect.

- Adding text to § 1039.625(e) to clarify that exempted engines may meet standards that are more stringent than those specified in the regulation. This change is intended only to avoid the unintended consequence of disallowing a manufacturer from making an engine that was cleaner than it needed to be. Even though these engines are cleaner than they need to be under the replacement-engine exemption, it is still the case that these engines are being exempted from the standards that apply for certified engines; as such, it would be inappropriate for these engines to generate emission credits.
- Clarifying in § 1039.625(e) which alternate standards apply to exempted engines in cases where there is more than one set of standards in a given model year. For example, the appropriate standards for 19-56 kW engines are the Option 1 standards specified in § 1039.102, and the appropriate standards for bigger engines are the phase-out standards specified in § 1039.102.
- Adjusting the provision for using interim Tier 4 engines under § 1039.625(a)(2) to require that manufacturers use engines that are identical to previously certified engines, rather than requiring that the exempt engines be certified for the new model

year. This addresses an administrative complication related to certifying exempted engines, without changing the requirements that apply.

### **C. Large SI Fuel Line Permeation**

EPA is amending the required version of the SAE procedure for testing large SI fuel line permeation. In 2002 we adopted evaporative emission standards for nonroad spark-ignition engines above 19 kW (Large SI engines) (67 FR 68242, November 8, 2002). This rule included a requirement that engines meet a permeation control standard, that could be demonstrated by using fuel lines compliant with SAE J2260, the latest version of which had been completed in 1996 (see 40 CFR 1048.105). This SAE standard effectively established a level of permeation control that had been widely used with automotive products. In adopting this requirement, we expected manufacturers to find “off-the-shelf” automotive-grade products for the nonroad engines and equipment.

In 2008, we revised this requirement by changing the regulation to reference the 2004 version of SAE J2260, which had been finalized after the initial rulemaking (73 FR 59034, October 8, 2008). As noted in our proposed rule, we understood the purpose and effect of the change in the SAE standard to be substantive with regard to the permeation measurement procedure, but not necessarily with regard to the stringency of the standard. The revised SAE protocol specifies a tighter numerical standard, but this corresponded to an offsetting change from a methanol-based test fuel to an ethanol-based test fuel. Switching to ethanol improves the representativeness of the procedure, and it is widely understood that ethanol permeates through fuel-system materials less aggressively than methanol. It is also clear the fuel change would have a non-uniform effect on different fuel-system materials, but our overall expectation was that fuel lines meeting the 1996

version of the standard would also meet the 2004 version of the standard. Following the proposed rule, we received no comments either supporting or contradicting our understanding that updating to the new standard would have no significant effect on the stringency or practicability of the standard.

Since completing the 2008 rulemaking, we have received information indicating that the revision of the regulation to refer to the newer version of SAE J2260 was having a substantive effect on manufacturers' ability to meet the standard. First, it seems that automotive manufacturers have moved beyond the SAE J2260 standard to develop their own proprietary methods of sourcing fuel lines from their suppliers. Since the evaporative emission standards for automotive products involve whole-vehicle measurements in an enclosure, manufacturers have the option to pursue different strategies of balancing emissions from fuel-line permeation with emissions from other sources. In effect, there is no longer a level of emission control or a type of fuel line that we can characterize simply as "automotive-grade". It is also the case that motor vehicle manufacturers buy fuel lines in large quantities of pre-formed parts, rather than buying large spools of fuel line that can be cut and formed for a particular application.

Second, it appears that fuel line suppliers have a very limited ability or willingness to supply fuel lines that they will describe as meeting the 2004 version of SAE J2260. It is not clear whether this is a result of a difference in stringency between the two versions of the standard, or merely that fuel-line suppliers have moved beyond the SAE standard to conform to separate specifications from individual automotive manufacturers. In any case, Large SI equipment is not manufactured in sufficient numbers to greatly influence the fuel line manufacturers' activities, which has prevented

Large SI equipment manufacturers from being able to find and use fuel lines meeting the exact specification in the regulations.

We are addressing this by again revising the regulation, this time to specify that either the 1996 or 2004 version of SAE J2260 provides an acceptable level of control for producing compliant Large SI engines and equipment. We do not believe this will have a significant effect on the stringency of the standard. However, to the extent that this modifies the stringency of the existing fuel-line permeation standards at all, it only revises it back to the level of permeation control that we adopted originally in 2002. We note also that the regulations from the California Air Resources Board continue to rely on the 1996 version of SAE J2260. This change therefore allows for a unified national approach to fuel-line permeation standards.

#### **D. Small SI Amendments**

Since the first emission standards for small spark-ignition (SI) engines (< 19kW), EPA and the California ARB have required the same basic exhaust emission test procedures and durability aging requirements. Both agencies have accepted exhaust emission test results on either agency's test fuel for purposes of certification. This has traditionally meant that for small SI engines used in either handheld or non-handheld equipment, EPA would accept exhaust emission test results based on either its Indolene test fuel (specified at 40 CFR 1065.710) or on California test fuel (specified at section 2262 in the California Code of Regulations (13 CCR 2262)). In 2008, when EPA promulgated the current small SI exhaust emission standards, the California test fuel, commonly referred to as California Phase 2 gasoline or CA RFG 2, was a seven pound per square inch (psi) Reid Vapor Pressure (RVP) gasoline which had approximately 11

percent methyl tertiary butyl ether (MTBE) as an oxygenate additive. This test fuel had been used in the California small off road emission (SORE) program since 1995.

Our 2008 final rule (73 FR 59034, October 8, 2008) included provisions (see § 1054.145(k)) indicating that EPA would not accept carryover exhaust emission certification data on CA RFG 2 after the 2012 model year. However, we left open the possibility of continuing to accept carryover exhaust emission test data on CA RFG 2 subject to the provisions of 40 CFR 1065.10, 1065.12 and 1065.701, which would permit EPA to approve its continued use if it does not affect the manufacturers' ability to show that the affected engines would comply with all applicable emission standards using the fuel specified by EPA in 40 CFR 1065.710. Manufacturers have recently provided emissions data meeting the regulatory requirements listed above and EPA has permitted the use of CA RFG 2 (California Phase 2 gasoline) for certification for the 2013 model year.<sup>18</sup>

Recently, California adopted new requirements for their gasoline certification test fuel for nonroad engines. Over the period from 2013-2020, manufacturers must transition from CA RFG 2 to a gasoline certification test fuel that contains 10 percent ethanol (E10) and has a seven psi RVP (commonly referred to as California Phase 3 gasoline or CA RFG 3). This new requirement aligns California test fuels with their current in-use gasoline.

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<sup>18</sup> See EPA Dear Manufacturer Letter CD-12-17(NRSSI), October 29, 2012.

Considering this background and recent developments, EPA is making two changes to its current regulatory provisions. First, EPA believes it is appropriate to extend its current practice of accepting exhaust emission test results for small SI engines to include CA RFG 3. For the 2013-2019 model years (inclusive), EPA will accept exhaust emission certification data generated using CA RFG 3 test fuel. Harmonization with California on test procedures and test fuel requirements for small spark-ignition engines has significant value to the engine and equipment manufacturers and users of those products. It allows for development and certification of only one engine for a given model or application by the manufacturer and allows for greater model availability and lower overall cost due to 50-state production. In addition, E10, which is used in CA RFG 3, is common in gasoline sold across the U.S. today. Therefore, permitting the use of CA RFG 3 in emissions certification will allow test fuel to more closely match the in-use fuel used across the U.S. Accounting for the ethanol in the fuel is likely to enhance engine emissions in-use durability, because the presence of oxygen in the ethanol in the test fuel will need to be accommodated in the engine calibrations. This will reduce engine operating temperatures in-use relative to engines calibrated on a test fuel without oxygen.

While EPA is accepting manufacturer use of CA RFG 3 for the purposes of testing, EPA is not prepared to accept use of CA RFG 3 as a fully permissible replacement test fuel for Indolene. Test data indicate that NMHC+NO<sub>x</sub> exhaust emissions using CA RFG 3 will be comparable relative to results on Federal certification fuel. However, due to the presence of an oxygenate (approximately 3 percent) caused by

the inclusion of E10 in CA RFG 3, tested CO emissions will be reduced when an engine is tested using CA RFG 3, compared to Indolene which includes no oxygenates (see 40 CFR 1065.710). EPA's official test fuel is Indolene and the level of the CO emission standards for small SI engines (see 40 CFR 1054.103 and 1054.105) is based on the use of that fuel. Therefore, EPA cannot fully accept test results using CA RFG 3 as showing compliance with EPA CO standards, because CO test emissions showing compliance using CA RFG 3 do not guarantee that an engine will be able to comply with EPA's CO standard using Indolene.

Therefore, EPA will retain the option to conduct any production line, confirmatory, and selective enforcement audit (SEA) testing on EPA test fuel as specified in 40 CFR 1065.710.<sup>19</sup> However, as an option for the manufacturers, to bring some uniformity and certainty to the engine development and calibration, emissions testing, and emissions durability assessment processes, EPA will agree to use CA RFG 3 test fuel for any production line, confirmatory, and SEA testing if a manufacturer(s) agree to meet a lower CO emission standard. These values, which substantially address the effect of oxygenate content on CO emission rates, are 549 g/kW-hr for Classes I and II (non handheld engines) and 536 g/kW-hr for Classes III-V (handheld engines). These values are the same as California's current CO emission standards (based on the use of CA RFG 2); they are 10-33 percent lower (depending on Class) than EPA's CO emission standards (see 40 CFR 1054.103 and 1054.105) because they account for oxygenate

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<sup>19</sup> EPA already requires a ten percent ethanol blend for evaporative emissions testing.

content in that fuel. This does not represent a change in stringency, as the engine designs and calibration will not change, but CO emissions will decrease due to the oxygenate content of the California test fuel. This option would be available for Class I and II marine generators at a CO emission standard of 4.5 g/kW-hr. This value was derived based on the ratio of the California CO emission standards to the Federal emission standards for other Class I and II marine generators. This option is available on a family-by-family basis for all Classes of small SI engines. We consider these CO emission standards to be interim values for purposes of this option only. EPA may revise the level of its CO emission standard in the future if we propose to change the Federal test fuel specifications.

Second, EPA has decided to continue accepting exhaust emissions data on CA RFG 2 after the 2012 model year (see 40 CFR 1054.145(k)). Manufacturers have provided data for both handheld and nonhandheld engines showing equivalent exhaust emission levels between CA RFG 2 and the gasoline specified in 40 CFR 1065.710 (Indolene). Furthermore, the move to CA RFG 3 sets in motion a process to eliminate CA RFG 2 certifications in the future as would have been required under 40 CFR 1054.145(k). Thus, to help enable an orderly and cost effective transition, EPA believes it is appropriate for us to continue to accept exhaust emission test data using CA RFG 2 for certification through the 2019 model year. We will expect engine families certified using CA RFG 2 carryover exhaust emission data to meet emissions standards on both CA RFG 2 and EPA certification test fuel as specified in 40 CFR 1065.710 for any production line, SEA, or confirmatory testing.

Both of these actions apply for certification for model years 2013 to 2019, inclusive. EPA expects to revisit these provisions before 2020 to determine if they should be extended or otherwise modified. The primary EPA program using Indolene test fuel and meeting the current EPA emission standards remains in place for Federal certification for 2013 and beyond unless and until these provisions are otherwise modified.

We are also taking the opportunity to revise the regulatory provision in § 1054.145(c) describing requirements related to altitude kits for handheld engines. We adopted those specifications based on the expectation that the Phase 3 exhaust standards were unchanged from the Phase 2 exhaust standards. As such, the emission standards do not apply at altitudes for which the manufacturer would need to rely on an altitude kit. The regulation should therefore be revised to no longer refer to the manufacturer relying on an altitude kit “to meet emission standards.” This change in the regulations is not intended to change current requirements, but rather simply clarifies the proper relationship of the altitude kit to the certified configuration.

### **III. Statutory and Executive Order Reviews**

#### **A. Executive Order 12866: Regulatory Planning and Review**

Under Executive Order 12866 (58 FR 51735, October 4, 1993), this action is a "significant regulatory action" because it raises issues that may have a potential effect on actions taken or planned by another agency. Accordingly, EPA and NHTSA submitted this action to the Office of Management and Budget (OMB) for review under Executive

Orders 12866 and 13563 (76 FR 3821, January 21, 2011) and any changes made in response to OMB recommendations have been documented in the docket for this action.

This direct final rule merely clarifies and corrects existing regulatory language. The agencies do not believe there will be costs associated with this rule because the costs in this program were previously accounted for under the existing rules (69 FR 38958, June 29, 2004; 73 FR 59034, October 8, 2008; and 76 FR 57106, September 15, 2011). This rule is not anticipated to create additional burdens to the existing requirements. As such, a regulatory impact evaluation or analysis is unnecessary. The agencies also do not expect this rule to have substantial Congressional or public interest.

#### **B. Paperwork Reduction Act**

This action does not impose an information collection burden under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. Burden is defined at 5 CFR 1320.3(b). The information collection requirements to ensure compliance with the provisions in these rules were covered under ICR (2394.02).

The Office of Management and Budget (OMB) has previously approved the information collection requirements contained in the existing heavy-duty greenhouse gas emissions regulations under the provisions of the *Paperwork Reduction Act*, 44 U.S.C. 3501 et seq. and has assigned OMB Control Number 2060–0678. The OMB control numbers for EPA’s regulations in title 40 of the Code of Federal Regulations are listed in 40 CFR part 9.

#### **C. Regulatory Flexibility Act**

The Regulatory Flexibility Act (RFA) as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (Pub. L. 104–121, 110 Stat. 857),

generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

For purposes of assessing the impacts of this rule on small entities, small entity is defined as: (1) a small business as defined by Small Business Administration regulations at 13 CFR 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of these rules on small entities, we concluded that this action will not have a significant economic impact on a substantial number of small entities.

This direct final rule merely corrects and clarifies regulatory provisions. In particular, as already adopted in the heavy-duty vehicle GHG and fuel efficiency rules, EPA and NHTSA are deferring standards for manufacturers meeting the Small Business Administration's definition of small business as described in 13 CFR 121.201.

There are no costs and therefore no regulatory burden associated with this rule. We have therefore concluded that this rule will not increase regulatory burden for affected small entities.

#### **D. National Environmental Policy Act**

NHTSA has analyzed this direct final rule pursuant to the National Environmental Policy Act. This rule corrects technical inconsistencies and adds minor clarifications to the regulatory text of the heavy-duty fuel efficiency program, finalized by rule in August 2011. NHTSA analyzed the environmental impacts of that rule in a Final Environmental Impact Statement (EIS), issued in July 2011. The direct final rule we are issuing today is not anticipated to affect the stringency of the standards finalized in the August 2011 rule or to have environmental impacts other than those identified and analyzed in the Final EIS. Accordingly, today's rule will not have any significant impact on the quality of the human environment. Because no substantial changes have been made to the heavy-duty fuel-efficiency program that are relevant to environmental concerns, and in the absence of significant new circumstances or information relevant to environmental concerns and bearing on this action, NHTSA has concluded that no further action is required under the National Environmental Policy Act.

#### **E. Unfunded Mandates Reform Act**

This action contains no Federal mandates under the provisions of Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), 2 U.S.C. 1531-1538 for State, local, or tribal governments or the private sector. The action imposes no enforceable duty on any State, local or tribal governments or the private sector. Therefore, this action is not subject to the requirements of sections 202 or 205 of the UMRA.

This action is also not subject to the requirements of section 203 of UMRA because it contains no regulatory requirements that might significantly or uniquely affect

small governments.

**F. Executive Order 13132: Federalism**

This action does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. This direct final rule merely corrects and clarifies regulatory provisions. Thus, Executive Order 13132 does not apply to this action.

**G. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments**

This action does not have tribal implications, as specified in Executive Order 13175 (65 FR 67249, November 9, 2000). This direct final rule merely corrects and clarifies regulatory provisions. Tribal governments would be affected only to the extent they purchase and use regulated vehicles. Thus, Executive Order 13175 does not apply to this action.

**H. Executive Order 13045: Protection of Children from Environmental Health and Safety Risks**

This action is not subject to Executive Order 13045 (62 FR 19885, April 23, 1997) because it is not economically significant as defined in Executive Order 12866, and because EPA and NHTSA do not believe the environmental health or safety risks addressed by this action present a disproportionate risk to children. This direct final rule merely corrects and clarifies regulatory provisions.

**I. Executive Order 13211: Actions that Significantly Affect Energy Supply, Distribution, or Use**

This action is not subject to Executive Order 13211 (66 FR 28355, May 22, 2001), because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy. This direct final rule merely corrects and clarifies regulatory provisions.

**J. National Technology Transfer Advancement Act**

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (“NTTAA”), Public Law No. 104-113, 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. NTTAA directs agencies to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

This action slightly expands the use of voluntary consensus standards by adding a reference standard under 40 CFR 1048.105. Other amendments in this direct final rule do not involve application of new technical standards. However, the underlying regulations in many cases rely on voluntary consensus standards. For example, EPA and NHTSA included several voluntary consensus standards in the development of the Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles (76 FR 57106, September 15, 2011).

**K. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations**

Executive Order 12898 (59 FR 7629, February 16, 1994) establishes federal executive policy on environmental justice. Its main provision directs federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States.

EPA and NHTSA have determined that this rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it merely corrects provisions for manufacturers to use to demonstrate compliance of heavy-duty engines and vehicles.

**L. Congressional Review Act**

The Congressional Review Act, 5 U.S.C. 801 et seq., as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA and NHTSA will submit reports containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the Federal Register. A Major rule cannot take effect until 60 days after it is published in the Federal Register. This action is not a “major rule” as defined by 5 U.S.C. 804(2). This

rule will be effective on **[Insert date 60 days from date of publication in the Federal Register]**.

#### **M. Executive Order 12988 (Civil Justice Reform)**

This direct final rule meets applicable standards in sections 3(a) and 3(b)(2) of Executive Order 12988, Civil Justice Reform, to minimize litigation, eliminate ambiguity, and reduce burden.

#### **IV. Statutory Authority**

##### **A. EPA**

Statutory authority for the vehicle controls is found in Clean Air Act section 202(a) (which authorizes standards for emissions of pollutants from new motor vehicles which emissions cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare), sections 202(d), 203-209, 216, and 301 (42 U.S.C. 7521 (a), 7521 (d), 7522, 7523, 7524, 7525, 7541, 7542, 7543, 7550, and 7601).

##### **B. NHTSA**

Statutory authority for the fuel consumption standards is found in section 103 (which authorizes a fuel efficiency improvement program, designed to achieve the maximum feasible improvement to be created for commercial medium- and heavy-duty on-highway vehicles and work trucks, to include appropriate test methods, measurement metrics, standards, and compliance and enforcement protocols that are appropriate, cost-effective and technologically feasible) of the Energy Independence and Security Act of 2007, 49 U.S.C. 32902(k).

#### **List of Subjects**

#### 40 CFR Part 85

Confidential business information, Imports, Labeling, Motor vehicle pollution, Reporting and recordkeeping requirements, Research, Warranties.

#### 40 CFR Part 86

Administrative practice and procedure, Confidential business information, Labeling, Motor vehicle pollution, Reporting and recordkeeping requirements.

#### 40 CFR Part 1036

Administrative practice and procedure, Air pollution control, Confidential business information, Environmental protection, Labeling, Motor vehicle pollution, Reporting and recordkeeping requirements, Warranties.

#### 40 CFR Part 1037

Administrative practice and procedure, Air pollution control, Confidential business information, Environmental protection, Incorporation by reference, Labeling, Motor vehicle pollution, Reporting and recordkeeping requirements, Warranties.

#### 40 CFR Part 1039

Environmental protection, Administrative practice and procedure, Air pollution control, Confidential business information, Imports, Labeling, Penalties, Reporting and recordkeeping requirements, Warranties.

#### 40 CFR Part 1042

Environmental protection, Administrative practice and procedure, Air pollution control, Confidential business information, Imports, Labeling, Penalties, Vessels, Reporting and recordkeeping requirements, Warranties.

#### 40 CFR Part 1048

Environmental protection, Administrative practice and procedure, Air pollution control, Confidential business information, Imports, Incorporation by reference, Labeling, Penalties, Reporting and recordkeeping requirements, Warranties.

#### 40 CFR Part 1054

Environmental protection, Administrative practice and procedure, Air pollution control, Confidential business information, Imports, Labeling, Penalties, Reporting and recordkeeping requirements, Warranties.

#### 40 CFR Part 1065 and 1066

Administrative practice and procedure, Air pollution control, Reporting and recordkeeping requirements, Research.

#### 40 CFR Part 1068

Environmental protection, Administrative practice and procedure, Confidential business information, Imports, Motor vehicle pollution, Penalties, Reporting and recordkeeping requirements, Warranties.

49 CFR Parts 523 and 535

Fuel economy.

For the reasons set forth in the preamble, the Environmental Protection Agency is amending title 40, chapter I of the Code of Federal Regulations as follows:

**PART 85—CONTROL OF AIR POLLUTION FROM MOBILE SOURCES**

1. The authority citation for part 85 continues to read as follows:

Authority: 42 U.S.C. 7401-7671q.

**Subpart F—[Amended]**

2. Section 85.525 is amended by revising paragraph (a)(2)(i) introductory text and adding paragraph (a)(2)(iii) to read as follows:

**§ 85.525 Applicable standards.**

\* \* \* \* \*

(a) \* \* \*

(2) \* \* \*

(i) Subject to the following exceptions and special provisions, compliance with light-duty vehicle greenhouse gas emission standards is demonstrated by complying with the N<sub>2</sub>O and CH<sub>4</sub> standards and provisions set forth in 40 CFR 86.1818–12(f)(1) and the in-use CO<sub>2</sub> exhaust emission standard set forth in 40 CFR 86.1818–12(d) as determined by the OEM for the subconfiguration that is identical to the fuel conversion emission data vehicle (EDV):

\* \* \* \* \*

(iii) Subject to the following exceptions and special provisions, compliance with greenhouse gas emission standards for heavy-duty vehicles subject to 40 CFR 1037.104 is demonstrated by complying with the N<sub>2</sub>O and CH<sub>4</sub> standards and provisions set forth in

40 CFR 1037.104 and the in-use CO<sub>2</sub> exhaust emission standard set forth in 40 CFR 1037.104(b) as determined by the OEM for the subconfiguration that is identical to the fuel conversion emission data vehicle (EDV):

(A) If the OEM complied with alternate standards for N<sub>2</sub>O and/or CH<sub>4</sub>, as allowed under 40 CFR 1037.104(c) you may demonstrate compliance with the same alternate standards.

(B) If you are unable to meet either the N<sub>2</sub>O or CH<sub>4</sub> standards and your fuel conversion CO<sub>2</sub> measured value is lower than the in-use CO<sub>2</sub> exhaust emission standard, you may also convert the difference between the in-use CO<sub>2</sub> exhaust emission standard and the fuel conversion CO<sub>2</sub> measured value into GHG equivalents of CH<sub>4</sub> and/or N<sub>2</sub>O, using 298 g CO<sub>2</sub> to represent 1 g N<sub>2</sub>O, and 25 g CO<sub>2</sub> to represent 1 g CH<sub>4</sub>. You may then subtract the applicable converted values from the fuel conversion measured values of CH<sub>4</sub> and/or N<sub>2</sub>O to demonstrate compliance with the CH<sub>4</sub> and/or N<sub>2</sub>O standards.

(C) You may alternatively comply with the greenhouse gas emission requirements by comparing emissions from the vehicle before and after the fuel conversion. This comparison must be based on FTP test result from the emission data vehicle (EDV) representing the pre-conversion test group. The sum of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O shall be calculated for pre- and post-conversion FTP test results, where CH<sub>4</sub> and N<sub>2</sub>O are weighted by their global warming potentials of 25 and 298, respectively. The post-conversion sum of these emissions must be lower than the pre-conversion greenhouse gas emission result. Calculate CO<sub>2</sub> emissions as specified in 40 CFR 600.113. If we waive N<sub>2</sub>O measurement requirements based on a statement of compliance, disregard N<sub>2</sub>O for all measurements and calculations under this paragraph (a)(2)(iii)(C).

\* \* \* \* \*

**PART 86 – CONTROL OF EMISSIONS FROM NEW AND IN-USE HIGHWAY  
VEHICLES AND ENGINES**

3. The authority citation for part 86 continues to read as follows:

Authority: 42 U.S.C. 7401-7671q.

**Subpart A—[Amended]**

**§ 86.007-23---[Amended]**

4. Section 86.007-23 is amended by removing paragraph (n).

5. Section 86.010-18 is amended by adding paragraph (q)(6) to read as follows:

**§ 86.010-18 On-board Diagnostics for engines used in applications greater than  
14,000 pounds GVWR.**

\* \* \* \* \*

(q) \* \* \*

(6) Manufacturers that modify the engine's diagnostic system from the approved configuration to be compatible with a hybrid powertrain system under this paragraph (q) must add the following compliance statement to the ECI label: "for use in hybrid applications only".

**Subpart S—[Amended]**

**§ 86.1844-01---[Amended]**

6. Section 86.1844-01 is amended by removing paragraph (j).

7. Section 86.1865-12 is amended by:

- a. Revising paragraph (a)(1) introductory text and adding paragraph (a)(1)(ii):
- b. Revising paragraphs (j)(4)(i), (k)(4) introductory text, and (k)(8)(iv)(A); and
- c. Revising paragraphs (l)(1)(i) introductory text, (l)(1)(ii) introductory text, and (l)(3).

The revisions and additions read as follows:

**§ 86.1865-12 How to comply with the fleet average CO<sub>2</sub> standards.**

(a) \* \* \*

(1) Unless otherwise exempted under the provisions of § 86.1801-12(j) or (k), CO<sub>2</sub> fleet average exhaust emission standards of this subpart apply to:

\* \* \* \* \*

(ii) Heavy-duty vehicles subject to standards under 40 CFR 1037.104.

\* \* \* \* \*

(j) \* \* \*

(4) \* \* \*

(i) Manufacturers must report in their annual reports to the Agency that they met the relevant corporate average standard by showing that their production-weighted average CO<sub>2</sub> emission levels of passenger automobiles, light trucks, and heavy-duty vehicles, as applicable, are at or below the applicable fleet average standards; or

\* \* \* \* \*

(k) \* \* \*

(4) Credits are earned on the last day of the model year. Manufacturers must calculate, for a given model year and separately for passenger automobiles, light trucks, and heavy-

duty vehicles (as specified in 40 CFR 1037.104), the number of credits or debits it has generated according to the following equation rounded to the nearest megagram:

\* \* \* \* \*

(8) \* \* \*

(iv) \* \* \*

(A) If a manufacturer ceases production of passenger automobiles, light trucks, or heavy-duty vehicles subject to the standards of 40 CFR 1037.104, the manufacturer continues to be responsible for offsetting any debits outstanding within the required time period. Any failure to offset the debits will be considered a violation of paragraph (k)(8)(i) of this section and may subject the manufacturer to an enforcement action for sale of vehicles not covered by a certificate, pursuant to paragraphs (k)(8)(ii) and (iii) of this section.

\* \* \* \* \*

(l) \* \* \*

(1) \* \* \*

(i) Manufacturers producing any light-duty vehicles, light-duty trucks, or medium-duty passenger vehicles subject to the provisions in this subpart or any heavy-duty vehicles subject to the standards of 40 CFR 1037.104 must establish, maintain, and retain all the following information in adequately organized records for each model year:

\* \* \* \* \*

(ii) Manufacturers producing any passenger automobiles or light trucks subject to the provisions in this subpart and vehicles subject to the standards of 40 CFR 1037.104 must establish, maintain, and retain all the following information in adequately organized records for each passenger automobile or light truck subject to this subpart:

\* \* \* \* \*

(3) Notice of opportunity for hearing. Any voiding of the certificate under paragraph (1)(1)(vi) of this section will be made only after EPA has offered the affected manufacturer an opportunity for a hearing conducted in accordance with § 86.614 and, if a manufacturer requests such a hearing, will be made only after an initial decision by the Presiding Officer.

**PART 1036--CONTROL OF EMISSIONS FROM NEW AND IN-USE HEAVY-DUTY HIGHWAY ENGINES**

8. The authority citation for part 1036 continues to read as follows:

Authority: 42 U.S.C. 7401-7671q.

**Subpart A—[Amended]**

9. Section 1036.5 is amended by revising paragraph (b) to read as follows:

**§ 1036.5 Which engines are excluded from this part's requirements?**

\* \* \* \* \*

(b) Engines installed in heavy-duty vehicles that do not provide motive power are nonroad engines. The provisions of this part therefore do not apply to these engines. See 40 CFR part 1039, 1048, or 1054 for other requirements that apply for these auxiliary engines. See 40 CFR part 1037 for requirements that may apply for vehicles using these engines.

\* \* \* \* \*

**Subpart B—[Amended]**

10. Section 1036.150 is amended by revising paragraphs (d), (g)(2), and (g)(3) to read as follows:

**§ 1036.150 Interim provisions.**

\* \* \* \* \*

(d) Small manufacturers. Manufacturers meeting the small business criteria specified for “Gasoline Engine and Engine Parts Manufacturing” or “Other Engine Equipment Manufacturers” in 13 CFR 121.201 are not subject to the greenhouse gas emission standards in § 1036.108. Qualifying manufacturers must notify the Designated Compliance Officer before importing or introducing into U.S. commerce excluded engines. This notification must include a description of the manufacturer’s qualification as a small business under 13 CFR 121.201. You must label your excluded engines with the statement: “THIS ENGINE IS EXCLUDED UNDER 40 CFR 1036.150(d).”

\* \* \* \* \*

(g) \* \* \*

(2) You may use an assigned additive DF of 0.020 g/hp-hr for N<sub>2</sub>O emissions from any engine.

(3) You may use an assigned additive DF of 0.020 g/hp-hr for CH<sub>4</sub> emissions from any engine.

\* \* \* \* \*

**Subpart C—[Amended]**

11. Section 1036.205 is amended by revising paragraph (e) to read as follows:

**§ 1036.205 What must I include in my application?**

\* \* \* \* \*

(e) Identify the CO<sub>2</sub> FCLs with which you are certifying engines in the engine family; also identify any FELs that apply for CH<sub>4</sub> and N<sub>2</sub>O. The actual U.S.-directed production volume of configurations that have CO<sub>2</sub> emission rates at or below the FCL and CH<sub>4</sub> and N<sub>2</sub>O emission rates at or below the applicable standards or FELs must be at least one percent of your actual (not projected) U.S.-directed production volume for the engine family. Identify configurations within the family that have emission rates at or below the FCL and meet the one percent requirement. For example, if your U.S.-directed production volume for the engine family is 10,583 and the U.S.-directed production volume for the tested rating is 75 engines, then you can comply with this provision by setting your FCL so that one more rating with a U.S.-directed production volume of at least 31 engines meets the FCL. Where applicable, also identify other testable configurations required under § 1036.230(b)(2).

\* \* \* \* \*

12. Section 1036.225 is amended by revising paragraph (f) introductory text to read as follows:

**§ 1036.225 Amending my application for certification.**

\* \* \* \* \*

(f) You may ask us to approve a change to your FEL in certain cases after the start of production, but before the end of the model year. If you change an FEL for CO<sub>2</sub>, your FCL for CO<sub>2</sub> is automatically set to your new FEL divided by 1.03. The changed FEL may not apply to engines you have already introduced into U.S. commerce, except as described in this paragraph (f). You may ask us to approve a change to your FEL in the following cases:

\* \* \* \* \*

**Subpart F—[Amended]**

13. Section 1036.525 is amended by revising paragraph (a) to read as follows:

**§ 1036.525 Hybrid engines.**

(a) If your engine system includes features that recover and store energy during engine motoring operation test the engine as described in paragraph (d) of this section. For purposes of this section, features that recover energy between the engine and transmission are considered related to engine motoring.

\* \* \* \* \*

**Subpart G—[Amended]**

14. Section 1036.615 is amended by revising paragraphs (a) introductory text and (c) to read as follows:

**§ 1036.615 Engines with Rankine cycle waste heat recovery and hybrid powertrains.**

\* \* \* \* \*

(a) Pre-transmission hybrid powertrains. Test pre-transmission hybrid powertrains with

the hybrid engine test procedures of 40 CFR part 1065 or with the post-transmission test procedures in 40 CFR 1037.550. Pre-transmission hybrid powertrains are those engine systems that include features to recover and store energy during engine motoring operation but not from the vehicle's wheels.

\* \* \* \* \*

(c) Calculating credits. Calculate credits as specified in subpart H of this part. Credits generated from engines and powertrains certified under this section may be used in other averaging sets as described in § 1036.740(c).

\* \* \* \* \*

**Subpart I—[Amended]**

15. Section 1036.801 is amended by adding a definition for “Preliminary approval” in alphabetical order to read as follows:

**§ 1036.801 Definitions.**

\* \* \* \* \*

Preliminary approval means approval granted by an authorized EPA representative prior to submission of an application for certification, consistent with the provisions of § 1036.210.

\* \* \* \* \*

**PART 1037—CONTROL OF EMISSIONS FROM NEW HEAVY-DUTY MOTOR VEHICLES**

16. The authority citation for part 1037 continues to read as follows:

Authority: 42 U.S.C. 7401-7671q.

**Subpart A—[Amended]**

17. Section 1037.15 is amended by revising paragraph (c) to read as follows:

**§ 1037.15 Do any other regulation parts apply to me?**

\* \* \* \* \*

(c) Part 86 of this chapter applies for certain vehicles as specified in this part. For example, the test procedures and most of part 86, subpart S, apply for vehicles subject to § 1037.104; including the following paragraphs of 40 CFR 86.1865-12 apply: (a), (h)(1), (h)(3), (j)(1), (j)(4), (k)(1) through (4), (k)(7)(ii), (k)(8), (k)(9), (l)(1), (l)(2)(i), (l)(2)(ii), (l)(2)(vi) through (viii), and (l)(3).

\* \* \* \* \*

**Subpart B—[Amended]**

18. Section 1037.104 is amended by revising paragraphs (a)(2) introductory text, (d)(2), (d)(4), (d)(6), (d)(9), (d)(12), (d)(13), and (g) and adding paragraph (d)(15) to read as follows:

**§ 1037.104 Exhaust emission standards for CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O for heavy-duty vehicles at or below 14,000 pounds GVWR.**

\* \* \* \* \*

(a) \* \* \*

(2) Using the appropriate work factor, calculate a target value for each vehicle subconfiguration (or group of subconfigurations allowed under paragraph (a)(4) of this section) you produce using one of the following equations, or the phase-in provisions in § 1037.150(b), rounding to the nearest 0.1 g/ mile:

\* \* \* \* \*

(d) \* \* \*

(2) The following general credit provisions apply:

(i) Credits you generate under this section may be used only to offset credit deficits under this section. You may bank credits for use in a future model year in which your average CO<sub>2</sub> level exceeds the standard. You may trade credits to another manufacturer according to 40 CFR 86.1865-12(k)(8). Before you bank or trade credits, you must apply any available credits to offset a deficit if the deadline to offset that credit deficit has not yet passed.

(ii) Vehicles subject to the standards of this section are included in a single greenhouse gas averaging set separate from any averaging set otherwise included in 40 CFR part 86.

(iii) Banked CO<sub>2</sub> credits keep their full value for five model years after the year in which they were generated. Unused credits expire at the end of this fifth model year.

\* \* \* \* \*

(4) The CO<sub>2</sub>, N<sub>2</sub>O, and CH<sub>4</sub> standards apply for a weighted average of the city (55%) and highway (45%) test cycle results. Note that this differs from the way the criteria pollutant standards apply for heavy-duty vehicles.

\* \* \* \* \*

(6) Credits are calculated using the useful life value (in miles) in place of “vehicle lifetime miles” specified in 40 CFR part 86, subpart S. Calculate a total credit or debit balance in a model year by adding credits and debits from 40 CFR 86.1865-12(k)(4), subtracting any CO<sub>2</sub>-equivalent debits for N<sub>2</sub>O or CH<sub>4</sub> calculated according to §1037.104(c), and adding any of the following credits:

- (i) Advanced technology credits according to paragraph (d)(7) of this section and § 1037.150(i).
- (ii) Innovative technology credits according to paragraph (d)(13) of this section.
- (iii) Early credits according to § 1037.150(a)(2).

\* \* \* \* \*

(9) Calculate your fleet-average emission rate consistent with good engineering judgment and the provisions of 40 CFR 86.1865. The following additional provisions apply:

- (i) Unless we approve a lower number, you must test at least ten subconfigurations. If you produce more than 100 subconfigurations in a given model year, you must test at least 25 subconfigurations or ten percent of your subconfigurations (whichever is less). For purposes of this paragraph (d)(9)(i), count carryover tests, but do not include analytically derived CO<sub>2</sub> emission rates, data substitutions, or other untested allowances. We may approve a lower number of tests for manufacturers that have limited product offerings or low sales volumes. Note that good engineering judgment and other provisions of this part may require you to test more subconfigurations than these minimum values.

- (ii) The provisions of paragraph (g) of this section specify how you may use analytically derived CO<sub>2</sub> emission rates.
- (iii) All final production volume at the subconfiguration level must be represented by test data (real, data substituted, or analytical).
- (iv) Perform fleet-average CO<sub>2</sub> calculations as described in 40 CFR 86.1865 and 40 CFR part 600, with the following exceptions:
  - (A) Use CO<sub>2</sub> emissions values for all test results, intermediate calculations, and fleet average calculations instead of the carbon-related exhaust emission (CREE) values specified in 40 CFR parts 86 and 600.
  - (B) Perform intermediate CO<sub>2</sub> calculations for subconfigurations within each configuration using the subconfiguration and configuration definitions in paragraph (d)(12) of this section.
  - (C) Perform intermediate CO<sub>2</sub> calculations for configurations within each test group and transmission type (instead of configurations within each base level and base levels within each model type). Use the configuration definition in paragraph (d)(12)(i) of this section.
  - (D) Do not perform intermediate CO<sub>2</sub> calculations for each base level or for each model type. Base level and model type CO<sub>2</sub> calculations are not applicable to heavy-duty vehicles subject to standards in this section.
  - (E) Determine fleet average CO<sub>2</sub> emissions for heavy-duty vehicles subject to standards in this section as described in 40 CFR 600.510-12(j), except that the calculations must be performed on the basis of test group and transmission type (instead of the model-type basis specified in the light-duty vehicle regulations),

and the calculations for dual fuel, multi-fuel, and flexible fuel vehicles must be consistent with the provisions of paragraph (d)(10)(i) of this section.

\* \* \* \* \*

(12) The following definitions apply for the purposes of this section:

(i) Configuration means a subclassification within a test group based on engine code, transmission type and gear ratios, final drive ratio, and other parameters we designate. Transmission type means the basic type of the transmission (e.g., automatic, manual, automated manual, semi-automatic, or continuously variable) and does not include the drive system of the vehicle (e.g., front-wheel drive, rear-wheel drive, or four-wheel drive). Engine code means the combination of both “engine code” and “basic engine” as defined in 40 CFR 600.002. Note that this definition differs from the one in 40 CFR 86.1803.

(ii) Subconfiguration means a unique combination within a vehicle configuration (as defined in this paragraph (d)(12)) of equivalent test weight, road-load horsepower, and any other operational characteristics or parameters that we determine may significantly affect CO<sub>2</sub> emissions within a vehicle configuration. Note that for vehicles subject to standards of this section, equivalent test weight (ETW) is based on the ALVW of the vehicle as outlined in paragraph (d)(11) of this section.

(iii) The terms “complete vehicle” and “incomplete vehicle” have the meanings given for “complete heavy-duty vehicle” and “incomplete heavy-duty vehicle”, respectively, in 40 CFR 86.1803.

(13) This paragraph (d)(13) applies for CO<sub>2</sub> reductions resulting from technologies that were not in common use before 2010 that are not reflected in the specified test

procedures. We may allow you to generate emission credits consistent with the provisions of 40 CFR 86.1869-12(c) and (d). You do not need to provide justification for not using the 5-cycle methodology.

\* \* \* \* \*

(15) You must submit a final report within 90 days after the end of the model year.

Unless we specify otherwise, include applicable information identified in 40 CFR 86.1865-12(l), 40 CFR 600.512, and 49 CFR 535.8(e). The final report must include at least the following information:

- (i) Model year.
- (ii) Applicable fleet-average CO<sub>2</sub> standard.
- (iii) Calculated fleet-average CO<sub>2</sub> value and all the values required to calculate the CO<sub>2</sub> value.
- (iv) Number of credits or debits incurred and all values required to calculate those values.
- (v) Resulting balance of credits or debits.
- (vi) N<sub>2</sub>O emissions.
- (vii) CH<sub>4</sub> emissions.
- (viii) HFC leakage score.

\* \* \* \* \*

(g) Analytically derived CO<sub>2</sub> emission rates (ADCs). This paragraph (g) describes an allowance to use estimated (*i.e.*, analytically derived) CO<sub>2</sub> emission rates based on baseline test data instead of measured emission rates for calculating fleet-average emissions. Note that

these ADCs are similar to ADFEs used for light-duty vehicles. Note also that F terms used in this paragraph (g) represent coefficients from the following road load equation:

$$\text{Force} = (\text{mass})(\text{acceleration}) = F_0 + F_1 \cdot (\text{velocity}) + F_2 \cdot (\text{velocity})^2$$

(1) Except as specified in paragraph (g)(2) of this section, use the following equation to calculate the ADC of a new vehicle from road load force coefficients (F0, F1, F2), axle ratio, and test weight :

$$\text{ADC} = \text{CO}_{2\text{base}} + 2.18 \cdot \Delta F_0 + 37.4 \cdot \Delta F_1 + 2257 \cdot \Delta F_2 + 189 \cdot \Delta AR + 0.0222 \cdot \Delta ETW$$

Where:

ADC = Analytically derived combined city/highway CO<sub>2</sub> emission rate (g/mile) for a new vehicle.

CO<sub>2base</sub>= Combined city/highway CO<sub>2</sub> emission rate (g/mile) of a baseline vehicle.

ΔF0 = F0 of the new vehicle – F0 of the baseline vehicle.

ΔF1 = F1 of the new vehicle – F1 of the baseline vehicle.

ΔF2 = F2 of the new vehicle – F2 of the baseline vehicle.

ΔAR = Axle ratio of the new vehicle – axle ratio of the baseline vehicle.

ΔETW = ETW of the new vehicle – ETW of the baseline vehicle.

(2) The purpose of this section is to accurately estimate CO<sub>2</sub> emission rates.

(i) You must apply the provisions of this section consistent with good engineering judgment. For example, do not use the equation in paragraph (g)(1) of this section where good engineering judgment indicates that it will not accurately estimate emissions. You may ask us to approve alternate equations that allow you to estimate emissions more accurately.

- (ii) The analytically derived CO<sub>2</sub> equation in paragraph (g)(1) of this section may be periodically updated through publication of an EPA guidance document to more accurately characterize CO<sub>2</sub> emission levels' for example, changes may be appropriate based on new test data, future technology changes, or to changes in future CO<sub>2</sub> emission levels. Any EPA guidance document will determine the model year that the updated equation takes effect. We will issue guidance no later than eight months before the effective model year. For example, for 2014 models, the model year may start January 2, 2013, so guidance would be issued by May 1, 2012 for model year 2014.
- (3) You may select, without our advance approval, baseline test data if they meet all the following criteria:
- (i) Vehicles considered for the baseline test must comply with all applicable emission standards in the model year associated with the ADC.
  - (ii) You must include in the pool of tests considered for baseline selection all official tests of the same or equivalent basic engine, transmission class, engine code, transmission code, engine horsepower, dynamometer drive wheels, and compression ratio as the ADC subconfiguration. Do not include tests in which emissions exceed any applicable standard.
  - (iii) Where necessary to minimize the CO<sub>2</sub> adjustment, you may supplement the pool with tests associated with worst-case engine or transmission codes and carryover or carry-across engine families. If you do, all the data that qualify for inclusion using the elected worst-case substitution (or carryover or carry-across) must be included in the pool as supplemental data (*i.e.*, individual test vehicles may not be selected for

inclusion). You must also include the supplemental data in all subsequent pools, where applicable.

(iv) Except with our advance approval, tests previously used during the subject model year as baseline tests in 20 other ADC subconfigurations must be eliminated from the pool.

(v) Select the tested subconfiguration with the smallest absolute difference between the ADC and the test CO<sub>2</sub> emission rate for combined emissions. Use this as the baseline test for the target ADC subconfiguration.

(4) You may ask us to allow you to use baseline test data not fully meeting the provisions of paragraph (g)(3) of this section.

(5) Calculate the ADC rounded to the nearest 0.1 g/mile. Except with our advance approval, the downward adjustment of ADC from the baseline is limited to ADC values 20 percent below the baseline emission rate. The upward adjustment is not limited.

(6) You may not submit an ADC if an actual test has been run on the target subconfiguration during the certification process or on a development vehicle that is eligible to be declared as an emission-data vehicle.

(7) [Reserved]

(8) Keep the following records for at least five years, and show them to us if we ask to see them:

(i) The pool of tests.

(ii) The vehicle description and tests chosen as the baseline and the basis for the selection.

(iii) The target ADC subconfiguration.

(iv) The calculated emission rates.

(9) We may perform or order a confirmatory test of any subconfiguration covered by an ADC.

(10) Where we determine that you did not fully comply with the provisions of this paragraph (g), we may require that you comply based on actual test data and that you recalculate your fleet-average emission rate.

\* \* \* \* \*

19. Section 1037.115 is amended by revising paragraph (c) introductory text and removing and reserving paragraph (c)(2) to read as follows:

**§ 1037.115 Other requirements.**

\* \* \* \* \*

(c) Air conditioning leakage. Loss of refrigerant from your air conditioning systems may not exceed 1.50 percent per year, except as allowed by paragraph (c)(3) of this section. Calculate the total leakage rate in g/year as specified in 40 CFR 86.1867-12(a). Calculate the percent leakage rate as:  $[\text{total leakage rate (g/yr)}] \div [\text{total refrigerant capacity (g)}] \times 100$ . Round your leakage rate to the nearest one-hundredth of a percent. See § 1037.150 for vocational vehicles.

\* \* \* \* \*

20. Section 1037.135 is amended by revising paragraphs (c)(5) and (c)(9) to read as follows:

**§ 1037.135 Labeling.**

\* \* \* \* \*

(c) \* \* \*

(5) State the date of manufacture [DAY (optional), MONTH, and YEAR]. You may omit this from the label if you stamp, engrave, or otherwise permanently identify it elsewhere on the vehicle, in which case you must also describe in your application for certification where you will identify the date on the vehicle.

\* \* \* \*

(9) Include the following statement for vehicles with an evaporative canister for controlling diurnal emissions: “THIS VEHICLE IS DESIGNED TO COMPLY WITH EVAPORATIVE EMISSION STANDARDS WITH UP TO x GALLONS OF FUEL TANK CAPACITY.” Complete this statement by identifying the maximum specified fuel tank capacity associated with your certification.

\* \* \* \* \*

21. Section 1037.150 is amended by revising paragraphs (a)(2), (l) introductory text, and (l)(1) to read as follows:

**§ 1037.150 Interim provisions.**

\* \* \* \* \*

(a) \* \* \*

(2) This paragraph (a)(2) applies for regulatory sub-categories subject to the standards of § 1037.104. To generate early credits under this paragraph (a)(2) for any vehicles other than electric vehicles, you must certify your entire U.S.-directed fleet to these standards. If you calculate a separate fleet average for advanced-technology vehicles under §

1037.104(c)(7), you must certify your entire U.S.-directed production volume of both advanced and conventional vehicles within the fleet. Except as specified in paragraph (a)(4) of this section, if some test groups are certified after the start of the model year, you may generate credits only for production that occurs after all test groups are certified. For example, if you produce three test groups in an averaging set and you receive your certificates for those test groups on January 4, 2013, March 15, 2013, and April 24, 2013, you may not generate credits for model year 2013 for vehicles from any of the test groups produced before April 24, 2013. Calculate credits relative to the standard that would apply in model year 2014 using the applicable equations in 40 CFR part 86 and your model year 2013 U.S.-directed production volumes. These credits may be used to show compliance with the standards of this part for 2014 and later model years. We recommend that you notify us of your intent to use this provision before submitting your applications.

\* \* \* \* \*

(l) Optional certification under § 1037.104. You may certify certain complete or cab-complete vehicles to the standards of § 1037.104. All vehicles optionally certified under this paragraph (l) are deemed to be subject to the standards of § 1037.104. Note that for vehicles above 14,000 pounds GVWR and at or below 26,000 pounds GVWR, certification under this paragraph (l) does not affect how you may or may not certify with respect to criteria pollutants. For example, certifying a Class 4 vehicle under this paragraph (l) does not allow you to chassis-certify these vehicles with respect to criteria pollutants.

(1) You may certify any complete or cab-complete spark-ignition vehicles above 14,000 pounds GVWR and at or below 26,000 pounds GVWR to the standards of § 1037.104 even though § 1037.104 specifies that you may certify vehicles to the standards of that section only if they are chassis-certified for criteria pollutants.

\* \* \* \* \*

**Subpart C—[Amended]**

22. Section 1037.201 is amended by revising paragraph (g) to read as follows:

**§ 1037.201 General requirements for obtaining a certificate of conformity.**

\* \* \* \* \*

(g) We may perform confirmatory testing on your vehicles; for example, we may test vehicles to verify drag areas or other GEM inputs. This includes vehicles used to determine  $F_{\text{alt-aero}}$  under § 1037.521. We may require you to deliver your test vehicles to a facility we designate for our testing. Alternatively, you may choose to deliver another vehicle that is identical in all material respects to the test vehicle. Where certification is based on testing components such as tires, we may require you to deliver test components to a facility we designate for our testing.

23. Section 1037.230 is amended by revising paragraph (a)(1)(xiii) and adding paragraph

(a)(1)(xiv) to read as follows:

**§ 1037.230 Vehicle families, sub-families, and configurations.**

(a) \* \* \*

(1) \* \* \*

(xiii) Vocational tractors above 26,000 pounds GVWR and at or below 33,000 pounds GVWR. Note that vocational tractor provisions do not apply for vehicles at or below 26,000 pounds GVWR.

(xiv) Vocational tractors above 33,000 pounds GVWR.

\* \* \* \* \*

**Subpart F—[Amended]**

24. Section 1037.501 is amended by revising paragraph (g)(1)(iv) to read as follows:

**§ 1037.501 General testing and modeling provisions.**

\* \* \* \* \*

(g) \* \* \*

(1) \* \* \*

(iv) It includes dual 22.5 inch wheels, standard mudflaps, and standard landing gear. The centerline of the rear tandem axle must be 146 +/- 4 inches from the rear of the trailer.

\* \* \* \* \*

25. Section 1037.520 is amended by revising the section heading, the introductory text,

Table 1 in paragraph (b)(2), and paragraph (e)(1) before the table to read as follows:

**§ 1037.520 Modeling CO<sub>2</sub> emissions to show compliance.**

This section describes how to use the Greenhouse gas Emissions Model (GEM) simulation tool (incorporated by reference in § 1037.810) to show compliance with the

CO<sub>2</sub> standards of §§ 1037.105 and 1037.106. Use good engineering judgment when demonstrating compliance using the GEM.

\* \* \* \* \*

(b) \* \* \*

(2) \* \* \*

Table 1 to § 1037.520—High-Roof Day and Sleeper Cabs

High-Roof Day Cabs		
Bin Level	If your measured C <sub>D</sub> A (m <sup>2</sup> ) is . . .	Then your C <sub>D</sub> input is . . .
Bin I	≥ 8.0	0.79
Bin II	7.1-7.9	0.72
Bin III	6.2-7.0	0.63
Bin IV	5.6-6.1	0.56
Bin V	≤ 5.5	0.51
High-Roof Sleeper Cabs		
Bin Level	If your measured C <sub>D</sub> A (m <sup>2</sup> ) is . . .	Then your C <sub>D</sub> input is . . .
Bin I	≥ 7.6	0.75
Bin II	6.8-7.5	0.68
Bin III	6.3-6.7	0.60
Bin IV	5.6-6.2	0.52
Bin V	≤ 5.5	0.47

\* \* \* \* \*

(e) \* \* \*

(1) Vehicle weight reduction inputs for wheels are specified relative to dual-wide tires with conventional steel wheels. For purposes of this paragraph (e)(1), a light-weight aluminum wheel is one that weighs at least 21 pounds less than a comparable conventional steel wheel. The inputs are listed in Table 3 to this section. For example, a

tractor with aluminum steer wheels and eight (4x2) dual-wide aluminum drive wheels would have an input of 210 pounds (2x21 + 8x21).

\* \* \* \* \*

26. Section 1037.525 is amended by revising the introductory text to read as follows:

**§ 1037.525 Special procedures for testing hybrid vehicles with power take-off.**

This section describes the procedure for quantifying the reduction in greenhouse gas emissions as a result of running power take-off (PTO) devices with a hybrid powertrain.

The procedures are written to test the PTO by ensuring that the engine produces all of the energy with no net change in stored energy. The full test for the hybrid vehicle is from a fully charged renewable energy storage system (RESS) to a depleted RESS and then back to a fully charged RESS. These procedures may be used for testing any hybrid architecture for which you are requesting a vehicle certificate using either chassis testing or powertrain testing. You must include all hardware for the PTO system. You may ask us to modify the provisions of this section to allow testing hybrid vehicles other than electric-battery hybrids, consistent with good engineering judgment.

\* \* \* \* \*

27. Section 1037.550 is amended by revising the section heading, the introductory text, and paragraphs (d) through (g) to read as follows:

**§ 1037.550 Special procedures for testing hybrid systems.**

This section describes the procedure for simulating a chassis test with a pre-transmission or post-transmission hybrid system for A to B testing. These procedures may also be used to perform A to B testing with non-hybrid systems.

\* \* \* \* \*

(d) Calculate the transmission output shaft's angular speed target for the driver model,  $f_{\text{nref,driver}}$ , from the linear speed associated with the vehicle cycle using the following equation:

$$f_{\text{nref,driver}} = \frac{v_{\text{cycle}i} \cdot k_d}{2 \cdot \pi \cdot r}$$

Where:

$v_{\text{cycle}i}$  = vehicle speed of the test cycle for each point,  $i$ , starting from  $i=1$ .

$k_d$  = final drive ratio (the angular speed of the transmission output shaft divided by the angular speed of the drive axle), as declared by the manufacturer.

$r$  = radius of the loaded tires, as declared by the manufacturer.

(e) Use speed control with a loop rate of at least 100 Hz to program the dynamometer to follow the test cycle, as follows:

(1) Calculate the transmission output shaft's angular speed target for the dynamometer,  $f_{\text{nref,dyno}}$ , from the measured linear speed at the dynamometer rolls using the following equation:

$$f_{\text{nref,dyno}} = \frac{v_{\text{ref}i} \cdot k_d}{2 \cdot \pi \cdot r}$$

Where:

$$v_{\text{ref}i} = \left( \frac{k_d \cdot T_{i-1}}{r} - (A + B \cdot v_{\text{ref},i-1} + C \cdot v_{\text{ref},i-1}^2) - F_{\text{brake},i-1} \right) \frac{t_i - t_{i-1}}{M} + v_{\text{ref},i-1}$$

$T$  = instantaneous measured torque at the transmission output shaft.

$F_{\text{brake}}$  = instantaneous brake force applied by the driver model to add force to slow down the vehicle.

$t$  = elapsed time in the driving schedule as measured by the dynamometer, in seconds.

(2) For each test, validate the measured transmission output shaft's speed with the corresponding reference values according to 40 CFR 1065.514(e). You may delete points when the vehicle is stopped. Perform the validation based on speed values at the transmission output shaft. For steady-state tests (55 mph and 65 mph cruise), apply cycle-validation criteria by treating the sampling periods from the two tests as a continuous sampling period. Perform this validation based on the following parameters:

Table 1 of § 1037.550 – Statistical criteria for validating duty cycles

Parameter	Speed Control
Slope, $a_1$	$0.950 \leq a_1 \leq 1.030$
Absolute value of intercept, $ a_0 $	$\leq 2.0$ % of maximum test speed
Standard error of estimate, $SEE$	$\leq 5$ % of maximum test speed
Coefficient of determination, $r^2$	$\geq 0.970$

(f) Send a brake signal when throttle position is equal to zero and vehicle speed is greater than the reference vehicle speed from the test cycle. Set a delay before changing the brake state to prevent the brake signal from dithering, consistent with good engineering judgment.

(g) The driver model should be designed to follow the cycle as closely as possible and must meet the requirements of § 1037.510 for steady-state testing and 40 CFR 1066.430(e) for transient testing. The driver model should be designed so that the brake and throttle are not applied at the same time.

\* \* \* \* \*

**Subpart G—[Amended]**

28. Section 1037.615 is amended by revising paragraph (b)(1), redesignating paragraph (b)(3) as (b)(4), and adding a new paragraph (b)(3) to read as follows:

**§ 1037.615 Hybrid vehicles and other advanced technologies.**

\* \* \* \* \*

(b) \* \* \*

(1) Measure the effectiveness of the advanced system by chassis testing a vehicle equipped with the advanced system and an equivalent conventional vehicle, or by testing the hybrid systems and the equivalent non-hybrid systems as described in § 1037.550. Test the vehicles as specified in subpart F of this part. For purposes of this paragraph (b), a conventional vehicle is considered to be equivalent if it has the same footprint (as defined in 40 CFR 86.1803), vehicle service class, aerodynamic drag, and other relevant factors not directly related to the hybrid powertrain. If you use § 1037.525 to quantify the benefits of a hybrid system for PTO operation, the conventional vehicle must have the same number of PTO circuits and have equivalent PTO power. If you do not produce an equivalent vehicle, you may create and test a prototype equivalent vehicle. The

conventional vehicle is considered Vehicle A and the advanced vehicle is considered Vehicle B. We may specify an alternate cycle if your vehicle includes a power take-off.

\* \* \* \* \*

(3) If you apply an improvement factor to multiple vehicle configurations using the same advanced technology, use the vehicle configuration with the smallest potential reduction in greenhouse gas emissions resulting from the hybrid capability.

\* \* \* \* \*

29. Section 1037.620 is amended by revising paragraph (a)(3) to read as follows:

**§ 1037.620 Shipment of incomplete vehicles to secondary vehicle manufacturers.**

\* \* \* \* \*

(a) \* \* \*

(3) Uncertified vehicles that will be certified by secondary vehicle manufacturers.

Manufacturers may introduce into U.S. commerce partially complete vehicles for which they do not hold a certificate of conformity only as allowed by paragraph (b) of this section; however, the requirements of this section do not apply if vehicles produced by a secondary vehicle manufacturer are excluded from the standards of this part under § 1037.150(c).

\* \* \* \* \*

30. Section 1037.660 is amended by revising the introductory text and paragraph (c) to read as follows:

**§ 1037.660 Automatic engine shutdown systems.**

This section specifies requirements that apply for certified automatic engine shutdown (AES) systems modeled under § 1037.520. It does not apply for AES systems you do not model under § 1037.520.

\* \* \* \* \*

- (c) Adjustments to AES systems. (1) The AES system may include an expiration point (in miles) after which the AES system may be disabled. If your vehicle is equipped with an AES system that expires before 1,259,000 miles, adjust the model input as follows, rounded to the nearest 0.1 g/ton-mile:  $\text{AES Input} = 5 \text{ g CO}_2/\text{ton-mile} \times (\text{miles at expiration}/1,259,000 \text{ miles})$
- (2) For AES systems designed to limit idling to a specific number of hours less than 1,800 hours over any 12-month period, calculate an adjusted AES input using the following equation, rounded to the nearest 0.1 g/ton-mile:  $\text{AES Input} = 5 \text{ g CO}_2/\text{ton-mile} \times (1 - (\text{maximum allowable number of idling hours per year}/1,800 \text{ hours}))$ . This is an annual allowance that starts when the vehicle is new and resets every 12 months after that. Manufacturers may propose an alternative method based on operating hours or miles instead of years.

\* \* \* \* \*

### **Subpart H—[Amended]**

31. Section 1037.745 is amended by revising the section heading and adding paragraph (d) to read as follows:

#### **§ 1037.745 End-of-year CO<sub>2</sub> credit deficits.**

\* \* \* \* \*

(d) For purposes of calculating the statute of limitations, the following actions are all considered to occur at the expiration of the deadline for offsetting debits as specified in paragraph (a) of this section:

- (1) Failing to meet the requirements of paragraph (a) of this section.
- (2) Failing to satisfy the conditions upon which a certificate was issued relative to offsetting debits.
- (3) Selling, offering for sale, introducing or delivering into U.S. commerce, or importing vehicles that are found not to be covered by a certificate as a result of failing to offset debits.

#### **Subpart I—[Amended]**

32. Section 1037.801 is amended by adding a definition for “Preliminary approval” in alphabetical order and revising the definition for “Regulatory sub-category” to read as follows:

#### **§ 1037.801 Definitions.**

\* \* \* \* \*

Preliminary approval means approval granted by an authorized EPA representative prior to submission of an application for certification, consistent with the provisions of § 1037.210.

\* \* \* \* \*

Regulatory sub-category means one of the following groups:

(1) All vehicles subject to the standards of § 1037.104. Note that this category includes most gasoline-fueled and diesel-fueled heavy-duty pickup trucks and vans.

(2) [Reserved]

(3) Vocational vehicles at or below 19,500 pounds GVWR.

(4) Vocational vehicles above 19,500 pounds GVWR but at or below 33,000 pounds GVWR.

(5) Vocational vehicles over 33,000 pounds GVWR.

(6) Low-roof tractors above 26,000 pounds GVWR but at or below 33,000 pounds GVWR.

(7) Mid-roof tractors above 26,000 pounds GVWR but at or below 33,000 pounds GVWR.

(8) High-roof tractors above 26,000 pounds GVWR but at or below 33,000 pounds GVWR.

(9) Low-roof day cab tractors above 33,000 pounds GVWR.

(10) Low-roof sleeper cab tractors above 33,000 pounds GVWR.

(11) Mid-roof day cab tractors above 33,000 pounds GVWR.

(12) Mid-roof sleeper cab tractors above 33,000 pounds GVWR.

(13) High-roof day cab tractors above 33,000 pounds GVWR.

(14) High-roof sleeper cab tractors above 33,000 pounds GVWR.

\* \* \* \* \*

33. Section 1037.805 is amended by adding an entry for “AES” in alphabetical order to read as follows:

**§ 1037.805 Symbols, acronyms, and abbreviations.**

\* \* \* \* \*

AES Automatic engine shutdown.

\* \* \* \* \*

34. Section 1037.810 is amended by revising paragraph (c)(1) to read as follows:

**§ 1037.810 Incorporation by reference.**

\* \* \* \* \*

(c) \* \* \*

(1) Greenhouse gas Emissions Model (GEM) simulation tool, Version 2.0.1, September 2012; IBR approved for § 1037.520. The computer code for this model is available as noted in paragraph (a) of this section. A working version of this software is also available for download at <http://www.epa.gov/otaq/climate/gem.htm>.

\* \* \* \* \*

**PART 1039--CONTROL OF EMISSIONS FROM NEW AND IN-USE NONROAD COMPRESSION-IGNITION ENGINES**

35. The authority citation for part 1039 continues to read as follows:

Authority: 42 U.S.C. 7401-7671q.

**Subpart B—[Amended]**

36. Section 1039.104 is amended by revising paragraph (g) to read as follows:

**§ 1039.104 Are there interim provisions that apply only for a limited time?**

\* \* \* \* \*

(g) Alternate FEL caps. You may certify engines to the FEL caps in Table 1 of this section instead of the otherwise applicable FEL caps in § 1039.101(d)(1), § 1039.102(e), or § 1039.102(g)(2) for the indicated model years, subject to the following provisions:

(1) [Reserved]

(2) If your engine is not certified to transient emission standards under the provisions of § 1039.102(a)(1)(iii), you must adjust your FEL upward by a temporary compliance adjustment factor (TCAF) before calculating your negative emission credits under § 1039.705, as follows:

(i) The temporary compliance adjustment factor for NO<sub>x</sub> and for NO<sub>x</sub>+NMHC is 1.1.

(ii) The temporary compliance adjustment factor for PM is 1.5.

(iii) The adjusted FEL ( $FEL_{adj}$ ) for calculating emission credits is determined from the steady-state FEL ( $FEL_{ss}$ ) using the following equation:

$$FEL_{adj} = (FEL_{ss}) \times (TCAF)$$

(iv) The unadjusted FEL ( $FEL_{ss}$ ) applies for all purposes other than credit calculation.

(3) These alternate FEL caps may not be used for phase-in engines.

(4) Do not apply TCAFs to gaseous emissions for phase-out engines that you certify to the same numerical standards (and FELs if the engines are certified using ABT) for gaseous pollutants as you certified under the Tier 3 requirements of 40 CFR part 89.

Table 1 of § 1039.104—Alternate FEL Caps

Maximum engine power	PM FEL cap, g/kW-hr	Model years for the alternate PM FEL cap	NOx FEL cap, g/kW-hr <sup>1</sup>	Model years for the alternate NOx FEL cap
19 ≤ kW < 56	0.30	2012–2015 <sup>2</sup>		
56 ≤ kW < 130 <sup>3</sup>	0.30	2012–2015	3.8	2012–2015 <sup>4</sup>
130 ≤ kW ≤ 560	0.20	2011–2014	3.8	2011–2014 <sup>5</sup>
kW > 560 <sup>6</sup>	0.10	2015–2018	3.5	2015–2018

<sup>1</sup>The FEL cap for engines demonstrating compliance with a NOx+NMHC standard is equal to the previously applicable NOx+NMHC standard specified in 40 CFR 89.112 (generally the Tier 3 standards).

<sup>2</sup>For manufacturers certifying engines under Option #1 of Table 3 of § 1039.102, these alternate FEL caps apply to all 19–56 kW engines for model years from 2013 through 2016 instead of the years indicated in this table. For manufacturers certifying engines under Option #2 of Table 3 of § 1039.102, these alternate FEL caps do not apply to 19–37 kW engines except in model years 2013 to 2015.

<sup>3</sup>For engines below 75 kW, the FEL caps are 0.40 g/kW-hr for PM emissions and 4.4 g/kW-hr for NOx emissions.

<sup>4</sup>For manufacturers certifying engines in this power category using a percentage phase-in/phase-out approach instead of the alternate NOx standards of § 1039.102(e)(1), the alternate NOx FEL cap in the table applies only in the 2014–2015 model years if certifying under § 1039.102(d)(1), and only in the 2015 model year if certifying under § 1039.102(d)(2).

<sup>5</sup>For manufacturers certifying engines in this power category using the percentage phase-in/phase-out approach instead of the alternate NOx standard of § 1039.102(e)(2), the alternate NOx FEL cap in the table applies only for the 2014 model year.

<sup>6</sup>For engines above 560 kW, the provision for alternate NOx FEL caps is limited to generator-set engines.

(5) You may certify engines under this paragraph (g) in any model year provided for in Table 1 of this section without regard to whether or not the engine family's FEL is at or below the otherwise applicable FEL cap. For example, a 200 kW engine certified to the NOx+ NMHC standard of § 1039.102(e)(3) with an FEL equal to the FEL cap of 2.8 g/kW-hr may nevertheless be certified under this paragraph (g).

(6) For engines you produce under this paragraph (g) after the Tier 4 final standards take effect, you may certify based on a NOx+NMHC FEL as described in Table 1 of this section. Calculate emission credits for these engines relative to the applicable NOx standard in § 1039.101 or § 1039.102, plus 0.1 g/kW-hr.

\* \* \* \* \*

**Subpart G—[Amended]**

37. Section 1039.625 is amended by revising paragraphs (e), (j), and (m) to read as follows:

**§ 1039.625 What requirements apply under the program for equipment-manufacturer flexibility?**

\* \* \* \* \*

(e) Standards. If you produce equipment with exempted engines under this section, the engines must meet emission standards specified in this paragraph (e), or more stringent standards. Note that we consider engines to be meeting emission standards even if they are certified with a family emission limit that is higher than the emission standard that would otherwise apply.

(1) If you are using the provisions of paragraph (d)(4) of this section, engines must meet the applicable Tier 1 or Tier 2 emission standards described in 40 CFR 89.112.

(2) If you are using the provisions of paragraph (a)(2) of this section, engines must be identical in all material respects to engines certified under this part 1039 as follows:

Engines in the following power category...	Must meet all standards and requirements that applied in the following model year...
(i) $19 \leq \text{kW} < 56$	2008 (Option 1, where applicable)
(ii) $56 \leq \text{kW} < 130$	2012 (Phase-out)
(iii) $130 \leq \text{kW} \leq 560$	2011 (Phase-out)
(iv) $\text{kW} > 560$	2011

(3) In all other cases, engines at or above 56 kW and at or below 560 kW must meet the appropriate Tier 3 standards described in 40 CFR 89.112. Engines below 56 kW

and engines above 560 kW must meet the appropriate Tier 2 standards described in 40 CFR 89.112.

\* \* \* \* \*

(j) *Provisions for engine manufacturers.* As an engine manufacturer, you may produce exempted engines as needed under this section. You do not have to request this exemption for your engines, but you must have written assurance from equipment manufacturers that they need a certain number of exempted engines under this section. Send us an annual report of the engines you produce under this section, as described in § 1039.250(a). Exempt engines must meet the emission standards in paragraph (e) of this section and you must meet all the requirements of 40 CFR 1068.265, except that engines produced under the provisions of paragraph (a)(2) of this section must be identical in all material respects to engines previously certified under this part 1039. If you show under 40 CFR 1068.265(c) that the engines are identical in all material respects to engines that you have previously certified to one or more FELs above the standards specified in paragraph (e) of this section, you must supply sufficient credits for these engines. Calculate these credits under subpart H of this part using the previously certified FELs and the alternate standards. You must meet the labeling requirements in 40 CFR 89.110 or § 1039.135, as applicable, with the following exceptions:

\* \* \* \* \*

(m) Additional exemptions for technical or engineering hardship. You may request additional engine allowances under paragraph (b) of this section; however, you may use these extra allowances only for those equipment models for which you, or an affiliated company, do not also produce the engine. Additional allowances under this paragraph

(m) must be used within the specified seven-year period. After considering the circumstances, we may permit you to introduce into U.S. commerce equipment with such engines that do not comply with Tier 4 emission standards, as follows:

(1) We may approve additional exemptions if extreme and unusual circumstances that are clearly outside your control and that could not have been avoided with reasonable discretion have resulted in technical or engineering problems that prevent you from meeting the requirements of this part. You must show that you exercised prudent planning and have taken all reasonable steps to minimize the scope of your request for additional allowances.

(2) To apply for exemptions under this paragraph (m), send the Designated Compliance Officer a written request as soon as possible before you are in violation.

In your request, include the following information:

(i) Describe your process for designing equipment.

(ii) Describe how you normally work cooperatively or concurrently with your engine supplier to design products.

(iii) Describe the engineering or technical problems causing you to request the exemption and explain why you have not been able to solve them. Describe the extreme and unusual circumstances that led to these problems and explain how they were unavoidable.

(iv) Describe any information or products you received from your engine supplier related to equipment design—such as written specifications, performance data, or prototype engines—and when you received it.

- (v) Compare the design processes of the equipment model for which you need additional exemptions and that for other models for which you do not need additional exemptions. Explain the technical differences that justify your request.
  - (vi) Describe your efforts to find and use other compliant engines, or otherwise explain why none is available.
  - (vii) Describe the steps you have taken to minimize the scope of your request.
  - (viii) Include other relevant information. You must give us other relevant information if we ask for it.
  - (ix) Estimate the increased percent of production you need for each equipment model covered by your request, as described in paragraph (m)(3) of this section. Estimate the increased number of allowances you need for each equipment model covered by your request, as described in paragraph (m)(4) of this section.
- (3) We may approve your request to increase the allowances under paragraph (b)(1) of this section, subject to the following limitations:
- (i) You must use up the allowances under paragraph (b)(1) of this section before using any additional allowance under this paragraph (m).
  - (ii) You may use these allowances only for the specific equipment models covered by your request.
- (4) We may approve your request to increase the small-volume allowances under paragraph (b)(2) of this section, subject to the following limitations:
- (i) You are eligible for additional allowances under this paragraph (m)(4) only if you do not use the provisions of paragraph (m)(3) of this section to obtain additional allowances within a given power category.

(ii) We may approve additional allowances in the form of waiving the annual limits specified in paragraph (b)(2) of this section instead of or in addition to increasing the total number of allowances under this paragraph (m)(4).

(iii) If we increase the total number of allowances, you may use these allowances only for the specific equipment models covered by your request.

**PART 1042--CONTROL OF EMISSIONS FROM NEW AND IN-USE MARINE COMPRESSION-IGNITION ENGINES AND VESSELS**

38. The authority citation for part 1042 continues to read as follows:

Authority: 42 U.S.C. 7401-7671q.

**Subpart B—[Amended]**

39. Section 1042.145 is amended by adding paragraph (j) to read as follows:

**§ 1042.145 Interim provisions.**

\* \* \* \* \*

(j) Vessel manufacturers and marine equipment manufacturers may apply the provisions of § 1042.605 to land-based engines with maximum engine power at or above 19 kW and below 600 kW produced under the allowances provided in 40 CFR 1039.625 for model year 2013 marine engines. All the provisions of § 1042.605 apply as if those engines were certified to emission standards under 40 CFR part 1039. Similarly, engine manufacturers, vessel manufacturers, and marine equipment manufacturers must comply with all the provisions of 40 CFR 1039.625 as if those engines were installed in land-based equipment.

**Subpart G—[Amended]**

40. Section 1042.615 is amended as follows:

- a. By revising the introductory text and paragraphs (a) introductory text and (a)(1).
- b. By redesignating paragraphs (b) through (d) as paragraphs (c) through (e).
- c. By adding a new paragraph (b).

**§ 1042.615 Replacement engine exemption.**

For Category 1 and Category 2 replacement engines, the provisions of 40 CFR 1068.240 apply except as described in this section. In unusual circumstances, you may ask us to allow you to apply these provisions for a new Category 3 engine.

(a) This paragraph (a) applies instead of the provisions of 40 CFR 1068.240(b)(2). The prohibitions in 40 CFR 1068.101(a)(1) do not apply to a new replacement engine if all the following conditions are met:

(1) You use good engineering judgment to determine that no engine certified to the current requirements of this part is produced by any manufacturer with the appropriate physical or performance characteristics to repower the vessel. We have determined that engines certified to Tier 4 standards do not have the appropriate physical or performance characteristics to replace uncertified engines or engines certified to emission standards that are less stringent than the Tier 4 standards.

\* \* \* \* \*

(b) The 25-year limit specified in 40 CFR 1068.240(a) does not apply for engines subject to this part 1042. You may accordingly omit the statement on the permanent labels specified in 40 CFR 1068.240 describing this limitation.

\* \* \* \* \*

**PART 1048— CONTROL OF EMISSIONS FROM NEW, LARGE NONROAD  
SPARK-IGNITION ENGINES**

41. The authority citation for part 1048 continues to read as follows:

Authority: 42 U.S.C. 7401-7671q.

**Subpart B—[Amended]**

42. Section 1048.105 is amended by revising paragraph (a) to read as follows:

**§ 1048.105 What evaporative emission standards and requirements apply?**

\* \* \* \* \*

(a) Fuel line permeation. For nonmetallic fuel lines, you must specify and use products that meet the Category 1 specifications for permeation in the November 1996 or November 2004 versions of SAE J2260 (both incorporated by reference in § 1048.810).

\* \* \* \* \*

**Subpart I—[Amended]**

43. Section 1048.810 is revised to read as follows:

**§ 1048.810 What materials does this part reference?**

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the Environmental Protection Agency must publish a notice of the change in the Federal Register and the material must be

available to the public. All approved material is available for inspection at U.S. EPA, Air and Radiation Docket and Information Center, 1301 Constitution Ave., NW., Room B102, EPA West Building, Washington, DC 20460, (202) 202–1744, and is available from the sources listed below. It is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to

*[http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html)*

(b) Society of Automotive Engineers, 400 Commonwealth Dr., Warrendale, PA 15096–0001, (877) 606–7323 (U.S. and Canada) or (724) 776–4970 (outside the U.S. and Canada), *<http://www.sae.org>*.

(1) SAE J2260, Nonmetallic Fuel System Tubing with One or More Layers, November 2004; IBR approved for § 1048.105(a).

(2) SAE J2260, Nonmetallic Fuel System Tubing with One or More Layers, November 1996; IBR approved for § 1048.105(a).

(c) International Organization for Standardization, Case Postale 56, CH–1211 Geneva 20, Switzerland, (41) 22749 0111, *<http://www.iso.org>*, or *[central@iso.org](mailto:central@iso.org)*.

(1) ISO 9141-2 Road vehicles—Diagnostic systems— Part 2: CARB requirements for interchange of digital information, February 1994; IBR approved for § 1048.110(g).

(2) ISO 14230-4 Road vehicles—Diagnostic systems—Keyword Protocol 2000— Part 4: Requirements for emission-related systems, June 2000; IBR approved for § 1048.110(g).

**PART 1054—CONTROL OF EMISSIONS FROM NEW, SMALL NONROAD  
SPARK-IGNITION ENGINES AND EQUIPMENT**

44. The authority citation for part 1054 continues to read as follows:

Authority: 42 U.S.C. 7401-7671q.

**Subpart B—[Amended]**

45. Section 1054.145 is amended by revising paragraphs (c)(3) and (n) to read as follows:

**§ 1054.145 Are there interim provisions that apply only for a limited time?**

\* \* \* \* \*

(c) \* \* \*

(3) Engines subject to Phase 3 emission standards must meet the standards at or above barometric pressures of 96.0 kPa in the standard configuration and are not required to meet emission standards at lower barometric pressures. This is intended to allow testing under most weather conditions at all altitudes up to 1,100 feet above sea level. In your application for certification, identify the altitude above which you rely on an altitude kit and describe your plan for making information and parts available such that you would reasonably expect that altitude kits would be widely used at all such altitudes.

\* \* \* \* \*

(n) California test fuel. Through model year 2019, you may perform testing with a fuel meeting the requirements for certifying the engine in California instead of the fuel specified in § 1054.501(b)(2), as follows:

(1) You may certify individual engine families using data from testing conducted with California Phase 2 test fuel. Any EPA testing with such an engine family may use either this same certification fuel or the test fuel specified in § 1054.501.

(2) Starting in model year 2013, you may certify individual engine families using data from testing conducted with California Phase 3 test fuel. Any EPA testing with such an engine family may use either this same certification fuel or the test fuel specified in § 1054.501, unless you certify to the more stringent CO standards specified in this paragraph (n)(2). If you meet these alternate CO standards, we will also use California Phase 3 test fuel for any testing we perform with engines from that engine family. The following alternate CO standards apply instead of the CO standards specified in § 1054.103 or § 1054.105:

Table 1 to § 1054.145—Alternate CO Standards for Testing with California Phase 3 Test Fuel (g/kW-hr)

Engine type	Alternate CO standard
Class I	549
Class II	549
Class III	536
Class IV	536
Class V	536
Marine generators	4.5

\* \* \* \* \*

**Subpart F—[Amended]**

46. Section 1054.501 is amended by revising paragraph (b)(2) to read as follows:

**§ 1054.501 How do I run a valid emission test?**

\* \* \* \* \*

(b) \* \* \*

(2) Use the appropriate fuels and lubricants specified in 40 CFR part 1065, subpart H, for all the testing we require in this part. Except as specified in paragraph (d) of this section, use gasoline specified for general testing. For service accumulation, use the test fuel or any commercially available fuel that is representative of the fuel that in-use engines will use. Note that § 1054.145(n) allows for testing with gasoline test fuels specified by the California Air Resources Board for any individual engine family through model year 2019.

\* \* \* \* \*

**PART 1065—Engine-Testing Procedures**

47. The authority citation for part 1065 continues to read as follows:

Authority: 42 U.S.C. 7401-7671q.

**Subpart C—[Amended]**

48. Section 1065.275 is amended by revising the section heading to read as follows:

**§ 1065.275 N<sub>2</sub>O measurement devices.**

\* \* \* \* \*

**Subpart G—[Amended]**

49. Section 1065.610 is amended by revising paragraph (c)(3) to read as follows:

**§ 1065.610 Duty cycle generation.**

\* \* \* \* \*

(c) \* \* \*

(3) Intermediate speed. If your normalized duty cycle specifies a speed as “intermediate speed,” use your torque-versus-speed curve to determine the speed at which maximum torque occurs. This is peak torque speed. If maximum torque occurs in a flat region of the torque-versus-speed curve, your peak torque speed is the midpoint between the lowest and highest speeds at which the trace reaches the flat region. For purposes of this paragraph (c)(3), a flat region is one in which measured torque values are within 2% of the maximum recorded value. Identify your reference intermediate speed as one of the following values:

- (i) Peak torque speed if it is between (60 and 75) % of maximum test speed.
- (ii) 60 % of maximum test speed if peak torque speed is less than 60 % of maximum test speed.
- (iii) 75 % of maximum test speed if peak torque speed is greater than 75 % of maximum test speed.

\* \* \* \* \*

## **PART 1066—Vehicle-Testing Procedures**

50. The authority citation for part 1066 continues to read as follows:

Authority: 42 U.S.C. 7401-7671q.

### **Subpart D—[Amended]**

51. Section 1066.310 is amended by:

- a. Revising the section heading and the introductory text;
- b. Revising paragraphs (b)(2), (b)(3) introductory text, and (b)(3)(i);

- c. Removing and reserving paragraph (b)(3)(ii);
- d. Revising paragraphs (b)(6) and (b)(7); and
- e. Adding paragraph (b)(8) to read as follows:

**§ 1066.310 Coastdown procedures for vehicles with GVWR above 14,000 lbs.**

This section describes coastdown procedures that are unique to heavy-duty vehicles with GVWR above 14,000 lbs. These procedures are valid for calculating road-load coefficients for chassis and post-transmission powerpack testing and for calculating drag area ( $C_D A$ ) for use in the Greenhouse gas Emissions Model (GEM) simulation tool under 40 CFR part 1037.

\* \* \* \* \*

(b) \* \* \*

(2) Operate the vehicle at a top speed above 70 mph, or at its maximum achievable speed if it cannot reach 70 mph. If a vehicle is equipped with a vehicle speed limiter that is set for a maximum speed below 70 mph, you must disable the vehicle speed limiter. Start the test at or above 70 mph or at the vehicle’s maximum achievable speed if it cannot reach 70 mph. Data collection must occur through a minimum speed at or below 15 mph. Data analysis for valid coastdown runs must include a maximum speed as described in this paragraph (b)(2) and a minimum speed of 15 mph.

(3) Gather data regarding wind speed and direction, in coordination with time-of-day data, using at least one stationary electro-mechanical anemometer and suitable data loggers meeting the specifications of SAE J1263, as well as the following additional specifications for the anemometer placed adjacent to the test surface:

(i) Calibrate the equipment by running the zero-wind and zero-angle calibrations within 24 hours before conducting the coastdown procedures. If the coastdown procedures are not complete 24 hours after calibrating the equipment, repeat the calibration for another 24 hours of data collection.

(ii) [Reserved]

\* \* \* \* \*

(6) All valid coastdown run times in each direction must be within 2.0 standard deviations of the mean of the valid coastdown run times (from 70 mph down to 15 mph) in that direction. Eliminate runs outside this range. After eliminating these runs you must have at least eight valid runs in each direction. You may use coastdown run times that do not meet these standard deviation requirements if we approve it in advance. In your request, describe why the vehicle is not able to meet the specified standard deviation requirements and propose an alternative set of requirements.

(7) Analyze data for chassis and post-transmission powerpack testing or for use in the GEM simulation tool as follows:

(i) Follow the procedures specified in Section 10 of SAE J1263 or Section 11 of SAE J2263 to calculate coefficients for chassis and post-transmission powerpack testing.

(ii) For the GEM simulation tool, determine drag area,  $C_D A$ , as follows instead of using the procedure specified in Section 10 of SAE J1263:

(A) Measure vehicle speed at fixed intervals over the coastdown run (generally at 10 Hz), including speeds at or above 15 mph and at or below 70 mph. Establish the height or altitude corresponding to each interval as described in SAE J2263 if you need to incorporate the effects of road grade.

(B) Calculate the vehicle's effective mass,  $M_e$ , in kg by adding 56.7 kg to the vehicle mass for each tire making road contact. This accounts for the rotational inertia of the wheels and tires.

(C) Calculate the road-load force for each measurement interval,  $F_i$ , using the following equation:

$$F_i = -M_e \cdot \frac{v_i - v_{i-1}}{\Delta t}$$

Eq. 1066.310-1

Where:

$M_e$  = the vehicle's effective mass, expressed to the nearest 0.1 kg.

$v$  = vehicle speed at the beginning and end of the measurement interval. Let  $v_0 = 0$  m/s.

$\Delta t$  = elapsed time over the measurement interval, in seconds.

(D) Plot the data from all the coastdown runs on a single plot of  $F_i$  vs.  $v_i^2$  to determine the slope correlation,  $D$ , based on the following equation:

$$F_i - M_e \cdot g \cdot \frac{\Delta h}{\Delta s} = A_m + D \cdot v_i^2$$

Eq. 1066.310-2

Where:

$g$  = gravitational acceleration = 9.81 m/s<sup>2</sup>.

$\Delta h$  = change in height or altitude over the measurement interval, in m. Assume  $\Delta h = 0$  if you are not correcting for grade.

$\Delta s$  = distance the vehicle travels down the road during the measurement interval, in m.

$A_m$  = the calculated value of the y-intercept based on the curve-fit.

(E) Calculate drag area,  $C_D A$ , in m<sup>2</sup> using the following equation:

$$C_D A = \frac{2 \cdot D_{\text{adj}}}{\rho}$$

Eq. 1066.310-3

Where:

$\rho$  = air density at reference conditions = 1.17 kg/m<sup>3</sup>.

$$D_{\text{adj}} = D \cdot \left( \frac{\bar{T}}{293} \right) \cdot \left( \frac{98.21}{\bar{P}_B} \right)$$

Eq. 1066.310-4

$\bar{T}$  = average ambient temperature during testing, in K.

$\bar{P}_B$  = average ambient pressuring during the test, in kPa.

(8) Determine the A, B, and C coefficients identified in § 1066.210 as follows:

(i) For chassis and post-transmission powerpack testing, follow the procedures specified in Section 10 of SAE J1263 or Section 12 of SAE J2263.

(ii) For the GEM simulation tool, use the following values:

$$A = A_m$$

$$B = 0$$

$$C = D_{\text{adj}}$$

## **PART 1068--GENERAL COMPLIANCE PROVISIONS FOR HIGHWAY, STATIONARY, AND NONROAD PROGRAMS**

52. The authority citation for part 1068 continues to read as follows:

Authority: 42 U.S.C. 7401-7671q.

**Subpart A—[Amended]**

53. Section 1068.1 is amended by revising paragraph (b) to read as follows:

**§ 1068.1 Does this part apply to me?**

\* \* \* \* \*

(b) This part does not apply to any of the following engine or vehicle categories:

- (1) Light-duty motor vehicles (see 40 CFR part 86).
- (2) Highway motorcycles (see 40 CFR part 86).
- (3) Heavy-duty motor vehicles and motor vehicle engines, except as specified in 40 CFR parts 85 and 86.
- (4) Aircraft engines, except as specified in 40 CFR part 87.
- (5) Land-based nonroad compression-ignition engines we regulate under 40 CFR part 89.
- (6) Small nonroad spark-ignition engines we regulate under 40 CFR part 90.
- (7) Marine spark-ignition engines we regulate under 40 CFR part 91.
- (8) Locomotive engines we regulate under 40 CFR part 92.
- (9) Marine compression-ignition engines we regulate under 40 CFR parts 89 or 94.

\* \* \* \* \*

**Subpart C—[Amended]**

54. Section 1068.240 is revised to read as follows:

**§ 1068.240 What are the provisions for exempting new replacement engines?**

The prohibitions in § 1068.101(a)(1) do not apply to a new engine if it is exempt under this section as a replacement engine. For purposes of this section, a replacement engine

is a new engine that is used to replace an engine that has already been placed into service (whether the previous engine is replaced in whole or in part with a new engine).

(a) General provisions. You are eligible for the exemption for new replacement engines only if you are a certificate holder. Note that this exemption does not apply for locomotives (40 CFR 1033.601) and that unique provisions apply to marine compression-ignition engines (40 CFR 1042.615).

(1) Paragraphs (b), (c), and (d) of this section describe different approaches for exempting new replacement engines where the engines are specially built to correspond to an engine model from an earlier model year that was subject to less stringent standards than those that apply for current production (or is no longer covered by a certificate of conformity).

(2) Paragraph (e) of this section describes a simpler approach for exempting partially complete new replacement engines that are built under a certificate of conformity that is valid for producing engines for the current model year.

(3) For all the different approaches described in paragraphs (b) through (e) of this section, the exemption applies only for equipment that is 25 years old or less at the time of installation.

(b) Previous-tier replacement engines with tracking. You may produce any number of new engines to replace an engine already placed into service in a piece of equipment, as follows:

(1) The engine being replaced must have been either not originally subject to emission standards or originally subject to less stringent emission standards than those that apply to a new engine meeting current standards. The provisions of this

paragraph (b) also apply for engines that were originally certified to the same standards that apply for the current model year if you no longer have a certificate of conformity to continue producing that engine configuration.

(2) The following requirements and conditions apply for engines exempted under this paragraph (b):

(i) You must determine that you do not produce an engine certified to meet current requirements that has the appropriate physical or performance characteristics to repower the equipment. If the engine being replaced was made by a different company, you must make this determination also for engines produced by this other company.

(ii) In the case of premature engine failure, if the old engine was subject to emission standards, you must make the new replacement engine in a configuration identical in all material respects to the old engine and meet the requirements of § 1068.265. You may alternatively make the new replacement engine in a configuration identical in all material respects to another certified engine of the same or later model year as long as the engine is not certified with a family emission limit higher than that of the old engine.

(iii) For cases not involving premature engine failure, you must make a separate determination for your own product line addressing every tier of emission standards that is more stringent than the emission standards for the engine being replaced. For example, if the engine being replaced was built before the Tier 1 standards started to apply and engines of that size are currently subject to Tier 3 standards, you must also consider whether any Tier 1 or Tier 2 engines that you

produce have the appropriate physical and performance characteristics for replacing the old engine; if you produce a Tier 2 engine with the appropriate physical and performance characteristics, you must use it as the replacement engine.

(iv) You must keep records to document your basis for making the determinations in paragraphs (b)(2)(i) and (iii) of this section.

(3) The old engine block may be reintroduced into U.S. commerce as part of an engine that meets either the current standards for new engines, the provisions for new replacement engines in this section, or another valid exemption. Otherwise, you must destroy the old engine block or confirm that it has been destroyed.

(4) If the old engine was subject to emission standards, the replacement engine must meet the appropriate emission standards as specified in § 1068.265. This generally means you must make the new replacement engine in a previously certified configuration.

(5) Except as specified in paragraph (d) of this section, you must add a permanent label, consistent with § 1068.45, with your corporate name and trademark and the following additional information:

(i) Add the following statement if the new engine may only be used to replace an engine that was not subject to any emission standards under this chapter:

THIS REPLACEMENT ENGINE IS EXEMPT UNDER 40 CFR 1068.240.  
SELLING OR INSTALLING THIS ENGINE FOR ANY PURPOSE OTHER  
THAN TO REPLACE AN UNREGULATED ENGINE MAY BE A  
VIOLATION OF FEDERAL LAW SUBJECT TO CIVIL PENALTY. THIS

ENGINE MAY NOT BE INSTALLED IN EQUIPMENT THAT IS MORE THAN 25 YEARS OLD AT THE TIME OF INSTALLATION.

(ii) Add the following statement if the new engine may replace an engine that was subject to emission standards:

THIS ENGINE COMPLIES WITH U.S. EPA EMISSION REQUIREMENTS FOR [Identify the appropriate emission standards (by model year, tier, or emission levels) for the replaced engine] ENGINES UNDER 40 CFR 1068.240. SELLING OR INSTALLING THIS ENGINE FOR ANY PURPOSE OTHER THAN TO REPLACE A [Identify the appropriate emission standards for the replaced engine, by model year(s), tier(s), or emission levels)] ENGINE MAY BE A VIOLATION OF FEDERAL LAW SUBJECT TO CIVIL PENALTY. THIS ENGINE MAY NOT BE INSTALLED IN EQUIPMENT THAT IS MORE THAN 25 YEARS OLD AT THE TIME OF INSTALLATION.

(6) Engines exempt under this paragraph (b) may not be introduced into U.S. commerce before you make the determinations under paragraph (b)(2) of this section, except as specified in this paragraph (b)(6). We may waive this restriction for engines excluded under paragraph (c)(5) of this section that you ship to a distributor. Where we waive this restriction, you must take steps to ensure that the engine is installed consistent with the requirements of this paragraph (b). For example, at a minimum you must report to us annually whether engines we allowed you to ship to a distributor under this paragraph (b)(6) have been placed into service or remain in inventory. After an engine is placed into service, your report must describe how the

engine was installed consistent with the requirements of this paragraph (b). Send these reports to the Designated Compliance Officer by the deadlines we specify.

(c) Previous-tier replacement engines without tracking. You may produce a limited number of new replacement engines that are not from a currently certified engine family under the provisions of this paragraph (c). If you produce new engines under this paragraph (c) to replace engines subject to emission standards, the new replacement engine must be in a configuration identical in all material respects to the old engine and meet the requirements of § 1068.265. You may make the new replacement engine in a configuration identical in all material respects to another certified engine of the same or later model year as long as the engine is not certified with a family emission limit higher than that of the old engine. The provisions of this paragraph (c) also apply for engines that were originally certified to the same standards that apply for the current model year if you no longer have a certificate of conformity to continue producing that engine configuration. This would apply, for example, for engine configurations that were certified in an earlier model year but are no longer covered by a certificate of conformity. You must comply with the requirements of paragraph (b) of this section for any number of replacement engines you produce in excess of what we allow under this paragraph (c). Engines produced under this paragraph (c) may be redesignated as engines subject to paragraph (b) of this section, as long as you meet all the requirements and conditions of paragraph (b) of this section before the deadline for the report specified in paragraph (c)(3) of this section. The following provisions apply to engines exempted under this paragraph (c):

(1) You may produce a limited number of replacement engines under this paragraph (c) representing 0.5 percent of your annual production volumes for each category and subcategory of engines identified in Table 1 to this section (1.0 percent through 2013). Calculate this number by multiplying your annual U.S.-directed production volume by 0.005 (or 0.01 through 2013) and rounding to the nearest whole number. Determine the appropriate production volume by identifying the highest total annual U.S.-directed production volume of engines from the previous three model years for all your certified engines from each category or subcategory identified in Table 1 to this section, as applicable. In unusual circumstances, you may ask us to base your production limits on U.S.-directed production volume for a model year more than three years prior. You may include stationary engines and exempted engines as part of your U.S.-directed production volume. Include U.S.-directed engines produced by any parent or subsidiary companies and those from any other companies you license to produce engines for you.

(2) Count every exempted new replacement engine from your total U.S.-directed production volume that you produce in a given calendar year under this paragraph (c), including partially complete engines, except for the following:

(i) Engines built to specifications for an earlier model year under paragraph (b) of this section.

(ii) Partially complete engines exempted under paragraph (e) of this section.

(3) Send the Designated Compliance Officer a report by March 31 of the year following any year in which you produced exempted replacement engines under this paragraph (c). In your report include the total number of replacement engines you

produce under this paragraph (c) for each category or subcategory, as appropriate, and the corresponding total production volumes determined under paragraph (c)(1) of this section. If you send us a report under this paragraph (c)(3), you must also include the total number of replacement engines you produced under paragraphs (b), (d), and (e) of this section. You may include this information in production reports required under the standard-setting part.

(4) Add a permanent label as specified in paragraph (b)(5) of this section. For partially complete engines, you may alternatively add a permanent or removable label as specified in paragraph (d) of this section.

(5) You may not use the provisions of this paragraph (c) for any engines in the following engine categories or subcategories:

(i) Land-based nonroad compression-ignition engines we regulate under 40 CFR part 1039 with a per-cylinder displacement at or above 7.0 liters.

(ii) Marine compression-ignition engines we regulate under 40 CFR part 1042 with a per-cylinder displacement at or above 7.0 liters.

(iii) Locomotive engines we regulate under 40 CFR part 1033.

(d) Partially complete engines. The following requirements apply if you ship a partially complete replacement engine under this section:

(1) Provide instructions specifying how to complete the engine assembly such that the resulting engine conforms to the applicable certificate of conformity or the specifications of § 1068.265. Where a partially complete engine can be built into multiple different configurations, you must be able to identify all the engine models and model years for which the partially complete engine may properly be used for

replacement purposes. Your instructions must make clear how the final assembler can determine which configurations are appropriate for the engine they receive.

(2) You must label the engine as follows:

(i) If you have a reasonable basis to believe that the fully assembled engine will include the original emission control information label, you may add a removable label to the engine with your corporate name and trademark and the statement: "This replacement engine is exempt under 40 CFR 1068.240." This would generally apply if all the engine models that are compatible with the replacement engine were covered by a certificate of conformity and they were labeled in a position on the engine or equipment that is not included as part of the partially complete engine being shipped for replacement purposes. Removable labels must meet the requirements specified in § 1068.45.

(ii) If you do not qualify for using a removable label in paragraph (d)(1) of this section, you must add a permanent label in a readily visible location, though it may be obscured after installation in a piece of equipment. Include on the permanent label your corporate name and trademark, the engine's part number (or other identifying information), and the statement: "THIS REPLACEMENT ENGINE IS EXEMPT UNDER 40 CFR 1068.240; IT MAY NOT BE INSTALLED IN EQUIPMENT THAT IS MORE THAN 25 YEARS OLD AT THE TIME OF INSTALLATION." If there is not enough space for this statement, you may alternatively add: "REPLACEMENT" or "SERVICE ENGINE". For purposes of this paragraph (d)(2), engine part numbers

permanently stamped or engraved on the engine are considered to be included on the label.

(e) Partially complete current-tier replacement engines. The provisions of paragraph (d) of this section apply for partially complete engines you produce from a current line of certified engines or vehicles. This applies for engine-based and equipment-based standards as follows:

(1) Where engine-based standards apply, you may introduce into U.S. commerce short blocks or other partially complete engines from a currently certified engine family as replacement components for in-use equipment powered by engines you originally produced. You must be able to identify all the engine models and model years for which the partially complete engine may properly be used for replacement purposes.

(2) Where equipment-based standards apply, you may introduce into U.S. commerce engines that are identical to engines covered by a current certificate of conformity by demonstrating compliance with currently applicable standards where the engines will be installed as replacement engines. These engines might be fully assembled, but we would consider them to be partially complete engines because they are not yet installed in the equipment.

(f) Emission credits. Replacement engines exempted under this section may not generate or use emission credits under the standard-setting part nor be part of any associated credit calculations.

Table 1 to § 1068.240— Engine categories and subcategories for new replacement engines exempted without tracking

Engine category	Standard-setting part <sup>1</sup>	Engine subcategories
Highway CI	40 CFR part 86	disp. < 0.6 L/cyl
		0.6 ≤ disp. < 1.2 L/cyl
Nonroad CI, Stationary CI, and Marine CI	40 CFR part 1039, or 40 CFR part 1042	disp. ≥ 1.2 L/cyl
		disp. < 0.6 L/cyl
		0.6 ≤ disp. < 1.2 L/cyl
		1.2 ≤ disp. < 2.5 L/cyl
Marine SI	40 CFR part 1045	2.5 ≤ disp. < 7.0 L/cyl
		outboard
		personal watercraft
Large SI, Stationary SI, and Marine SI (sterndrive/ inboard only)	40 CFR part 1048 or 40 CFR part 1045	all engines
		off-highway motorcycle
Recreational vehicles	40 CFR part 1051	all-terrain vehicle
		snowmobile
		handheld
Small SI and Stationary SI	40 CFR part 1054	Class I
		Class II

<sup>1</sup> Include an engine as being subject to the identified standard-setting part if it will eventually be subject to emission standards under that part. For example, if you certify marine compression-ignition engines under part 94, count those as if they were already subject to part 1042.

For the reasons set forth in the preamble, the National Highway Traffic Safety Administration is amending title 49, chapter V of the Code of Federal Regulations as follows:

**PART 523—VEHICLE CLASSIFICATION**

55. The authority citation for part 523 is revised to read as follows:

Authority: 49 U.S.C. 32901, delegation of authority at 49 CFR 1.95

56. Section 523.2 is amended by revising the definitions of “Complete vehicle” and “Incomplete vehicle” to read as follows:

**§ 523.2 Definitions.**

\* \* \* \* \*

*Complete vehicle* means a vehicle, other than in § 523.7, that requires no further

manufacturing operations to perform its intended function and is a functioning vehicle that has the primary load carrying device or container (or equivalent equipment) attached or that is designed to pull a trailer. Examples of equivalent equipment would include fifth wheel trailer hitches, firefighting equipment, and utility booms.

\* \* \* \* \*

*Incomplete vehicle* means a vehicle, other than in § 523.7, which does not have the primary load carrying device or container attached when it is first sold as a vehicle or any vehicle that does not meet the definition of a complete vehicle. This may include vehicles sold to secondary vehicle manufacturers. Incomplete vehicles include cab-complete vehicles.

\* \* \* \* \*

57. Section 523.7 is revised to read as follows:

**§ 523.7 Heavy-duty pickup trucks and vans.**

Heavy-duty pickup trucks and vans are pickup trucks and vans with a gross vehicle weight rating between 8,501 pounds and 14,000 pounds (Class 2b through 3 vehicles) manufactured as complete vehicles by a single or final stage manufacturer or manufactured as incomplete vehicles as designated by a manufacturer. A manufacturer may also optionally designate as a heavy-duty pickup truck or van any cab-complete or complete vehicle having a GVWR over 14,000 pounds and below 26,001 pounds equipped with a spark ignition engine or any spark ignition engine certified and sold as a loose engine manufactured for use in a heavy-duty pickup truck or van. See references in 49 CFR 535.5(a), 40 CFR 1037.104 and 40 CFR 1037.150. Complete and incomplete

vehicles between 8,501 pounds and 14,000 pounds have the meaning for complete and incomplete heavy-duty vehicles given in 40 CFR 86.1803.

**PART 535 MEDIUM- AND HEAVY-DUTY VEHICLE FUEL EFFICIENCY PROGRAM**

58. The authority citation for part 535 is revised to read as follows:

Authority: 49 U.S.C 32901, delegation of authority at 49 CFR 1.95.

56. Revise § 535.3(b) and (c) to read as follows:

§ 535.3 Applicability.

\* \* \* \* \*

(b) Complete vehicle manufacturers, for the purpose of this part, include primary and secondary stage manufacturers meeting the criteria in 40 CFR 1037.620 that produce heavy-duty pickup trucks and vans or truck tractors as complete vehicles and, that hold the EPA certificate of conformity.

(c) Chassis manufacturers, for the purpose of this part, include primary and secondary stage manufacturers meeting the criteria in 40 CFR 1037.620 that produce incomplete vehicles constructed for use as heavy-duty pickup trucks or vans or heavy-duty vocational vehicles and that hold the EPA certificate of conformity. Some vocational vehicle manufacturers are both chassis and complete vehicle manufacturers. These manufacturers will be regulated as chassis manufacturers under this program.

\* \* \* \* \*

57. Amend § 535.4 by adding a definition of “Credit holder” in alphabetical order and revising the definitions for “Configuration” and “Subconfiguration” to read as follows:

§ 535.4 Definitions.

\* \* \* \* \*

*Configuration* means a subclassification within a test group which is based on engine code, transmission type and gear ratios, final drive ratio and other parameters which EPA designates. Transmission type means the basic type of the transmission (e.g. automatic, manual, automated manual, semi-automatic, or continuously variable) and does not include the drive system of the vehicle (e.g. front-wheel drive, rear-wheel drive, and four-wheel drive). Engine code means the combination of both “engine code” and “basic engine” as defined in the provisions of 40 CFR 600.002.

*Credit holder* (or *holder*) means a legal person that has credits, either because they are the manufacturer who earned the credits by exceeding the applicable fuel consumption standard and are the certificate holder, or because they are a designated recipient who has received credits from another holder. Credit holders need not be manufacturers but credit holders that are not manufacturers may only purchase and hold credits for the purpose of retiring them as specified in 40 CFR 1036.701(h) and 1037.701(e).

\* \* \* \* \*

*Subconfiguration* means a unique combination within a vehicle configuration of equivalent test weight, road-load horsepower, and any other operational characteristics or parameters that EPA determines may significantly affect CO<sub>2</sub> emissions within a vehicle configuration. Note that for vehicles subject to heavy-duty pickup truck and van standards, equivalent test weight (ETW) is based on the ALVW of the vehicle as outlined in paragraph 40 CFR 1037.104(d)(11).

\* \* \* \* \*

58. Amend § 535.5 by:

- a. Revising paragraph (a)(4)(i) and adding paragraphs (a)(4)(v) and (vi);
- b. Revising paragraph (a)(6);
- c. Revising paragraph (b)(2)(i) and adding paragraphs (b)(2)(iii) and (iv); and
- d. Revising paragraph (c)(2)(i) and adding paragraphs (c)(2)(iii), (c)(2)(iv), and (c)(5).

The revisions and additions read as follows:

**§ 535.5 Standards.**

(a) \* \* \*

(4) \* \* \*. (i) Manufacturers may choose voluntarily to comply early with fuel consumption standards for model years 2013 through 2015, as determined in paragraphs (a)(4)(iii) and (iv) of this section, for example, in order to begin accumulating credits through over-compliance with the applicable standard. A manufacturer choosing early compliance must comply with all the vehicles and engines it manufactures in each regulatory category for a given model year except as provided in paragraphs (a)(4)(v) and (vi) of this section.

\* \* \* \* \*

(v) For model year 2013, a manufacturer can choose to comply with the standards in paragraph (a) of this section and generate early credits under § 535.7(b) by using the entire U.S.-directed production volume of vehicles other than electric vehicles as specified in 40 CFR 1037.150. The model year 2014 standards in paragraph (a) of this section apply for vehicles complying in model year 2013. If some test groups are certified by EPA after the start of the model year, the manufacturer may only generate

credits under § 535.7(b) for the production that occurs after all test groups are certified in accordance with 40 CFR 1037.150 (a)(2).

(vi) For model year 2014, a manufacturer producing model year 2014 vehicles before January 1, 2014, may optionally elect to comply with these standards for a partial model year that begins on January 1, 2014, and ends on the day the manufacturer's model year would normally end if it meets the provisions in 40 CFR 1037.150(g).

\* \* \* \* \*

(6) Optional certification under this section. A manufacturer may optionally certify any spark ignition (or gasoline) cab-complete or complete vehicle weighing over 14,000 pounds GVWR and below 26,001 pounds GVWR to the requirements under this paragraph (a) that applies to a comparable complete sister vehicle as determined in accordance with 40 CFR 1037.150(l). Calculate the target standard value under paragraph (a)(2) of this section based on the same work factor value that applies for the complete sister vehicle.

\* \* \* \* \*

(b) \* \* \*

(2) \* \* \* (i) For model years 2013 through 2015, a manufacturer may choose voluntarily to comply early with the fuel consumption standards provided in paragraph (b)(3) of this section. For example, a manufacturer may choose to comply early in order to begin accumulating credits through over-compliance with the applicable standards. A manufacturer choosing early compliance must comply with all the vehicles and engines it manufactures in each regulatory category for a given model year except as provided in paragraphs (b)(2)(iii) through (iv) of this section.

\* \* \* \* \*

(iii) For model year 2013, a manufacturer can choose to comply with the standards in paragraph (b) of this section and generate early credits under 535.7(c) by using the entire U.S.-directed production volume within any of its regulatory sub-categories of vehicles other than electric vehicles as specified in 40 CFR 1037.150. The model year 2014 standards in paragraph (b) of this section apply for vehicles complying in model year 2013. If some vehicle families within a regulatory subcategory are certified by EPA after the start of the model year, manufacturers may generate credits under § 535.7(c) only for production that occurs after all families are certified in accordance with 40 CFR 1037.150(a)(1).

(iv) For model year 2014, a manufacturer producing model year 2014 vehicles before January 1, 2014, may optionally elect to comply with these standards for a partial model year that begins on January 1, 2014, and ends on the day the manufacturer's model year would normally end if it meets the provisions in 40 CFR 1037.150(g).

\* \* \* \* \*

(c) \* \* \*

(2) \* \* \* (i) For model years 2013 through 2015, a manufacturer may choose voluntarily to comply early with the fuel consumption standards provided in paragraph (c)(3) of this section. For example, a manufacturer may choose to comply early in order to begin accumulating credits through over-compliance with the applicable standards. A manufacturer choosing early compliance must comply with all the vehicles and engines it

manufacturers in each regulatory category for a given model year except as provided in paragraphs (c)(2)(iii) through (iv) of this section.

\* \* \* \* \*

(iii) For model year 2013, a manufacturer can choose to comply with the standards in paragraph (c) of this section and generate early credits under § 535.7(c) by using the entire U.S.-directed production volume within any of its regulatory sub-categories of vehicles other than electric vehicles as specified in 40 CFR 1037.150. The model year 2014 standards in paragraph (c) of this section apply for vehicles complying in model year 2013. If some vehicle families within a regulatory subcategory are certified by EPA after the start of the model year, manufacturers may generate credits under § 535.7(c) only for production that occurs after all families are certified in accordance with 40 CFR 1037.150(a)(1).

(iv) For model year 2014, a manufacturer producing model year 2014 vehicles before January 1, 2014, may optionally elect to comply with these standards for a partial model year that begins on January 1, 2014, and ends on the day the manufacturer's model year would normally end if it meets the provisions in 40 CFR 1037.150(g).

\* \* \* \* \*

(5) *Vocational tractors.* Tractors meeting the definition of vocational tractors in 49 CFR 523.2 for purposes of certifying vehicles to fuel consumption standards, are divided into families of vehicles as specified in 40 CFR 1037.230(a)(1) and must comply with standards for heavy-duty vocational vehicles and engines of the same weight class specified in paragraphs (b) and (d) of this section. Class 7 and Class 8 tractors certified

or exempted as vocational tractors are limited in production to no more than 21,000 vehicles in any three consecutive model years. If a manufacturer is determined as not applying this allowance in good faith by the EPA in its applications for certification in accordance with 40 CFR 1037.205 and 1037.630, a manufacturer must comply with the tractor fuel consumption standards in paragraph (c)(3) of this section. Vocational tractors generating credits can trade and transfer credits in the same averaging sets as tractors and vocational vehicles in the same weight class.

\* \* \* \* \*

59. Revise § 535.6(b)(3) to read as follows:

**§ 535.6 Measurement and calculation procedures.**

\* \* \* \* \*

(b) \* \* \*

(3) From the GEM results, select the CO<sub>2</sub> family emissions level (FEL) and equivalent fuel consumption values for vocational vehicle and tractor families in each regulatory subcategories for each model year. Equivalent fuel consumption FELs are derived in GEM from the CO<sub>2</sub> FEL value rounded to the nearest whole number and are expressed to the nearest 0.1 gallons per 1000 ton-mile. For families containing multiple subfamilies, identify the FELs for each subfamily.

\* \* \* \* \*

60. Amend § 535.7 by revising paragraphs (a), (b)(9), (c)(11)(i),(d)(11)(i), (e)(1)(i), (e)(1)(ii)(A) introductory text, (e)(1)(ii)(A)(1), (e)(1)(ii)(A)(2), and (e)(1)(ii)(B) to read as follows:

**§ 535.7 Averaging, banking, and trading (ABT) program.**

(a) *Fuel consumption credits (FCC)*. At the end of each model year, primary and secondary manufacturers as specified in § 535.3 may earn credits for heavy-duty vehicles and engines exceeding the fuel consumption standards in § 535.5 or by using one or more of the flexibilities in this paragraph (a) to gain credits. Manufacturers may average, bank, and trade fuel consumption credits for purposes of complying with fuel consumption standards. The following criteria and restrictions apply to averaging, banking and trading FCC.

(1) *Averaging*. Averaging is the exchange of FCC among a manufacturer's engines or vehicle families or test groups within an averaging set. With the exception of FCC earned for advance technologies as further clarified below, a manufacturer may average FCC only within the same averaging set. The principle averaging sets are defined in § 535.4.

(2) *Banking*. Banking is the retention of surplus FCC by the manufacturer generating the credits for use in future model years for averaging or trading. Banked FCC retain the designation from the averaging set and model year in which they were generated and expire after five model years.

(3) *Trading*. Trading is a transaction that moves FCC between manufacturers for averaging, banking, or further trading transactions. Traded FCC, other than advanced technology credits, may be used by a manufacturer only within the averaging set in which they were generated. Entities other than manufacturers may only obtain traded FCC for the purpose of retiring them.

(b) \* \* \*

(9) Calculate the value of credits generated in a model year for this regulatory subcategory or averaging set using the following equation:

$$\text{Total MY Fleet FCC (gallons)} = (\text{Std} - \text{Act}) \times (\text{Volume}) \times (\text{UL}) \times (10^{-2})$$

Where:

Std = Fleet average fuel consumption standard (gal/100 mile).

Act = Fleet average actual fuel consumption value (gal/100 mile).

Volume = the total U.S.-directed production of vehicles in the regulatory subcategory.

UL = the useful life for the regulatory subcategory (120,000 miles).

\* \* \* \* \*

(c) \* \* \*

(11) \* \* \*

(i) Calculate the value of credits generated in a model year for each vehicle family or subfamily within an averaging set using the following equation:

$$\text{Vehicle Family FCC (gallons)} = (\text{Std} - \text{FEL}) \times (\text{Payload}) \times (\text{Volume}) \times (\text{UL}) \times (10^{-3})$$

Where:

Std = the standard for the respective vehicle family regulatory subcategory (gal/1000 ton-mile).

FEL = family emissions limit for the vehicle family or subfamily (gal/1000 ton-mile).

Payload = the prescribed payload in tons for each regulatory subcategory as shown in the following table:

Regulatory subcategory	Payload (Tons)
LHD Vocational Vehicles	2.85
MHD Vocational Vehicles	5.60
HHD Vocational Vehicles	7.5
Class 7 Tractor	12.50
Class 8 Tractor	19.00

Volume = the number of U.S. directed production volume of vehicles in the corresponding vehicle family.

UL = the useful life for the regulatory subcategory (miles) as shown in the following table:

Regulatory subcategory	UL (miles)
LHD Vocational Vehicles	110,000
MHD Vocational Vehicles	185,000
HHD Vocational Vehicles	435,000
Class 7 Tractor	185,000
Class 8 Tractor	435,000

\* \* \* \* \*

(d) \* \* \*

(11) \* \* \*

(i) The value of credits generated in a model year for each engine family within a regulatory subcategory equals:

$$\text{Engine Family FCC (gallons)} = (\text{Std} - \text{FCL}) \times (\text{CF}) \times (\text{Volume}) \times (\text{UL}) \times (10^{-2})$$

Where:

Std = the standard for the respective engine regulatory subcategory (gal/100 bhp-hr).

FCL = family certification level for the engine family (gal/100 bhp-hr).

CF= a transient cycle conversion factor in bhp-hr/mile which is the integrated total cycle brake horsepower-hour divided by the equivalent mileage of the applicable test cycle. For spark-ignition heavy-duty engines, the equivalent mileage is 6.3 miles. For compression-ignition heavy-duty engines, the equivalent mileage is 6.5 miles.

Volume = the number of engines in the corresponding engine family.

UL = the useful life of the given engine family (miles) as shown in the following table:

Regulatory Subcategory	UL (miles)
Class 2b-5 Vocational Vehicles, Spark Ignited (SI), and Light Heavy-Duty Diesel Engines	110,000
Class 6-7 Vocational Vehicles and Medium Heavy-Duty Diesel Engines	185,000
Class 8 Vocational Vehicles and Heavy Heavy-Duty Diesel Engines	435,000

Regulatory Subcategory	UL (miles)
Class 7 Tractors and Medium Heavy-Duty Diesel Engines	185,000
Class 8 Tractors and Heavy Heavy-Duty Diesel Engines	435,000

\* \* \* \* \*

(e) \* \* \*

(1) \* \* \*

(i) *Heavy-duty vehicles.* (A) This paragraph (e)(1)(i) specifies how to generate advanced technology-specific fuel consumption credits for hybrid vehicles, vehicles equipped with Rankine-cycle engines and fuel cell vehicles (or other vehicle specific advanced technologies) for which the manufacturer is requesting a vehicle certificate from EPA. Calculate the advanced technology credits as follows:

(1) Determine the equivalent fuel consumption for hybrid systems with power take-off devices either from chassis or powertrain testing emissions rates derived in accordance with 40 CFR 1037.525. Determine the equivalent fuel consumption for hybrid systems with pre or post-transmissions and for vehicles with other non-hybrid advanced technology systems from chassis testing emissions rates derived in accordance with 40 CFR 1037.550. Determine the equivalent fuel consumption in accordance with this paragraph unless EPA approves an alternative test procedure for the manufacturer.

Measure the effectiveness of the advanced system by chassis testing a vehicle equipped with the advanced system and an equivalent conventional system in accordance with 40 CFR 1037.525, 1037.550 and 1037.615.

(2) For purposes of this paragraph (e)(1)(i) a conventional vehicle is considered to be equivalent if it has the same footprint, intended vehicle service class, aerodynamic drag, and other relevant factors not directly related to the advanced system powertrain. If there is no equivalent vehicle, the manufacturer may create and test a prototype equivalent vehicle. The conventional vehicle is considered Vehicle A, and the advanced technology vehicle is considered Vehicle B.

(3) The benefit associated with the advanced system for fuel consumption is determined from the weighted fuel consumption results from the chassis tests of each vehicle using the following equation:

$$\text{Benefit (gallon/1000 ton mile)} = \text{Improvement Factor} \times \text{GEM Fuel Consumption Result}_B$$

Where:

$$\text{Improvement Factor} = (\text{Fuel Consumption}_A - \text{Fuel Consumption}_B) / (\text{Fuel Consumption}_A)$$

Fuel Consumption Rates A and B are the gallons per 1000 ton-mile of the conventional and advanced vehicles, respectively as measured under the test procedures specified by EPA.

GEM Fuel Consumption Result B is the estimated gallons per 1000 ton-mile rate resulting from emission modeling of the advanced vehicle as specified in 40 CFR 1037.520 and § 535.6(b).

(4) The manufacturer may apply the improvement factor to multiple vehicle configurations, if it uses the vehicle configuration with the smallest potential reduction in fuel consumption performance as a result of the hybrid capability.

(5) Calculate the benefit in credits using the equation in paragraph (c)(11) of this section and replacing the term (Std-FEL) with the benefit.

(B) For electric vehicles calculate the fuel consumption credits using an FEL of 0 g/1000ton-mile.

(ii) *Heavy-duty engines.* (A) This paragraph (e)(1)(ii) specifies how to generate advanced technology-specific fuel consumption credits for hybrid engines and for engines that include Rankine-cycle (or other bottoming cycle) exhaust energy recovery systems for which the manufacturer is requesting an engine certificate from EPA.

Calculate the advanced technology credits as follows:

(1) Determine the equivalent fuel consumption for hybrid engine systems with features that recover and store energy during engine motoring operation from the emissions rates derived in accordance with 40 CFR 1036.525.

(2) Determine the equivalent fuel consumption for hybrid pre-transmission powertrains that include energy storage systems and regenerative braking (including regenerative engine braking) and for engines that include Rankine-cycle exhaust energy recovery systems from the emissions rates derived in accordance with 40 CFR 1036.615. Hybrid pre-transmission powertrains are engine systems that include features that recover and store energy during engine motoring operation but not from the vehicle wheels.

Determine the equivalent fuel consumption of hybrid engines in accordance with this paragraph unless EPA approves an alternative test procedure for the manufacturer.

\* \* \* \* \*

(B) Calculate credits as specified in paragraph (d) of this section. Credits generated from engines complying with this section may be used in other averaging sets as described in 40 CFR 1036.740(d).

\* \* \* \* \*

61. Amend § 535.8 by:

a. Adding paragraph (a)(4); and

b. Revising paragraphs (d) introductory text, (d)(2), (e) introductory text, and (e)(2).

The additions and revisions read as follows:

**§ 535.8 Reporting requirements.**

(a) \* \* \*

(4) Manufacturers submitting petitions for the off-road exemption in paragraph (h) of this section should consider the timing to submit petitions early enough in advance of the model year to ensure that a determination can be made by the agencies and should a vehicle fail to be excluded the manufacturer has sufficient time to submit and obtain approval from EPA for the certificate of conformity required in 40 CFR 1037.201 prior to first commercial sale of the vehicle.

\* \* \* \* \*

(d) *End-of-the-year-report.* Heavy-duty vehicle and engine manufacturers participating and not-participating in the ABT program are required to submit an end-of-the-year (EOY) report containing information for NHTSA as specified in paragraph (d)(2) of this section and in accordance with 40 CFR 1036.250, 1036.730, 1037.104, 1037.250 and 1037.730. The EOY reports are used to review a manufacturer's preliminary or final compliance information and to identify manufacturers that might have a credit deficit for the given model year. For model years 2013 and later, heavy-duty vehicle and engine manufacturers complying with NHTSA's voluntary and mandatory standards must

submit EOY reports through the EPA database including both GHG emissions and fuel consumption information for each given model year.

\* \* \* \* \*

(2) *Contents*. Each EOY report must be submitted including the following fuel consumption information for each model year. EOY reports for manufacturers participating in the ABT program must include preliminary final estimates. EOY reports for manufacturers not participating in the ABT program and for heavy-duty pickup truck and van manufacturers must include finalized data.

(i) Engine and vehicle family designations and averaging sets.

(ii) Engine and vehicle regulatory subcategory and fuel consumption standards including any alternative standards used.

(iii) Engine and vehicle family FCLs and FELs in terms of fuel consumption.

(iv) Production volumes for engines and vehicles.

(v) A credit plan (for manufacturers participating in the ABT program) identifying the manufacturers actual fuel consumption credit balances, credit flexibilities, credit trades and a credit deficit plan if needed demonstrating how it plans to resolve any credit deficits that might occur for a model year within a period of up to three model years after that deficit has occurred.

(vi) A final summary as specified in paragraph (h)(6) of this section describing the vocational vehicles and vocational tractors that were exempted as heavy-duty off-road vehicles. This applies to manufacturers participating and not participating in the ABT program.

(vii) A summary describing any advanced or innovative technology engines or vehicles including alternative fueled vehicles that were produced for the model year identifying the approaches used to determinate compliance and the production volumes.

(viii) A list of each unique subconfiguration included in a manufacturer's fleet of heavy-duty pickup trucks and vans identifying the attribute based-values (GVWR, GCWR, Curb Weight and drive configurations) and standards. This provision applies only to manufacturers producing heavy-duty pickup trucks and vans.

(ix) The fuel consumption fleet average standard derived from the unique vehicle configurations. This provision applies only to manufacturers producing heavy-duty pickup trucks and vans.

(x) The subconfiguration and test group production volumes. This provision applies only to manufacturers producing heavy-duty pickup trucks and vans.

(xi) The fuel consumption test group results and fleet average performance. This provision applies only to manufacturers producing heavy-duty pickup trucks and vans.

(xii) Under limited conditions, NHTSA may also ask a manufacturer to provide additional information directly to the Administrator if necessary to verify the fuel consumption requirements of this regulation.

\* \* \* \* \*

(e) *Final reports.* Manufacturers participating in the ABT program are required to submit year end final reports in accordance with 40 CFR 1036.730 and 1037.730 to NHTSA and EPA. Manufacturers of heavy-duty pickup trucks and vans are excluded from this requirement and are required to submit only one EOY report as specified in paragraph (d) of this section. The final reports are used to review a manufacturer's final data and to

identify manufacturers that might have a credit deficit for the given model year. For model years 2013 and later, heavy-duty vehicle and engine manufacturers complying with NHTSA's voluntary and mandatory standards must submit final reports through the EPA database including both GHG emissions and fuel consumption information for each given model year.

\* \* \* \* \*

(2) *Contents*. Each final report must be submitted including the following fuel consumption information for each model year.

- (i) Final engine and vehicle family designations and averaging sets.
- (ii) Final engine and vehicle fuel consumption standards including any alternative standards used.
- (iii) Final engine and vehicle family FCLs and FELs in terms of fuel consumption.
- (iv) Final production volumes for engines and vehicles.
- (v) A final credit plan identifying the manufacturers actual fuel consumption credit demonstrating how it plans to resolve any credit deficits that might occur for a model year within a period of up to three model years after that deficit has occurred
- (vi) A final plan describing any advanced or innovative technology engines or vehicles including alternative fueled vehicles that were produced for the model year identifying the approaches used to determinate compliance and the production volumes.
- (vii) Under limited conditions, NHTSA may also ask a manufacturer to provide additional information directly to the Administrator if necessary to verify the fuel consumption requirements of this part.

\* \* \* \* \*



Dated: May 9, 2013

Ray LaHood, Secretary, Department of Transportation

Dated: May 9, 2013

Bob Perciasepe, Acting Administrator, Environmental Protection Agency

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