

**Supporting Statement for**  
**Information Collection Request**

Notice of Proposed Rulemaking  
Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty  
Engines and Vehicles  
EPA ICR Tracking Number 2394.01

Office of Transportation and Air Quality  
Office of Air and Radiation  
U.S. Environmental Protection Agency

And

National Highway Traffic Safety Administration  
U.S. Department of Transportation

## 1. Identification of the Information Collection

### 1 (a) Title and Number of the Information Collection

Control of Greenhouse Gas Emissions from New Motor Vehicles: Proposed Heavy- Duty Engine and Vehicle Standards

OMB Control Number 2060-NEW, EPA ICR Tracking Number 2394.01.

### 1(b) Short Characterization

The Environmental Protection Agency (EPA) and the National Highway Traffic and Safety Administration (NHTSA) are jointly proposing new standards to address greenhouse gas (GHG) emissions and fuel consumption in the heavy-duty (HD) trucking sector. As a result of these proposed standards, HD engine and HD vehicle manufacturers would be subject to new testing, reporting, and recordkeeping requirements. The paperwork and cost burdens associated with these new requirements are identified in this ICR.

Historically, EPA's approach to regulating the heavy-duty trucking sector has been to set standards that reduce emissions from a truck's engine. The agency's focus on reducing HD engine emissions is due mostly to the fact that engine characteristics are primarily responsible for emissions of "criteria pollutants," including carbon monoxide, nitrogen oxides, ozone, and particulate matter. The agency also chose to regulate engines for other reasons, including: the great diversity in the design, use and performance of heavy-duty vehicles; the complexity of the heavy-duty truck sector, where in many cases, the engine and chassis - or body of a truck - are produced by different manufacturers; and the efficiency of regulating and holding a single entity (HD engine manufacturers) responsible for testing and ensuring compliance.

Reducing GHG emissions and the fuel consumed by heavy-duty vehicles, however, requires a different approach, as is reflected in the standards and program EPA and NHTSA are proposing. This joint new HD National Program aims to lower GHG emissions and fuel use by establishing both **engine and vehicle** standards.

Consistent with the structure of the proposed HD National Program, the testing and reporting

guidelines described in this ICR would cover heavy-duty gas and diesel engines, and the three regulatory categories of heavy-duty vehicles, as listed in Table 1-1.

<b><u>Table 1-1</u></b>	
<b>EPA/NHTSA Proposed HD National Program Vehicle Categories and Engines</b>	
Heavy-duty Pickup Trucks and Vans	Combination Tractors
Vocational Trucks	Heavy-duty Gas and Diesel Engines

Importantly, the proposed HD National program would utilize the existing reporting and testing infrastructure already in place for heavy-duty engines, and for heavy-duty pickup trucks and vans. Under EPA regulations covering criteria pollutants, heavy-duty engine and pickup truck and van manufacturers already administer extensive emissions testing and reporting programs.

Now, under the HD GHG proposal, HD engine and pickup truck and van manufacturers would be required to add CO<sub>2</sub>, methane (CH<sub>4</sub>), and nitrogen oxide (N<sub>2</sub>O) and equivalent fuel consumption values to their testing and reporting programs. Heavy-duty truck and van manufacturers also would be subject to testing and reporting requirements covering hydrofluorocarbons (HFC) emissions from vehicles equipped with air conditioning units.

Manufacturers of vocational truck chassis and combination tractors have never before been required to test their vehicles for emissions or fuel consumption. As a consequence, these manufacturers will need to put in place new testing programs, and establish new reporting and recordkeeping systems but will be allowed to meet reporting provisions for both EPA and NHTSA using a single set of data.

EPA has developed a truck simulation model, the Greenhouse gas Emissions Model (GEM) for demonstrating compliance with the vocational truck and combination tractor standards. GEM would be preprogrammed by EPA and NHTSA with a number of key inputs that would greatly simplify testing and reporting procedures for manufacturers of vocational truck chassis and combination tractors. The GEM model will be directly available to vocational truck chassis and combination tractor manufacturers as a download from the internet and is discussed in more detail later in this ICR. Using a simulation model, rather than requiring chassis testing, should greatly reduce potential testing and reporting burdens.

Under the proposal, manufacturers of vocational truck chassis and combination tractors would only be required to report CO<sub>2</sub> emissions and fuel consumption, not CH<sub>4</sub> and N<sub>2</sub>O emissions, also helping to reduce their testing and reporting burden. Combination tractor manufacturers,

however, would be subject to testing and reporting requirements for HFC emissions from cabs equipped with air conditioning units.

Approximately 12 engine manufacturers and 15 vehicle manufacturers will submit applications to certify their products and respond to the information collection activities included in the proposed HD National program. Beginning in calendar year 2013, these proposed collection activities are estimated to impose annual costs of \$5.2 million and a labor hour burden of 25,052 hours on manufacturers affected by the program.

## 2. Need for and Use of the Collection

### 2(a) Need/Authority for the Collection

Under Title II of the Clean Air Act (42 U.S.C. 7521 et seq.), EPA is charged with issuing certificates of conformity for motor vehicle designs and engines that comply with applicable emission standards set under section 202(a)(1) of the Act, such as those for CO<sub>2</sub>, N<sub>2</sub>O, and CH<sub>4</sub> in the proposed regulation. This authority was clarified in the Supreme Court's decision State of Massachusetts v. EPA, 549 U.S. 497 (2007) (holding that greenhouse gases are pollutants under the Clean Air Act). Under the statutory authority of 49 U.S.C. 32902, NHTSA is mandated to require manufacturers to comply with fuel economy and consumption standards.

A manufacturer must have a certificate of conformity before a vehicle or engine may be legally introduced into commerce. To ensure compliance with the Act, EPA annually reviews product information and manufacturer test results; EPA also tests some engines and vehicles to confirm manufacturer results. A manufacturer must also meet the fuel economy/consumption standards specified by NHTSA and to ensure compliance with these standards the agency reviews the product and testing information submitted by the manufacturers and verified by EPA.

EPA's emission certification programs and NHTSA's fuel economy/consumption programs are statutorily mandated; the Agencies do not have discretion to cease these functions. Specifically, under Section 206(a) of the CAA (42 USC 7521):

"The Administrator shall test, or require to be tested in such manner as he deems appropriate, any new motor vehicle or new motor vehicle engine submitted by a manufacturer to determine whether such vehicle or engine conforms with the regulations prescribed under §202 of this Act. If such vehicle or engine conforms to such regulations, the Administrator shall issue a certificate of conformity upon such terms, and for such period (not in excess of one year) as he may prescribe."

In addition to test results, as part of their application for a certificate of conformity, under CAA §217, manufacturers are required to pay an application fee when applying for a vehicle or engine certificate. At this time, the exact costs associated with the heavy-duty vehicle GHG

compliance are not known. When EPA finalizes a cost assessment of its compliance program, it will amend its fees regulations to include any warranted new costs.

EPA and NHTSA also propose in 40 CFR Parts 1036.701 and 1037.701, and in 49 CFR Part 535, an Average, Banking and Trading (ABT) program, for engine and vehicle manufacturers covered by the proposed HD program. These programs and others like it are designed to enhance compliance flexibility and reduce the burden on affected manufacturers, without compromising the expected emissions benefits derived from EPA's emissions standards and NHTSA's fuel economy and consumption standards.

EPA and NHTSA's proposed new GHG and fuel consumption standards for HD engines and vehicles would amend 40 CFR Part 86 subchapter U with the addition of two new parts: part 1036 (engines) and part 1037 (vehicles). It would also amend 49 CFR Parts 523, 534, 535. Other existing regulations that pertain to controlling emissions from these engines and vehicles can be found in 40 CFR Parts 86, 1065, and 600. These regulations are not attached to this statement due to their length and technical nature.

2(b)

Practical Utility/Users of the  
Data

The testing data submitted by manufacturers is needed for EPA and NHTSA to verify that manufacturers have selected the proper engine and vehicle prototypes, and conducted the testing necessary to demonstrate that their equipment will comply with the emissions and fuel consumption standards the agencies are proposing. Once the engines and vehicles have been produced, EPA and NHTSA also use the information to support various enforcement actions, such selective enforcement audits and in-use compliance testing.

As noted, the proposed HD proposals for EPA and NHTSA include Average, Banking and Trading programs and other regulatory flexibilities that allow manufacturers to generate emission credits. For manufacturers that choose to participate and take advantage of these flexibilities, EPA and NHTSA collect data to ensure that allowable emission and fuel consumption credits are properly allocated, traded and applied.

The information will be received and used by CISD, OTAQ, OAR within EPA. Other EPA offices and divisions also may access the data to assess the effectiveness of the HD National program. Information also will be shared with NHTSA as needed. Non-confidential portions of the information submitted to CISD is available to and may be used by importers, engine users, environmental groups, members of the public and state and local government organizations.

3. Nonduplication, Consultations and Other Collection Criteria

3(a) Nonduplication

The information requested under this ICR is required by statute. Because of its specialized (and sometimes confidential nature), and the fact that it is submitted to jointly to EPA and shared with NHTSA prior to the start of production, the information collected is not available from any other source. Information submitted under the ABT program is submitted voluntarily by manufacturers choosing to utilize those provisions.

### 3(b) Public Notice Required Prior to ICR Submission to OMB

Through the proposed rulemaking that EPA and NHTSA are issuing, EPA is seeking public comment on the testing, reporting, and recordkeeping burdens outlined in this ICR and associated with demonstrating compliance with the proposal's GHG and fuel consumption standards.

### 3(c) Consultations

The proposed regulations, including the cost analysis that is reflected in this ICR, were developed based on experience with similar regulations developed in the past in close consultation with the affected industry. Prior to publication of the proposal, EPA also met extensively with individual manufacturers, groups of manufacturers, industrial trade associations, public interest groups, environmental and professional industry organizations.

In preparing this ICR submission, EPA considered these discussions. Following the publication and formal request for comment on its proposed GHG emission standards, EPA will further develop the testing, reporting and recordkeeping requirement included in this ICR, as needed.

### 3(d) Effects of Less Frequent Collection

The CAA states that emission certification must be done on a yearly basis (CAA 206(a)(1)), coinciding with the industry's 'model year'. Major product changes typically occur at the start of a model year. For these reasons, a collection frequency of less than a model year is not possible. However, when an engine or vehicle design is "carried over" to a subsequent model year, the amount of new information required may be substantially reduced.

### 3(e) General Guidelines

Under sections 1036.250 and 1037.250 of the proposed regulations, copies of all applications sent to EPA including, certification, ABT, and end-of-the-year reports, must be kept and maintained for eight years. These records may be stored in any format and on any media, as long as they are organized and can be sent promptly to EPA, if requested. These recordkeeping requirements stem, in part, from the statutory requirement to warrant some items for long periods of time. Manufacturers also must comply with requirements to submit to an EPA audit, and recall vehicles and engines failing to meet emission standards during their useful lives. Other data, (such as routine

emissions tests, i.e.: test cell temperatures and relative humidity readings, etc.) need to be kept for only one year after a certificate of conformity is issued.

Manufacturers are required to submit confidential business information such as sales projections and certain sensitive technical descriptions (see section 4(b)(i) for reference). This information is kept confidential in accordance with the Freedom of Information Act, EPA regulations at 40 CFR Part 2, and class determinations issued by EPA's Office of General Counsel. Also, non-proprietary information submitted by manufacturers is held as confidential until the specific vehicle or engine to which it pertains is available for purchase.

No other general guideline is exceeded by this information collection.

3(f) Confidentiality

Manufacturers are allowed to assert a claim of confidentiality over information provided to EPA. Confidentiality is provided in accordance with the Freedom of Information Act and EPA regulations at 40 CFR Part 2. For further detail, refer to section 3(e), above.

3(g) Sensitive Questions

No sensitive questions are asked in this information collection. This collection complies with the Privacy Act and OMB Circular A-108.

4. Respondents and Information Requested

4(a) Respondents/SIC Codes

Respondents are manufacturers of non-road engines within the North American Industry Classification System (NAICS) codes listed in Table 4-1 below:

Table 4-1  
North American Industry Classification (NAICS) Codes  
Examples of Potentially Regulated Industry Segments

Category	NAICS Codes	Examples of Potentially Regulated Entities
Industry	336111 336112 336120	Motor vehicle manufacturers.
Industry	336111 336312 422720 454312 541514 541690 811198	Alternative fuel vehicle converters
Industry	811112 811198 541514	Commercial Importers of Vehicles and Vehicle Components

4(b) Information Requested

All manufacturers will be required to submit an application for emission certification prior to production in addition to pre-model and pre-production documents. NHTSA requires manufacturers to determine fuel consumption values and provide the results along with submissions sent to EPA. The proposed rule would have an effective date in time for model year 2014. Under this timeframe, manufacturers would begin to test and submit their applications and other pre-production documents to EPA and NHTSA in 2013. The time horizon of this ICR is intended to cover the annualized impacts of the proposal at the time that manufacturers initiate their testing and compliance activities. Some activities, however, would not begin immediately. For example, heavy duty truck and van manufacturers would not need to measure N<sub>2</sub>O emissions using test analyzers until 2015. For the first year, manufacturers can provide N<sub>2</sub>O emissions data based on an analysis and on good engineering judgment.

Applications would be submitted for specific engine or vehicle “families” that share certain design and emissions characteristics. The application for a certificate of conformity will describe key aspects of the manufacturer’s proposed product line; controls put in place to reduce GHG emissions; and test results that demonstrate compliance with emission standards. The application and supporting test results are reviewed by EPA and, if appropriate, a certificate of conformity is issued.

Manufacturers would also submit end of the year reports to EPA and NHTSA containing finalized production, emissions and fuel consumption test results and credit balances.



(i) Data Items

Brief summaries of the new data items that would be collected from engine manufacturers and the three regulatory categories of the heavy duty truck manufacturers covered by the proposal are provided below. A more detailed list of the data items to be collected and the recordkeeping requirement for these vehicle manufacturers is given in Tables 4-2 and 4-3.

Although most of these items are included in the certification application, other items would only be kept as records and submitted upon request, as proposed in sections 1036.250 and 1037.250.

All manufacturers would be required to submit their applications, test data and related information to EPA electronically via the agency's Verify information system. The same information will also be provided to NHTSA. For manufacturers, these electronic reporting requirements may generate some start up costs for programming computer systems so that data can be submitted to EPA in the necessary formats. These burdens are summarized in Table 6-2 and detailed in Tables 6-4, 6-5, 6-6 and 6-7.

*Heavy Duty Pick Up Trucks and Vans*

The vast majority of heavy duty pickup trucks and vans are designed, manufactured and sold by manufacturers as complete vehicles, and many of these truck and van models already are certified to vehicle-based emission standards for criteria pollutants. Further, these heavy duty truck/van models are typically based on higher sales volume light duty truck/van designs and models, which are already subject to GHG emission and fuel economy standards under the joint light-duty vehicle program promulgated by EPA and NHTSA in March 2010.

Thus, the proposed HD national certification program closely tracks the testing procedures and reporting program already in place for this segment of the HD truck sector. For example, the proposed test procedures, GHG and fuel consumption standards for pickup trucks and vans would apply to the complete vehicle. This differs from the separate engine and vehicle standards which EPA and NHTSA are proposing for the other heavy-duty categories covered by the proposal. (The preamble to the proposed rule explains the difference in approach.)

Specifically, exhaust emission standards are being proposed for CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O, and compliance requirements similar to those in effect for light duty trucks and vans are proposed for HD pickup trucks and vans. Proposed test procedures for measuring and reporting these emissions can be found in the part 1037 subparts B and F, which also include

references to existing testing protocols for HD pickup trucks and vans. In addition, HD pickup trucks and vans are subject to HFC leakage standards as proposed under part 1037.115(c).

In other ways, the proposed regulations for HD trucks and vans are unique. For example, EPA and NHTSA are proposing weight-based attributes, namely payload and towing capacity, to establish emission targets that manufacturers will consider when establishing vehicle test groups. These attributes also would be established the individual vehicle targets which are factored into the production volume-weighted calculation of a manufacturer's annual fleet average compliance requirement.

EPA expects that by basing its CO<sub>2</sub> emission standards on these weight-based attributes, manufacturers will need to identify at least 4 vehicle families for HD pickup trucks and 4 vehicle families for vans. Between 10 and 15 vehicles within each family will need to be tested to demonstrate compliance with the proposed fleet average, in-use, and where applicable, evaporative and refueling emission standards. To demonstrate compliance, these test vehicles also would be subject to both chassis testing and some initial coast down testing.

### *Engine Manufacturers*

For engine manufacturers, the information and reporting burden associated with this proposed rule would occur within the context of EPA's existing engine certification program for controlling criteria pollutants. In constructing a program to address GHG pollutants, EPA has proposed to build upon this existing infrastructure, thus creating minimal new certification testing and reporting requirements for engine manufacturers.

For example, EPA believes that the selection criteria used to determine criteria pollutant engine families are equally applicable for defining CO<sub>2</sub> emissions performance, and that having two distinct family designations per engine (one for criteria pollutants and one for CO<sub>2</sub>) would be overly burdensome without adding any benefit. Consequently we are proposing that the same selection criteria, as outlined in 40 CFR Part 86, Subpart N, be used to define single engine family designation for both criteria pollutant and GHG emissions.

Further, tests used today to demonstrate compliance with criteria pollutants also include provisions for measuring GHGs, and in the proposal, compliance with NHTSA's fuel consumption standards and with EPA's GHG standards would be established with these same tests, the Heavy Duty Federal Test Procedure (FTP) and Supplemental Engine Test (SET). However, depending on the type of vehicle in which the engine would be placed, manufacturers would be required to identify relevant test results (steady state, transient or steady state and transient test results) in their certification application.

In addition, the proposal would require engine manufacturers to report CH<sub>4</sub> and N<sub>2</sub>O at the time of certification. Although CH<sub>4</sub> emissions can be accurately measured using existing engine tests, N<sub>2</sub>O emissions cannot. In lieu of a direct measurement of N<sub>2</sub>O in the first year

of the program, manufacturers would be allowed to use a compliance statement based on good engineering judgment. However, beginning in the 2015 model year, the proposal would require direct measurement of N<sub>2</sub>O for certification, thus imposing capital costs to install N<sub>2</sub>O analyzers. These costs are reflected in Table 6-5.

With the exception of these proposed new certification requirements for heavy duty engines, EPA is proposing that the existing compliance structure that engine manufacturers use for criteria pollutants is also valid for demonstrating compliance with the proposed GHG regulations. Specifically, engine manufacturers may utilize the emissions and durability testing, deterioration factors, warranty and service programs already in place for CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O as outlined in 40 CFR Part 86.

Lastly, the proposal would only require engine manufacturers to modify the applications for certification they already submit under 40 CFR 86.007-21 with the addition of data relevant to CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O, as described in section 1036.205.

#### *Vocational Trucks and Combination Tractors*

Unlike the engine and pickup truck and van segments of the HD truck sector, fuel consumption and emissions from vocational trucks and combination tractors have been largely unregulated, and EPA recognizes that its proposed HD national program presents these segments with several new testing, reporting and recordkeeping requirements.

For both these vehicle categories, EPA and NHTSA are proposing standards that focus on reductions that can be achieved through vehicle design, such as tires and other vehicle systems. Both the fuel consumption and CO<sub>2</sub> standards are expressed in terms of moving a ton of freight over one mile: the fuel consumption standard is represented as gallons of fuel used to move one ton of freight (payload) 1000 miles, or gal/1000 ton-mile; and the proposed CO<sub>2</sub> vehicle standards would be represented as grams of CO<sub>2</sub> per ton-mile.

Under the proposal, manufacturers would evaluate CO<sub>2</sub> emissions and fuel consumption through a simulation of the complete vehicle using GEM (Greenhouse gas Emissions Model), a truck model developed by EPA for this purpose.

GEM has been programmed by EPA with two sets of predefined parameters; one set of parameters for vocational trucks, and a second set of parameters for combination tractors. Values for these predefined parameters are detailed in the proposed rule, and include several key vehicle characteristics common to the vocational truck and tractor configurations covered under the proposal. These characteristics include vehicle frontal area dimensions; total and payload weight; engine/transmission/wheel inertia, accessory load, axle base, tire radius, and engine fuel map, among others. Additional predefined inputs, unique to combination tractors, such as trailer tire coefficient of rolling resistance (C<sub>rr</sub>), also are included.

These preprogrammed inputs will substantially reduce the testing burden on manufacturers of vocational truck chassis and combination tractors.

Manufacturers would however, test their vehicles, collect data and input at least two key data elements (based on testing) prior to running GEM. As discussed below, these two inputs are: 1) the coefficient of rolling resistance (Crr) of the vehicle's steer and drive tires; and (for combination tractors) 2) the aerodynamic drag (expressed as the vehicle's coefficient of drag or "Cd") of a truck. Additional inputs needed to run GEM include basic information, such as manufacturer identification, and engine and vehicle "family" names.

Both vocational truck chassis and combination tractor manufacturers will need to secure test data from their tire suppliers specifying the Crr of the tires purchased for their vehicles. Tire manufacturers already are conducting tests to establish the Crr of their tires, so the ICR assumes some burden associated with collecting and reporting this data, but it does not assume any new testing costs.

Combination tractor manufacturers, however, will need to conduct coast down tests to establish the aerodynamic drag – or Cd – of their vehicles. Vocational truck chassis manufacturers would not be subject to a requirement to test and establish drag for their vehicles, because the fuel consumed and emissions generated by these trucks are not typically affected by aerodynamics.

EPA expects that tractor manufacturers initially will conduct coast down tests to establish and confirm the aerodynamic Cd of their vehicles during the first phase of the HD National program. Under the proposed regulations, coast down testing is the basic test method proposed for combination tractors because industry has existing and well-established methods for vehicle coast down tests. Other tests, including wind tunnel and computational fluid dynamics, are available, but under the proposal, coast down testing would be required to corroborate results from those tests, if a manufacturer chooses to use them.

At this time EPA recognizes that manufacturers may not have the facilities or onsite expertise necessary to conduct coast down testing in house. Consequently, the ICR assumes that manufacturers will work with testing contractors that possess the expertise and facilities to meet the proposal's testing requirements for those models covered by the proposal in the first year of production and until the model changes. Thus, most of the testing burden for tractor manufacturers is presented as operations and maintenance costs, assuming that manufacturers will contract out the majority, if not all testing needed to establish the Cd for their vehicles, and subsequently to run GEM.

Tractor manufacturers also will have options for including other parameters in the GEM model, if their vehicles are equipped with technologies to reduce idling, lower vehicle weight and limit speed.

Table 4-2  
Key Information Items Requested  
HD National Certification Program, Proposed Regulations

<b>*Engine Manufacturers Section 1036.205</b>	<b>Vehicle Manufacturers Section 1037.205</b>
Description of engine/vehicle families as related to requirements for GHG standards, including CO <sub>2</sub> , CH <sub>4</sub> and N <sub>2</sub> O, as applicable	
Description of emission control system, including auxiliary-emission control devices to be installed on production vehicles	
Description of test vehicles selected for testing and rationale for selection	
Description of test procedures and equipment, including alternate tests if applicable	
Instructions for Engine Installation	
Describe Label Information	
Engine placement (combination tractors, vocational trucks)	
Intent to participate in Average, Banking & Trading and/or other available emissions credit programs	
Family Certification Limits	
Family Emission Limits	
Statement of Compliance	
Good-faith estimates of U.S. production volumes	
Amendment to certification application	
Name of U.S.-based service agent	

*\*Proposed regulations permit engine manufacturers to submit an application as described in 40 CFR Part 86.007-21 with the inclusion of data items listed in section 1036.205, including those identified here.*

Table 4-3  
Key Recordkeeping requirements, HD National Certification Program  
*Records are to be kept for eight years, except routine emission records that are to be kept for only one year.*

Information Item	*Engine Manufacturers	Vehicle Manufacturers
<b>General records:</b>	1036.205	1037.205
Identification and description of all engines and vehicles for which testing is required		
Description of emission control system		
Description of test procedures and supporting documents demonstrating compliance		
<b>Individual Records:</b>	1036.825	1037.825
Copies of all applications submitted		
Test records, instructions and other data provided to or received from other manufacturers (for example: emissions-related engine installation instructions, instructions for air conditioning installation, etc.)		
A complete record of all emission tests performed		
A complete record of all model inputs		
Record and description of each test performed to diagnose engine and vehicle emissions		

(ii) Respondent Activities

The types of activities a manufacturer would do to certify an engine or vehicle family are as follows:

- Review the regulations and guidance document
- Develop engine or vehicle family groups
- Test engines and vehicles for compliance with emission and fuel consumption standards
- Gather test results and inputs and run GEM, as needed
- Submit the Application for Certification
- Submit annual production reports
- Prepare and submit carryover applications
- Prepare GHG compliance plan, as needed
- Store, file and maintain records

5. The Information Collected--Agency Activities, Collection Methodology, and Information Management

5(a) Agency Activities

As part of the implementation of the certification programs, EPA and NHTSA officials carry out the following activities:

- Review and interpret regulations, provide guidance
- Review certification applications for completeness and accuracy
- Verify that the correct engines and vehicles have been selected and tested
- Answer questions from manufacturers and the public
- Issue appropriate certificates of conformity
- Periodically perform maintenance or enhance the database
- Make data available to the public
- Analyze and manage requests for confidentiality
- Determining if "carry over" of data from a previous model year is appropriate or if new testing will be required
- Store, file and maintain data

5(b) Collection Methodology and Management

EPA and NHTSA currently make extensive use of computers in collecting information from vehicle manufacturers. Essentially all applications for certification and related product descriptions, test results, ABT and end of year reports, etc.) are submitted to EPA electronically through the agency's Verify system and to NHTSA through its website. Once the data is received, the information is uploaded, monitored and reviewed for completeness by EPA and NHTSA.

The public can access non-confidential portions of the certification applications and test data by contacting CISD or through the Certification Information Center at <http://www.epa.gov/otaq/certdata.htm>.

5(c) Small Entity Flexibility

As discussed in the preamble of the proposed regulation, the respondent class for this rule would be defined to exclude those manufacturers who would fall into the definition of small business entities, except for a once-per-year declaration of small business status.

5(d) Collection Schedule

Information must be submitted for each "model year" that a manufacturer intends to build (or import) vehicles. For emissions and fuel consumption purposes, a "model year" is statutorily defined as the annual production period of a manufacturer, as decided by the Administrator, that includes January 1 of that calendar year; or that calendar year if the manufacturer does not have an annual production period.

During the model year, the results of such additional fuel consumption and greenhouse gasses tests as the manufacturer conducts are also reported to EPA and NHTSA. After the end of the model year fleet-wide greenhouse gasses emissions are reported. If a product is unchanged between model years, much of the information can be “carried over.” The collection frequency and burden are determined to a large extent by the manufacturer’s marketing and production plans. However, as required by law, some submission is required for each model year’s production.

6. Estimating the Burden and Cost of the Collection

Tables 6-4, 6-5, 6-6, and 6-7 at the end of this section provide details on collections costs. These tables represent burdens and costs for manufacturers of HD engines and the three new vehicle categories covered by the HD National Program.

6(a) Estimating Respondent Burden

Burden estimates were taken from the previous ICRs and adjusted to reflect EPA experience in these and other similar programs.

6(b) Estimating Respondent Costs

(i) Estimating labor costs

To estimate labor costs, EPA used the Bureau of Labor Statistics’ National Industry-specific Occupational Wage Estimates (2009) for the Manufacturing Industry (NAICS 31-33), Transportation Equipment Manufacturing Subsector (NAICS 336) and the Professional, Scientific, and Technical Services Sector (NAICS 54). These rates were increased by a factor of 2.1 to account for benefits and overhead. The specific rates used are listed below in Table 6-1. These are mean hourly rates.



**Table 6-1  
Labor Costs Estimates**

Occupation	Mean Hourly Rate (BLS)	110%
Mechanical Engineers	\$39.16	\$82.24
Engineering Managers	\$50.71	\$106.50
Test Cell Operator	\$23.05	\$48.40
Lawyers	\$65.81	\$138.20
Secretaries, Except Legal, Medical and Executive	\$14.95	\$31.39

(ii) Estimating Capital, Operations and Maintenance Costs

Operations and Maintenance costs include the non-labor costs associated with conducting new tests that are proposed for the model year 2014 and after. Costs are for laboratory time, the use of test equipment, vehicle and engine parts, fuel and other supplies.

EPA expects that although all vehicle and manufacturers covered by the proposal are likely to contract out at least some of their testing, and that O&M costs will be highest for manufacturers of combination tractors. Under the proposed regulations, coast down testing is the preferred test method proposed for combination tractors. As noted, at this time manufacturers have neither the facilities nor onsite expertise necessary to conduct coast down testing (or other proposed test alternatives) in house. Consequently, the expectation is that HD tractor manufacturers will work with testing contractors that possess the expertise and facilities to meet the proposal's testing requirements for those models covered by the proposal in the first year of production and until the model changes. As indicated in Table 6-7, these test costs amount to \$1,512,000, or approximately \$9,540 for each tractor tested. This estimate is based on 4 manufacturers, each testing approximately 40 tractors to ensure compliance.

EPA also expects that manufacturers of class 2b/3 heavy duty trucks and vans would contract out some of their vehicle testing. These manufacturers may find it necessary to do so due to the volume of testing they will need to conduct, and the capacity of their testing facilities. In the first

year of the program, in addition to running more vehicles through HFET chassis testing, heavy duty truck and van manufacturers also will need to initially conduct coast down testing to demonstrate compliance. In addition, these manufacturers also may be conducting more tests on the light duty equivalents of their heavy duty trucks and vans. As a consequence, this ICR conservatively assumes additional operations and maintenance costs for the heavy duty truck and van manufacturers subject to the proposed GHG and fuel consumption standards, especially in the first year or two of the program. For coast down testing, total test costs are estimated at approximately \$396,000 for the heavy duty truck and van category, or approximately \$1,200 for each vehicle tested. This estimate is based on 3 manufacturers, each testing approximately 110 vehicles to demonstrate compliance.

(iii) Capital/Start Up Costs

Startup costs are one-time costs to implement the new requirements in the proposal that are applicable to the first year of the program. These startup costs fall into two categories.

First, under the HD National program all manufacturers will incur some startup costs associated with familiarization of the new data reporting requirements and installation of information management systems that will enable them to implement, report and maintain records of the necessary data and calculations. For engine and heavy duty pickup truck and van manufacturers these burdens will be relatively simple add-ons to well established reporting information management systems, since these two categories of the HD truck sector already submit similar data to EPA.

In the first year of the program, engine manufacturers may estimate and report N2O emissions using good engineering judgment, as described in part 1036.150(b) of the proposed regulations. Starting in 2015, however, engine manufacturers will incur start up costs when they will be required to actually measure N2O emissions using equipment, specifically an N2O analyzer. Prior to 2015, EPA expects that engine manufacturers will invest in the appropriate N2O analyzer. These costs are reflected in Table 6-4 and assuming that 12 manufacturers purchase two N2O analyzers at \$50,000 each, the total amounts to \$1.2 million.

6(c) Estimating Agency Burden

Existing heavy duty certification and compliance programs are administered by EPA's Compliance and Innovative Strategies Division (CISD). CISD works closely with the Agency's Laboratory Operations Division (LOD) to establish and implement testing programs that enable the Agency to ensure compliance with its mobile source emissions standards. Together CISD and LOD have identified resources that would be needed to support the National HD program, including FTE (full time equivalent) and information system upgrades.

Implementation of the proposed HD GHG standards will be carried out in part by existing staff, but will rely primarily on the hiring of 10 new FTE. These new FTE will be split between developing and conducting HD test related activities -- both in the field and out of EPA's National

Vehicle and Fuel Emissions Laboratory -- as well reviewing certification applications, evaluating test and related technical documents, and tracking credit programs.

We project 400 hours per week of staff time at \$80 per hour (loaded to include benefits and overhead) will be expended by EPA to manage compliance related to the new GHG emission and fuel consumption standards. This comes to 20,800 hours or \$1.664 million per year to oversee the requirements of the programs associated with this ICR. These labor estimates are based on Office of Personnel Management labor rates effective January 2010, with a 2.1 multiplier used to account for benefits and overhead. We do not anticipate any additional time for NHTSA staff, since compliance and implementation of the rule will be undertaken solely by EPA.

In addition to FTE costs, the Agency will need to upgrade Verify, its engine and vehicle compliance information system. Verify is used to collect emissions and fuel economy compliance information for all types of vehicles, and it is the information management system that will be used to support the HD National program.

Upgrades to Verify will include the addition of developing formats to enable collection and ensure the accuracy of the data elements summarized in 4(b)(i). EPA estimates it will incur a one-time development cost of \$1 million and ongoing, annualized support costs of \$150,000.00.

#### 6(d) Estimating the Respondent Universe and Total Burden and Costs

##### 6(d)(1) Certification Estimates

There are 12 companies in this sector which manufacture on-highway heavy-duty engines and 15 companies that manufacture vehicles that will be required to meet the proposed new greenhouse gas emission standards. Notably, although EPA has established distinct standards for the three vehicle categories covered by this rule: 1) heavy duty pickup trucks/vans; 2) vocational trucks; and 3) combination tractors -- many manufacturers are producing vehicles in more than one of these categories, and thus will be required to submit multiple certification applications.

In total, EPA projects that related to the HD National Program, it will receive 299 applications for certification, as follows:

##### **Engine Manufacturers**

Engine manufacturers and heavy-duty truck and van manufacturers are currently regulated by EPA and are already familiar with EPA regulations, policies and certification program. Under the proposed regulations, engine manufacturers will not be required to submit new certification applications, but will need to add CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O test information and results to their applications. EPA expects that it will receive approximately 108 such amended applications from engine manufacturers in the future.

##### **HD Pickup Trucks and Vans**

Although subject to regulation for non-GHG emissions in the past, heavy duty truck and van manufacturers have not been required to submit certification applications for GHG emissions and fuel consumption limits. To comply with the proposed new GHG emission and fuel consumption standards, EPA expects to receive 24 certification applications from heavy duty truck and van manufacturers.

**Vocational Truck Chassis and Combination Tractors**

From vocational truck chassis manufacturers EPA expects to receive 135 applications; and from combination tractor manufacturers the Agency estimates it may receive 32 applications for certification.

Table 6-2 below, summarizes the labor, start up and operations and maintenance costs associated with meeting the proposed GHG and fuel consumption standards. Tables 6-4, 6-5, 6-6 and 6-7 detail costs for the four categories of vehicle manufacturers affected by the proposal. These tables can be found starting on page 21.

6(e) Bottom Line Burden Hours and Cost Tables

*(i) Respondent Tally*

Bottom-line burden and cost estimates for the first three years of the HD National Program are shown in the table below. The table shows industry totals and average values for each respondent by category.

**Table 6-2  
Total Estimated Respondent Burden and Cost Summary**

Manufacturer Program	Number of Respondents	Number of Activities	Total Hours Per Year	Total Labor Cost Per Year	Total Annual Capital Costs	Total Annual O&M Costs	Total Costs
Engine Testing & Certification	12	8	2,214	\$ 180,851	\$ 1,200,000	N/A	\$1,380,851
HD Truck/Van Testing & Certification	3	8	11,496	900,938	16,000	\$ 396,000	1,312,938
Vocational Truck Testing & Certification	15	8	8,910	720,963	52,500	N/A	773,463
Combination Tractor Certification	4	8	2,432	182,969	14,000	1,512,000	1,708,969
<b>TOTALS</b>	<b>34</b>	<b>8</b>	<b>25,052</b>	<b>\$1,985,721</b>	<b>\$ 1,282,500</b>	<b>\$ 1,908,000</b>	<b>\$5,176,221</b>

(ii) *The Agency Tally*

**Table 6-3**  
**Total Estimated Agency Burden and Cost Summary**

Program	Number of Applications	Number of Activities	Total Hours Per Year	Total Labor Cost Per Year	Total Annual Capital Costs	Total Annual O&M Costs	Total Costs
Certification	299	10	20,800	\$1,664,000	\$1,000,000	\$150,000	\$2,814,000

6(f) Reasons for change in burden

This is new information collection and it represents a new burden.

6(g) Burden Statement

The annual public reporting and recordkeeping burden for this collection of information is estimated to average 737 hours per response, or 83 hours per application. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR part 9 and 48 CFR chapter 15.

To comment on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including the use of automated collection techniques, EPA has established a public docket for this ICR under Docket ID Number EPA-HQ-OAR-2010-1062, which is available for online viewing at [www.regulations.gov](http://www.regulations.gov), or in person viewing at the Air and Radiation Docket and Information Center in the EPA Docket Center (EPA/DC), EPA West, Room 3334, 1301 Constitution Avenue, NW, Washington, D.C. The EPA Docket Center 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 Reading Room is (202) 566-1744, and the telephone number for the Air and Radiation Docket and Information Center is (202) 566-1742. An electronic version of the public docket is available at [www.regulations.gov](http://www.regulations.gov). This site can

be used to submit or view public comments, access the index listing of the contents of the public docket, and to access those documents in the public docket that are available electronically. When in the system, select "search," then key in the Docket ID Number identified above. Also, you can send comments to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW, Washington, D.C. 20503, Attention: Desk Officer for EPA. Please include Docket ID Number EPA-HQ-OAR-2010-1062 and OMB Control Number 2060-NEW in any correspondence.

Table 6-4  
Annual Respondent Burden and Cost (Complete 2b/3 Pick up trucks and vans)  
Proposal to Establish GHG emissions and fuel efficiency Standards for Heavy-Duty On-Highway Engines & Vehicles

Information Collection Activity	Hours and cost per application											Total hours and cost		
	Engineer @82.24/hr	Manager @ \$106.50/hr	Legal @ \$138.20/hr	Test Cell Operator @ \$48.40/hr	Transportation @ \$37.38/hr	Clerical@ \$31.39/hr	Respon. hr/yr	Labor Cost/yr	Capital Startup Cost	O & M Cost(1)	Applications/respondent (2)	Number of Respon.	Total hr/yr	Total Cost/yr
Review of regs and guidance document	10	4	3	4	0	0	21	1,857	0	0	8.0	3	504	44,558
Testing/Gathering emission data on test vehicles	12	4	0	8		0	24	1,800	0	0	110.0	3	7,920	594,026
Test Cost*	0	0	0	0	0	0	0	0	0	1,200	110.0	3	0	396,000
Analyze data to determine compliance	16	4	2	2	0	0	24	2,115	0	0	8.0	3	576	50,761
Preparing and submitting certification application and fee filing form	16	24	6	4	0	16	66	5,397	2,000	0	8.0	3	1,584	177,525
Preparing and submitting "carry over" applications	4	8	1	0	0	2	15	1,382	0	0	8.0	3	360	33,167
Prepare & Review GHG Compliance Plan	9	8	1	0	0	1	19	1,762	0	0	8.0	3	152	14,094
Final Year Production Update	0	2	0	0	0	2	4	276	0	0	8.0	3	32	2,206
Total per respondent	67	54	13	18	0	21	173	300,313	2,000	132,000	8	3	0	
Total for the industry	5,280	2,520	312	2,880	0	504	11,496	900,938	16,000	396,000	24	3	11,128	\$1,312,338

(1) Test costs under O&M are based on contract costs associated with running coast down tests

(2) 3 Manufacturers are expected to submit 8 certification applications each (4 HD truck "families," and 4 van "families", representing 110 vehicles tested)

Table 6-5  
Annual Respondent Burden and Cost (Engine Manufacturers)  
Proposal to Establish GHG emissions and fuel efficiency Standards for Heavy-Duty On-Highway Engines & Vehicles

Information Collection Activity	Hours and cost per application											Total hours and cost		
	Engineer @82.24/hr	Manager @ \$106.50/hr	Legal @ \$138.20/hr	Test Cell Operator@ \$48.40/hr	Transportation @ \$37.38/hr	Clerical@ \$31.39/hr	Respon. hr/yr	Labor Cost/yr	Capital Startup Cost	O & M Cost(1)	Applications/ respondent (2)	Number of Respon.	Total hr/yr	Total Cost/yr
Review of regs and guidance document	1	1	0	0	0	0	2	189	0	0	9.0	12	216	20,384
Testing/Gathering emission data on test vehicles	1	0	0	2	0	0	3	179	0	0	9.0	12	324	19,336
N2O Analyzer Investment									50,000	0	2.0	12	0	1,200,000
Analyze data to determine compliance	1	1	0	0	0	0	2	189	0	0	9.0	12	216	20,384
Preparing and submitting certification application and fee filing form	1	1	1	1	0	1	5	383	0	0	9.0	12	486	41,313
Preparing and submitting "carry over" applications	1	1	0	0	0	0	2	189	0	0	9.0	12	216	20,384
Prepare & Review GHG Compliance Plan	1	2	0	0	0	0	3	295	0	0	9.0	12	324	31,886
Final Year Production Update	1	1	0	0	0	0	2	189	0	0	9.0	12	216	20,384
Store, file and maintain records	0	0	0	0	0	2	2	63	0	0	9.0	12	216	6,780
Total per respondent	63	63	9	23	0	27	185	\$20,094.60	50,000	0	9	12	0	\$0
Total for the industry	756	756	108	270	0	324	2,214	\$180,851	1,200,000	\$0	9	12	2,214	\$1,380,851



Table 6-6  
Annual Respondent Burden and Cost (Class 3-8 Vocational Trucks)  
Proposal to Establish GHG emissions and fuel efficiency Standards for Heavy-Duty On-Highway Engines & Vehicles

Information Collection Activity	Hours and cost per application											Total hours and cost		
	Engineer @82.24/hr	Manager @ \$106.50/hr	Legal @ \$138.20/hr	Test Cell Operator@ \$48.40/hr	Transportation @ \$37.38/hr	Clerical@ \$31.39/hr	Respon. hr/yr	Labor Cost/yr	Capital Startup Cost (1)	O & M Cost	Applications/ respondent (2)	Number of Respon.	Total hr/yr	Total Cost/yr
Review of regs and guidance document	10	3	1	0	0	0	14	1,280	0	0	9.0	15	1,890	172,814
Collect, Input GEM Data & Run Model	8	2	0	0	0	0	10	871	0	0	9.0	15	1,350	117,574
Analyze data to determine compliance	6	2	1	0	0	0	9	845	0	0	9.0	15	1,215	114,026
Preparing and submitting certification application and fee filing form	4	1	2		0	4	11	837	2,000	0	9.0	15	1,485	143,052
Preparing and submitting "carry over" applications	2	1	0	0	0	3	6	365	0	0	9.0	15	810	49,295
Labelling Requirements	1	3	2	0	0	2	8	741	1,000	0	9.0	15	1,080	115,024
Final Year Production Update	0	2	0	0	0	2	4	276	0	0	9.0	15	540	37,228
Store, file, maintain records	0	0	0	0	0	4	4	126	500	0	9.0	15	540	24,451
Total per respondent	31	14	6	0	0	15	66	\$ 5,340.47	3,500	0	9	15	0	\$0
Total for the industry	4,185	1,890	810	0	0	2,025	8,910	\$720,963	52,500	\$0	135	15	8,910	\$773,463

Based on 15 manufacturers, each submitting 9 applications for certificates of conformity to cover production of their Class 3, 4, 5, 6, 7 and 8 vocational trucks

Based on 10 manufacturers each submitting 5 applications (a total of 50 applications for EPA processing) for certificates of conformity to cover production of their 2b, 3, 4 and 5 vehicles

Table 6-7  
Annual Respondent Burden and Cost (Class 7-8 Combination Tractors)  
Proposal to Establish GHG emissions and fuel efficiency Standards for Heavy-Duty On-Highway Engines & Vehicles

Information Collection Activity	Hours and cost per application											Total hours and cost		
	Engineer @ \$2.24/hr	Manager @ \$106.50/hr	Legal @ \$138.20/hr	Test Cell Operator @ \$48.40/hr	Transportation @ \$37.38/hr	Clerical @ \$31.39/hr	Respon. hr/yr	Labor Cost/yr	Capital Startup Cost (1)	O & M Cost (2)	Applications/respondent (3)	Number of Respon.	Total hr/yr	Total Cost/yr
Review of regs and guidance document	8	4	2	2	0	0	16	1,457	0	0	8.0	4	512	46,628
Testing/Gathering CD (coefficient of drag) on test vehicles									0					
- Trailer Rental									0	750	40.0	4	0	120,000
- Fuel									0	1,900	40.0	4	0	304,000
- Vehicle Check-in & Preparation									0	700	40.0	4	0	112,000
- Run Coastdown test									0	4,100	40.0	4	0	656,000
- Data Reduction									0	1,050	40.0	4	0	168,000
- Final Test Report									0	950	40.0	4	0	152,000
Collect, Input GEM Data & Run Model	8	2	1	0	0	2	13	1,072	0	0	8.0	4	416	34,301
Preparing and submitting certification application and fee filing form	6	2	2	0	0	10	20	1,297	2,000	0	8.0	4	640	49,496
Preparing and submitting "carry over" applications	4	1	1	0	0	4	10	699	0	0	8.0	4	320	22,375
Labelling Requirements	2	4	1	0	0	2	9	791	1,000	0	8.0	4	288	29,327
Final Year Production Update	0	2	0	0	0	2	4	276	0	0	8.0	4	128	8,825
Store, file, maintain records	0	0	0	0	0	4	4	126	500	0	8.0	4	128	6,018
Total per respondent	28	15	7	2	0	24	76	\$ 5,717.78	3,500	9,450	8	4	79	
Total for the industry	896	480	224	64	N/A	768	2,432	182,969	14,000	\$1,512,000	32	4	2,432	\$1,708,969

(1) Capital start up costs include upgrades in information and management system to record and report test data to EPA

(2) Operations & Maintenance Costs include contract costs for running coast down tests on 3 vehicles per application (test family)

(3) 4 Manufacturers will submit 8 certification applications including test results for an average of 40 vehicles per manufacturer

Average # of Applications per respondent

**Based on 4 manufacturers each submitting 8 applications (a total of 32 applications for EPA processing) for certificates of conformity to cover production of their:**

- Class 7, day cab, low roof
- Class 7, day cab, mid roof
- Class 7, day cab, high roof
- Class 8, day cab, low roof
- Class 8, day cab, mid roof
- Class 8, day cab, high roof
- Class 8, sleeper cab, low roof
- Class 8, sleeper cab, mid roof
- Class 8, sleeper cab, high roof

**testing for 1 application represents:**

- 3 trucks representing: top selling model, worst-case model, randomly chosen model
- trailer rental (3 trailers)
- fuel costs to get trucks to track
- vehicle preparation
- EPA-modified SAE J2263 Coast Down tests, 8 valid runs
- Coast Down data reduction/analysis
- Final Report