

Supporting Statement for
Information Collection Request

**Control of Air Pollution from New Motor Vehicles:
Heavy-Duty Engine and Vehicle Standards (Final Rule)**
EPA ICR Number 2621.02; OMB Control Number 2060-NEW

Clean Air Act
§ 202, §203, §206, §207, §208,
§213, §216 and §301
(42 USC 7521, 7522, 7225, 7541,
7542, 7547, 7550, and 7601)

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

1. Identification of the Collection of Information

1(a) Title and Number of the Information Collection

Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards, Final Rule, EPA ICR Number 2621.02, OMB Control Number 2060-NEW.

1(b) Short Characterization

With this supporting statement, the Environmental Protection Agency (EPA) requests **approval of a new** Information Collection Request (ICR). This supporting statement describes activities and burden associated with the EPA's final rulemaking: Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards (the "heavy-duty criteria pollutant final rule"). In that rule, EPA is adopting new criteria pollutant standards for heavy-duty (HD) engines, including updated and streamlined emissions certification and compliance provisions. The final rule includes some revised provisions for other mobile source sectors as well. The changes build on existing emissions certification and reporting requirements which are already covered under the following 'programmatic' ICRs:

- EPA ICR Number 1684.20, OMB Control Number 2060-0287, *Emissions Certification and Compliance Requirements for Nonroad Compression-ignition Engines and On-highway Heavy Duty Engines and Vehicles*
- EPA ICR Number 1695.14, OMB Control Number 2060-0338, *Certification and Compliance Requirements for Nonroad Spark-ignition Engines*

To avoid duplication, this collection request covers only the incremental burden associated with the heavy-duty criteria pollutant final rule.

Under Title II of the Clean Air Act (42 U.S.C. 7521 et seq.; CAA), EPA is charged with issuing certificates of conformity for engine and vehicle prototypes that comply with applicable emission standards. Such certificates must be issued before engines produced according to certified prototypes may be legally introduced into U.S. commerce. A 2016 petition from over 20 organizations, including state and local air agencies from across the country, requested that EPA revise oxides of nitrogen (NO_x) standards for HD engines. The petition cited concerns over adverse health and welfare impacts and the need to help certain areas attain the National Ambient Air Quality Standards (NAAQS) for ozone. In 2020, EPA published an Advance Notice of Proposed Rulemaking (ANPR) requesting comments on plans to revise the NO_x emission standards for HD engines. In August 2021, Executive Order 14037 further directed the Agency to (1) set new NO_x emission standards and (2) update the existing greenhouse gas (GHG) emissions standards for heavy-duty engines and vehicles.¹ In March 2022, EPA published a Notice of Proposed Rulemaking (87 CFR 17414, March 28, 2022, the NPRM) requesting comments on changes to the NO_x emission standards for HD engines.²

¹ Executive Order on Strengthening American Leadership in Clean Cars and Trucks. 86 FR 43583, August 10, 2021.

² The NPRM may be found at <https://www.govinfo.gov/content/pkg/FR-2022-03-28/pdf/2022-04934.pdf>

EPA is now adopting new HD criteria pollutant standards and changes to HD emissions certification and compliance provisions. While the Agency proposed targeted changes to the existing Phase 2 GHG standards for heavy-duty vehicles, those provisions are not being finalized at this time and therefore those provisions are not included in this information collection request. The Agency is also adopting revisions to several regulatory provisions related to other mobile source sectors including marine compression-ignition engines (Marine CI), small spark-ignition engines (Small SI), locomotives, light-duty vehicles, and various other types of nonroad engines, vehicles, and equipment. These changes consist of amendments to certain credit calculations, and regulatory changes to correct, streamline, and clarify existing provisions. Some of these regulatory changes, summarized below, represent a significant reduction in the information collection burden for the marine and HD sectors. A list of the principal regulations amended by the final rule is set out in Table 1.

Table 1
Principal Regulations Amended by the Heavy-Duty Criteria Pollutant Final Rule

Industry	40 CFR ³ Part
Requirements for HD Engines & Vehicles	85, 86, 1036, 1037
Evaporative Requirements	1060
Engine Testing Procedures	1065
Vehicle Testing Procedures	1066
General Provisions – apply to most engine categories	1068
Marine CI Engines and Vessels	1042

The information described in this ICR will be collected by EPA's Compliance Division (CD) within the Office of Transportation and Air Quality (OTAQ), Office of Air and Radiation (OAR). The information may be used by EPA and the Department of Justice for enforcement purposes. Some non-confidential certification data are disclosed on EPA's website and may be used by trade associations, environmental groups, and the public. The information is collected electronically and stored in CD's databases.

The estimated burden and costs for the information collection provisions associated with this various components of the final rule are set out in Table 3. The Agency's burden is set out in Table 5.

2. Need For and Use of the Collection

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

³ Code of Federal Regulations, <https://www.ecfr.gov/>. EPA emissions regulations are found in Title 40.

EPA's emission programs are statutorily mandated; the Agency does not have discretion to cease these functions. The data required is necessary to comply with Title II of the Clean Air Act (42 U.S.C. 7521 et seq.; "CAA" or "the Act"), as amended. The Act charges EPA with developing standards for compounds deemed 'pollutants' as defined by the CAA itself, and issue certificates of conformity for those engines and motor vehicle designs that comply with those standards. Such a certificate must be issued before engines and vehicles may be legally introduced into commerce. Section 206(a) of the CAA (42 USC 7521) states:

"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."

Section 206(b)(1) of the Act authorizes EPA to inspect and require testing of new vehicles and engines to: (1) verify that manufacturer's final product complies with EPA standards; (2) assure that the correct parts are installed correctly in each engine; and (3) audit the manufacturer's testing process to ensure testing is being done correctly. The Production Line Testing (PLT) and Selective Enforcement Audits (SEA) Programs fulfill these requirements by inspecting and testing engines taken directly from the assembly line and/or existing fleets, and by auditing the engine manufacturer's testing procedures and facilities. Section 207(b) of the CAA mandates the establishment of methods and testing procedures to ascertain whether certified engines in actual use in fact comply with applicable emission standards throughout their useful lives. The In-Use Testing and similar programs are implemented in response to that mandate.

The sections of the CAA that offer statutory authority for the requirements contained in this rulemaking are 202, 203, 206, 207, 208, 213, 216, and 301 (42 U.S.C. 7521, 7522, 7525, 7541, 7542, 7547, 7550, and 7601).

2(b) Practical Utility/Users of the Data

EPA will use the information requested under this collection to verify and support the three-stage compliance assurance system envisioned in the CAA. First, certification information, including test data, is needed to verify that the proper prototype engines have been selected to represent each engine/vehicle family (group of engines/vehicles expected to have similar emission characteristics), and that the necessary testing has been performed. Based on this information, EPA issues a certificate of conformity.

Second, data collected under the PLT and SEA Programs are used to verify that manufacturers have successfully translated their prototypes into mass-produced engines. This is necessary because prototypes are often hand-built and not typical of assembly line engines. Lastly, in-use testing is intended to determine if engines and vehicles maintained in accordance with the manufacturer's instructions continue to emit at acceptable levels after a prescribed number of years of actual use. If a family of engines or vehicles is found in noncompliance, manufacturers are required to recall the family.

The collected information will be received by CD and used by various divisions within OTAQ that implement CAA mobile source requirements. In instances of noncompliance, the information may be used by EPA's enforcement office and the Department of Justice. Non-confidential portions of the information submitted to CD are available to and used by importers, 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 nature, and the fact that most of it must be submitted to EPA before HD engines and vehicles can be sold, the information collected is not available from any other source. Furthermore, some of the data requested, such as sales volumes or certain engine designs, may be proprietary in nature, and thus claimed as confidential business information (CBI) by manufacturers. Therefore, EPA can obtain the information only from its owners, the engine and vehicle manufacturers.

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

In the proposed rulemaking, EPA requested public comment on the testing, reporting, and recordkeeping burdens outlined in this ICR, associated with demonstrating compliance with the proposal's emission standards. EPA received one comment on this topic from Daimler Truck North America LLC (EPA-HQ-OAR-0055-1168, footnote 9):

While Daimler Truck focuses primarily here on increased incremental technology, warranty, and other direct/indirect compliance costs, we also note that paperwork burdens would increase under EPA's proposal. The Proposed Rule implicates a number of information collection activities, all of which will significantly increase compliance burdens and costs for manufacturers. Daimler Truck has reviewed EPA's "Supporting Statement for Information Collection Request" (EPA ICR Number 2621.01) (April 19, 2022) and notes that EPA's summary—in particular the respondent burden and cost estimates in Table 3 of the "Supporting Statement"—captures some but perhaps not all of the information collection burdens and costs accompanying implementation of the Proposed Rule. These costs should not only be factored in to OMB's consideration of the Proposed Rule under the Paperwork Reduction Act, but should also be accounted for in evaluating whether EPA's proposal reflects adequate consideration of costs as required under CAA Section 202.

In Daimler Truck's subsequent comments on the proposal (EPA-HQ-OAR-2019-055-1045), the cost and burden information they provided was specific to direct manufacturing costs of the expected technologies or indirect costs of longer warranty periods; they did not provide additional information related to implementing test

procedures, keeping records, or reporting to EPA. Therefore, we did not revise the ICR burden estimates in response to this comment. However, some of the data used to calculate the burden were revised for the final ICR to reflect the Agency's current knowledge with respect to the number of respondents, adjustments due to changes in the final requirements as compared to the proposal, and number of hours required to assemble and submit data to EPA. In addition, the burden estimates were revised to include some provisions that were inadvertently omitted from the draft ICR. See discussion Section 6(a), below.

3(c) Consultations

EPA used data gathered in consultations with the regulated industry during the development of burden estimates for current programs (programmatic ICRs) and its own experience implementing the programs that this final rule seeks to amend.

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, the collection frequency for most certification requirements corresponds to one collection per engine family for its model year. However, it should be noted that when an engine or vehicle design is "carried over" to a subsequent model year, the amount of new information required to be submitted to EPA is substantially reduced.

3(e) General Guidelines

Under 40 CFR parts 1036.250 and 1037.250, copies of documents sent to EPA must be kept and maintained by the manufacturer for eight years after a certificate of conformity is issued. These include pre-model reports; certification applications; averaging, banking, and trading (ABT) reports; emissions test data; and end-of-the-year reports. These records may be stored in any format and on any media if they are organized and can be sent promptly to EPA upon request. These recordkeeping requirements stem, in part, from the statutory requirement to warrant some emissions components and systems for long periods of time. However, data related to routine testing, such as test cell temperatures and relative humidity readings, must only be kept for one year after a certificate of conformity is issued.

Manufacturers are required to submit information such as sales projections and certain sensitive technical descriptions that may be entitled to confidential treatment (see section 4(b)(i)). We will release this information only as permitted or required under the Freedom of Information Act (FOIA) and EPA regulations at 40 CFR part 2. EPA in this final rule is amending the regulations at 40 CFR 1068.11 to identify several categories of information that are not entitled to confidential treatment.

No other general guideline is exceeded by this information collection.

3(f) Confidentiality

Manufacturers may 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/NAICS⁴ Codes**

Respondents are manufacturers that sell or import into the United States new heavy-duty highway engines and vehicles. Additional amendments apply to gasoline refueling facilities and for manufacturers of all sizes and types of motor vehicles, stationary engines, aircraft and aircraft engines, and various types of nonroad engines, vehicles, and equipment, including marine engines. Respondents affected by the final rule are classified in the North American Industry Classification System codes (NAICS) listed in Table 2.

Table 2
Respondents North American Industry Classification Codes

NAICS Codes	NAICS Title
326199	All Other Plastics Product Manufacturing
332431	Metal Can Manufacturing
333618	Manufacturers of new Marine CI engines
335312	Motor and Generator Manufacturing
336111	Automobile Manufacturing
336112	Light Truck and Utility Vehicle Manufacturing
336120	Heavy Duty Truck Manufacturing
336211	Motor Vehicle Body Manufacturing
336213	Motor Home Manufacturing
336411	Manufacturers of new aircraft.
336412	Manufacturers of new aircraft engines.
333618	Other Engine Equipment Manufacturing
336999	All Other Transportation Equipment Manufacturing
423110	Automotive and Other Motor Vehicle Merchant Wholesalers
447110	Gasoline Stations with Convenience Stores
447190	Other Gasoline Stations

⁴ NAICS Association. NAICS & SIC Identification Tools. Available online: <https://www.naics.com/search>

454310	Fuel dealers
811111	General Automotive Repair
811112	Automotive Exhaust System Repair
811198	All Other Automotive Repair and Maintenance

4(b) Information Requested

This section lists the information-related changes that EPA is adopting for emissions certification and compliance programs. There are two types of changes.

First, EPA is adopting new criteria pollutant emission standards and related changes to compliance requirements for heavy-duty highway engines and vehicles. These provisions build on existing, long-established programs. The burden for those programs is already covered under EPA ICR Number 1684.20, OMB Control Number 2060-0287. Therefore, to avoid duplication, this ICR only accounts for the incremental changes in reporting and recordkeeping burden associated with the final rule.

Second, EPA is adopting revisions to existing compliance programs for locomotives and other nonroad engines (land-based and marine). These changes also build on existing, long-established programs. The burden for those programs is already covered under EPA ICRs Number 1684.20 and 1695.14. Again, to avoid duplication, this ICR only accounts for the incremental changes in reporting and recordkeeping burden associated with the final rule. It should be noted that some of the changes to these programs will result in significant reductions in the reporting burden for manufacturers in some of these sectors, as described below.

Not all the regulatory changes included in the final rule affect reporting and recordkeeping requirements and the burden associated with them. For example, while the addition of a new test cycle directly impacts the burden and expense associated with compiling and submitting a certification application, a change in the numeric value of an existing standard does not. Likewise, there are also several provisions in the final rule that seek to clarify definitions or correct omissions.

In its final rule, EPA is adopting regulatory changes that migrate HD criteria pollutant regulations from 40 CFR part 86, subpart A, to 40 CFR part 1036. The rule also makes conforming changes to other CFR parts as necessary. The regulatory citations included in this ICR document are consistent with those used in the final rule.

The data required by the final rule would be collected electronically in the same manner as it is now, through the EPA's Engines and Vehicles Compliance Information System (EV-CIS), formerly known as VERIFY. More information on the existing certification process and data requirements can be found at <https://www.epa.gov/vehicle-and-engine-certification/certification-heavy-duty-hd-commercial-trucks-and-buses-and-onroad>.

4(b)(i) Data Items

The provisions EPA is adopting that will impact certification reporting and recordkeeping requirements include changes to emission standards, test procedures, regulatory useful life, emission-related warranty requirements and other compliance provisions. The preamble to this rulemaking includes a complete description of the updates that are briefly summarized here. Note that this list includes only the final provisions that will impact the Agency's information collection burden estimate.

Highway Heavy-Duty Engines (HDE):

- New testing and certification demonstration related to new emission standards:
 - Compression Ignition (CI) HDE: New NO_x, particulate matter (PM), hydrocarbon (HC), and carbon monoxide (CO) emission standards based on a new low-load duty cycle (LLC); applies for all CI HDE families
 - CI HDE: Optional new Clean Idle NO_x standard and testing; expect all manufacturers will certify all CI HDE families to the optional standard
 - Spark Ignition (SI) HDE: New NO_x, PM, HC, and CO emission standards based on a new Supplemental Emission Test duty cycle (SET); applies for all SI HDE families
 - Deterioration factors (DFs):
 - All HDE: deterioration factor (DF) determination for certification—Longer useful life for all engine classes extends the laboratory-based service accumulation; finalizing an option for manufacturers to apply a leaner approach that involves a combination of engine testing and bench aging of aftertreatment components; expect all engine manufacturers will use the bench aging option
 - All HDE: DF verification—perform in-use testing on selected engine families to verify DF values if EPA has information showing such testing is appropriate, as described in the preamble; expect EPA will request DF verification for an average of one engine family for each manufacturer per year
 - Certification application:
 - SI HDE: A design standard to prevent catalysts for spark-ignition engines from cooling below 350 °F; expect all SI manufacturers to apply once annually
 - SI HDE: Information describing why a manufacturer relies on any auxiliary emissions control device (AECD) instead of other engine designs for thermal protection of catalyst or other emission-related components with a description of the accuracy of any modeled or measured temperatures used to activate the AECD; expect all manufacturers to apply once annually
 - CI HDE: Report exhaust temperatures related to vanadium catalysts, consistent with guidance published in 2016; expect no new burden as manufacturers already following guidance
 - All HDE: More detailed description of adjustable parameters, including electronically controlled parameters; expect all manufacturers to apply once annually
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- All HDE: Improved maintenance instructions in the owner's manual directed towards increasing engine serviceability; expect all manufacturers to apply once annually as part of broader serviceability improvements
- All HDE: A requirement to design engines to broadcast engine torque values and provide information to read, record, and interpret those torque values; expect no new burden as manufacturers already required to broadcast this information for current in-use testing program
- Onboard diagnostic (OBD) requirements:
 - All HDE: Incorporation by reference of 2019 California Air Resources Board's (CARB) OBD regulations already implemented by manufacturers to harmonize the requirements and streamline data collection processes; expect manufacturers are already certifying all families to CARB OBD standards and there is no new burden for this requirement
 - All HDE: New OBD parameters to display in-cab; expect all manufacturers to apply once annually as part of broader serviceability improvements
- Averaging, Banking and Trading (ABT):
 - All HDE: Discontinuation of the interim end-of-the-year report (currently due by March 31) for both the HD engine and HD vehicle ABT programs in favor of submitting only the final report (due by Sept 30); project this will reduce the current ABT reporting burden by 10%
- In-use testing:
 - CI HDE: For model year 2027 and later engines, replace the not-to-exceed (NTE) torque maps and data analysis in favor of 300-second moving average windows (MAWs) of continuous engine operation. MAWs will be divided into two categories or "bins" based on the time-weighted average engine power of each MAW of engine data

Highway Heavy-duty Vehicles (HDV) –

- Incomplete vehicles above 14,000 lb Gross Vehicle Weight Rating (GVWR) powered by SI HDE: New refueling emission standard and test – New standard based on a new refueling emission test with the option to use engineering analysis to demonstrate that they meet the new refueling standard; expect all manufacturers to use engineering analysis for all HDV families
- ABT: Discontinuation of the interim end-of-the-year report (currently due by March 31) for both the HD engine and HD vehicle ABT programs in favor of submitting only the final report (due by Sept 30); project this will reduce the current ABT reporting burden by 10%

Other Industries –

- All Nonroad engines:
 - More detailed description of adjustable parameters, including electronically controlled parameters; expect all manufacturers to apply once annually
- Nonroad compression-ignition engines —Locomotive, Nonroad CI, Marine CI:
 - Report exhaust temperatures related to vanadium catalysts, consistent with guidance published in 2016; expect no new burden as manufacturers already following guidance

- Option for manufacturers to determine deterioration factors based on the new procedures adopted in this final rule for heavy-duty highway engines; expect zero nonroad manufacturers will use this option and project no new burden at this time
- Marine CI:
 - Reconfiguring requirements for production-line testing (PLT) by updating from four tests/year for large companies and no testing for low-volume engine families and small manufacturers to one test/family for all companies; project this will reduce the current PLT reporting burden by 30%

4(b)(ii) Respondent Activities

Respondent activities are unchanged from those already indicated in the programmatic ICR (ICR 1684.20). Those activities are:

- Review the regulations and guidance documents
- Prepare and submit pre-model year reports or related production data for certification applications
- Develop engine or vehicle “test” or “family” groups
- Test engines and vehicles for compliance with emission and fuel consumption standards
- Gather and analyze test results
- Collect inputs and run Greenhouse gas Emissions Model (GEM), as needed
- Submit the Application for Certification
- Label certified vehicles
- Prepare and submit carryover applications
- Prepare GHG compliance plan and reports, as needed
- Prepare and submit annual production reports and ABT reports
- Store, file and maintain records

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

5(a) Agency Activities

Agency activities are unchanged from those already indicated in the programmatic ICR (ICR 1684.20). Those activities are:

- Review and interpret regulations, provide guidance
- Review pre-model reports, evaluate test plans, and credit projections
- Meet with respondents as requested
- Review certification applications for completeness and accuracy
- Verify that the correct engines and vehicles have been selected and tested
- Evaluate test and related technical documents
- Determining if the use of carry-over/across data is appropriate

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- Issue appropriate certificates of conformity
 - Collect and review the various reports described in this ICR
 - Determine compliance with all regulatory programs and provisions
 - Review credit balances under ABT
 - Conduct confirmatory testing and in-use testing
 - Investigate potential violations and refer findings to the appropriate enforcement office
 - Store, file and maintain data
 - Answer questions from manufacturers, other government agencies, Congress, and the public
 - Periodically perform maintenance or enhance certification and compliance databases as needed
 - Make data available to the public and maintain public websites
 - Answer FOIA requests, including analyzing and managing requests for confidentiality
 - Collaborate with each other, including sharing data and providing access to databases

5(b) Collection Methodology and Management

Collection methodology and management remains generally unchanged from that explained in ICR 1684.20. EPA will continue to collect, store, and analyze data using the Engine and Vehicle Compliance Information System (EV-CIS), EPA's web-based engine and vehicle emissions database. Manufacturers use EV-CIS' web-forms or schema files to upload individual data elements and documents. Some of the provisions being finalized, such as new testing cycles and new data, can be accommodated with modifications to the existing web-forms and schema files (e.g., modification of drop-down menus, addition of data fields for LLC test results, etc.). No new forms are expected to be created. More information on the certification process and data requirements can be found at <https://www.epa.gov/vehicle-and-engine-certification/certification-heavy-duty-hd-commercial-trucks-and-buses-and-onroad>.

5(c) Small Entity Flexibility

The small business flexibilities already built into the existing programs will continue. In addition, the final rule gives small manufacturers the ability to request a delay in complying with the OBD requirements for up to three model years if that manufacturer has not certified those engines or other comparable engines in California for those model years (see 1036.110(b)(1))

Under the other provisions included in this ICR, the information being requested is the minimum needed to effectively conduct and maintain integrity of the required certification and enforcement programs. Further measures to simplify reporting for small businesses do not appear prudent or necessary.

5(d) Collection Schedule

The collection schedule for information included in this ICR applies as follows:

- Certificates continue to be submitted annually as required by the statute
- Reporting frequency for Marine CI engines under PLT is reduced from quarterly to annually, 45 days after the end of testing
- Reporting frequency for ABT is reduced from bi-annually to annually, on September 30
- The new DF report would be submitted annually

6. Estimating the Burden and Cost of the Collection

6(a) **Estimating Respondent Burden**

Burden estimates are based primarily on information gathered during the development of ICR 1684.20 which contains the burden for highway HD engine and vehicle programs and nonroad engines, including Marine CI engines. Burden estimates are adjusted to reflect comments and experience gained through program implementation. The estimates are presented in Table 3 below. The table's content is discussed in detail in sections 6(b)(ii) and 6(d) of this supporting statement.

The burden estimates contained in Table 3 have been revised from those presented in the draft Supporting Statement for this Information Collection Request. These revisions are as follows:

- Added new estimate of the optional Clean Idle NO_x standard and test for highway HDE CI engines – inadvertently omitted from draft ICR
- Added new estimate of the design standard for highway HDE SI engines to maintain catalyst temperatures above 350 °C – inadvertently omitted from draft ICR
- Removed intermediate useful life as a burden item in developing new DFs for highway HDE – not finalizing
- Removed EV ABT credit option as a burden item for highway HDE – not finalizing
- Added highway HDV refueling standard and test for >14,000 lb GVWR vehicles powered by SI engines – inadvertently omitted from draft ICR
- Adjusted the burden impact of discontinuing interim ABT annual report for highway HDE and HDV, reducing it from 40% of the previous estimate to 10% – manufacturers will still need to prepare and submit the required annual report
- Adjusted the burden impact of modifying the PLT program for Marine CI engines, reducing it from 65% of the previous estimate to 30% – manufacturers will still need to perform testing and submit a report
- Reduced the estimated number of hours needed by nonroad engine manufacturers (“other industries”) to review the final changes that apply to the relevant regulatory programs that affect their products

**Table 3
Respondents' Estimated Burden and Cost**

Information Collection Activity	Burden and Cost Per Application										Total Burden and Cost			
	Engineer Rate/hour	Manager Rate/hour	Legal Rate/hour	Mechanical Engineer Technical Rate/hour	IT Analysts Rate/hour	Clerical Rate/Hour	Respondent total hr/yr	Labor Costs hr/yr	Capital Startup costs	O&M Cost ¹	Frequency or Applications/ Respondent ²	Number of Respondents	Total hr/yr	Total Cost/yr
	\$ 94.86	\$ 152.31	\$ 180.08	\$ 66.80	\$ 91.94	\$ 45.86								
HD engine manufacturers: review of new regulations, general system changes	40	25	10	10	50	0	135	\$ 14,668	\$0	\$ 200	1.0	16	2160	\$ 237,886
New certification and DF tests, in-house	40	10	0	60	0	14	124	\$ 9,968	\$0	\$ 6,000	1.8	16	3596	\$ 463,059
LLC tests (HD CI only)	5	1	0	0	0	1	7	\$ 672	\$0	\$ 5,000	11.0	6	462	\$ 374,382
SET and engine mapping updates (HD SI only)	5	1	0	0	0	1	7	\$ 672	\$0	\$ 5,000	8.0	10	560	\$ 453,797
Optional Clean Idle NOx standard and testing (HD CI only)	5	1	0	0	0	1	7	\$ 672	\$0	\$ 5,000	11.0	6	462	\$ 374,382
Design standard to keep catalyst >350C (HD SI only)	5	1	0	0	0	1	7	\$ 672	\$0		1.0	10	70	\$ 6,725
Developing new DFs or DF demonstrations (longer UL demonstrations, option to use accelerated bench aging), annualized	10	5	0	38	0	3	56	\$ 4,386	\$0	\$ 14,000	1.8	16	1568	\$ 514,813
Additional DF verification activities and annual DF verification report	30	10	1	20	0	2	63	\$ 5,977	\$0	\$ 27,000	1.0	1	63	\$ 32,977
HD in-use testing - new test cycles	5	1	0	0	0	1	7	\$ 672	\$0	\$ 5,000	1.0	6	42	\$ 34,035
HD-MAWs and other data analysis changes not accounted for elsewhere	30	10	0	0	0	10	50	\$ 4,827	\$0	\$ 10	9.7	6	2900	\$ 280,574
Software updates for MAWs	0	0	0	0	0				\$0	\$ 15,000	1.0	6	0	\$ 90,000
Cert application documentation improvements: AECD (SI only), AdjParam (all HDE)	10	2	0	0	0	5	17	\$ 1,483	\$0	\$ 10	1.0	16	272	\$ 23,880
Serviceability improvements, annualized	20	3	0	20	0	15	58	\$ 4,378	\$0	\$ 100	1.0	16	928	\$ 71,649
HD vehicle refueling standard and test (SI only)	5	1	0	0	0	1	7	\$ 672	\$0	\$ 5,000	2.3	4	63	\$ 51,052
TOTAL HEAVY-DUTY ENGINES AND VEHICLES								\$ 49,721	\$ -	\$ 87,320	VARIES	16	13,146	\$ 3,009,211
Other industries (all except highway HDE): review of new regulations, system changes	5	1	2	0	0	0	8	\$ 986,748	\$0	\$ 50	1.0	263	2104	\$ 272,665
Store, file and maintain records	1	0	0	0	0	1	2	\$ 141	\$0		1.0	73	146	\$ 10,273
Other industries (all except highway HDE):: Cert application documentation improvements: AdjParam	10	2	0	0	0	5	17	\$ 1,483	\$0	\$ 10	1.0	263	4471	\$ 392,532
TOTAL OTHER MOBILE SOURCES								\$ 2,610	\$ -	\$ 60	VARIES	VARIES	6,721	\$ 675,469
Highway HDE and HDV ABT reports: discontinue interim annual report								\$ (19,222)	\$0	\$ (80)	1.0	51	-246	\$ (19,302)
Marine CI PLT testing - savings related to program modifications								\$ (198,367)	\$0	\$ (153,392)	1.0	29	-2670	\$ (351,759)
TOTAL BURDEN REDUCTION MEASURES								\$ (217,589)	\$ -	\$ (153,472)	VARIES	VARIES	(2,916)	\$ (371,061)
TOTAL RULE								\$ (165,258)	\$ -	\$ (66,092)	VARIES	VARIES	16,951	\$ 3,313,619

¹Includes lab maintenance, shipping and testing costs. Other lab-related costs have already been accounted for in the general certification collections, ICR 1684.20. See section 6(b)(ii) for details.

²Frequency refers to the number of times a respondent performs each task per year. In most instances, this is tied to the number of engine families or certification applications in each category, except when in one-time tasks or tasks that apply all applications, such as reviewing regulations.

6(b) Estimating Respondent Costs

6(b)(i) Estimating labor costs

To estimate labor costs, EPA used the Bureau of Labor Statistics' (BLS) 2020 National Industry-specific Occupational Wage Estimates for the Engine, Turbine and Power Transmission Equipment Manufacturing Industry (NAICS 333600, available at https://www.bls.gov/oes/2016/may/naics4_333600.htm). EPA used mean hourly rates increased by a factor of 2.1 to account for benefits and overhead, as listed in Table 4 below.

Table 4
Labor Costs Estimates

Occupation	SOC Code Number	Mean Hourly Rate	Adjusted Mean Hourly Rate (Including Benefits and Overhead)
Mechanical Engineers	17-2141	\$45.17	\$94.86
Engineering Managers	11-9041	\$72.53	\$152.31
Lawyers	23-1011	\$85.75	\$180.08
Mechanical Engineering Technicians	17-3027	\$31.81	\$66.80
Computer and Information Analysts	15-1210	\$43.78	\$91.94
Secretaries, Except Legal, Medical and Executives	43-6014	\$21.84	\$45.86
Mechanical Engineering Technicians	17-3027	\$31.81	\$66.80

6(b)(ii) Estimating Capital, Operations and Maintenance Costs

Operation and Maintenance (O&M) costs are listed in Table 3 in section 6(a). Wherever possible, estimates were developed using current costs. Where it was not practicable to obtain a new estimate, EPA used estimates developed in previous years and corrected them for inflation using the Bureau of Labor Statistic's Consumer Price Index Inflation Calculator. The calculator can be found at http://www.bls.gov/data/inflation_calculator.htm.

HD engine emissions testing is the largest cost in this collection. HD engine manufacturers are large companies that have built their own test cells, which they use for most of their certification and compliance testing needs as well as for research and development. Sometimes, however, they hire outside laboratories. Maintenance of in-house emission laboratories is already accounted for in ICR 1684.20, but this ICR includes some costs associated with performing the additional tests required by the final program. Since manufacturers carry over certification emissions data from one model year to the next, certification testing costs has been annualized, where appropriate, over the approval period requested for this ICR (3 years).

The average cost of HD engine certification testing package has been estimated at

\$52,800⁵ or \$17,600 annualized. The cost of the package has been apportioned to estimate the cost of the LLC and other new testing requirements, as listed in Table 3. The cost of using Portable Emissions Monitoring Systems (PEMs) for durability testing has been estimated at approximately \$42,000 (\$14,000 annualized).

EPA is codifying the current DF verification program. This program has been in place since 2020 through guidance⁶ both at the federal level and in California after the agencies questioned the reliability of DFs being used for certification. The final rule revises the proposal such that DF verification is performed at EPA's discretion. For this ICR, EPA estimates one DF verification test will be requested for the industry per year.

Other O&M Costs associated with this information collection include electronic system updates, test analysis software updates (from NTE to MAWs), electronic data storage, shipping expenses, and phone calls.

6(b)(iii) Capital/Start Up Costs

There are no capital or start-up costs associated with the revision of this ICR.

6(c) Estimating Agency Burden

EPA's Compliance Division (CD) within the Office of Transportation and Air Quality (OTAQ) will be responsible for collecting the data requested under the final rule.

About 10 EPA employees of EPA's Compliance Division routinely dedicate a significant portion of their time to the activities described in this collection request. Table 5 summarizes EPA's labor costs and burden associated with this information collection. The 2021 hourly rates used were obtained from the Office of Personal Management (<https://www.opm.gov/policy-data-oversight/pay-leave/salaries-wages/2017/general-schedule/>), and adjusted by a factor of 1.6 to account for benefits and overhead. While some members of the EPA team that implements this information collection work at EPA offices in Washington, DC, the analysis uses the Ann Arbor, MI's locality pay rates for simplicity because that is where most of the team is located. Regulatory development, government-conducted testing and other costs incurred by the agencies not directly related to data submitted by respondents under this ICR are not included in this estimate.

⁵ Estimate was developed for ICR 1684.20 and adjusted for inflation.

⁶ U.S. EPA. "Guidance on Deterioration Factor Validation Methods for Heavy-Duty Diesel Highway Engines and Nonroad Diesel Engines equipped with SCR." CD-2020-19 (HD Highway and Nonroad). November 17, 2020; and California Air Resources Board, "Methods to Validate On-Road Heavy-Duty Diesel and Offroad Diesel Engine Deterioration Factors for CARB Approval," ECC 2020-07, November 24, 2020

Table 5
Agency Burden

Employee	Level	Hours and Labor Cost						
		Total Annual Labor Cost	Rate Increase by 1.6	Number of Employees	Full time hours per employee	% of Time	Total hr/yr	Total Labor cost/yr
CD Full-time Career Employees	GS 12 through 15	\$1,746,822	\$2,794,915	26	2080	7%	3,786	\$195,644
SEE Support	N/A	\$55,000	N/A	1	2080	0%	-	\$0
IT/Contract Support	GS 13/5	\$109,900	\$175,840	2	2080	10%	416	\$17,584
OGC & OECA (lawyers)	GS 13/10	\$126,062	\$201,699	1	2080	10%	208	\$20,170
Division Director	SES-1	\$201,700	\$322,720	1	2080	10%	208	\$32,272
Office Director	SES-2	\$181,500	\$290,400	1	2080	3%	62	\$8,712
Other Staff	GS-11/5	\$71,504	\$114,406	5	2080	10%	1,040	\$11,441
Burden & Labor Total:		\$ 2,492,488	\$ 3,899,981	37	N/A	N/A	5,720	\$ 285,823
O&M Costs								
In-use Testing								\$0
Travel								\$0
Confirmatory & Other Testing								\$2,500
SEAs								\$1,000
Contract Support - Compliance								\$50,000
Contract Support - Certification								\$50,000
		O&M Total:						\$ 103,500
							TOTAL:	\$ 389,323

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

As previously mentioned, the final rule builds on existing, long-established engine and vehicle certification and compliance requirements. The largest and most burden-intensive provisions make changes to the HD engine and vehicle programs, which are already covered under EPA ICR Number 1684.20, OMB Control Number 2060-0287, *Emissions Certification and Compliance Requirements for Nonroad Compression-ignition Engines and On-highway Heavy Duty Engines*. ICR 1684.20, also referred to in this document as one of the ‘programmatic ICRs’ includes burden for both HD CI and SI engines, HD vehicles and Marine CI engines which are also affected by the final action, among others.

The final rule also updates, clarifies, and streamlines existing provisions related to other industries, albeit with minimal to no new burden. The burden for those programs’ existing requirements is accounted for in the following ‘programmatic ICRs:’

- EPA ICR Number 1695.14, OMB Control Number 2060-0338, *Certification and Compliance Requirements for Nonroad Spark-ignition Engines*.
- EPA ICR Number 0783.64, OMB Control Number 2060-0104, *Motor Vehicle Emission Certification and Fuel Economy Compliance*, 40 CFR Parts 86 and 600.

To avoid duplication, this collection only includes the incremental burden associated with the new provisions as shown in Table 3 in section 6(a).

To estimate the respondent universe and response frequency, EPA examined response

levels in recent years including data gathered for recent renewals of the programmatic ICRs. Wherever possible, we based estimates for this ICR on 2019-2021 data.

Table 6 below details the number of respondents. Engine manufacturer numbers were obtained from past response levels. EPA does not expect new HD companies to enter the market by 2027 or a significant number of new engine/vehicle families as these numbers tend to remain stable after the first few years of a new certification program.

Table 6
Number of Respondents per Category

Industry	Number of Respondents
Highway HDE	16
Highway HDV	35
Marine CI engine manufacturers	29
Other ⁷ – respondents from various industries	177
Totals:	279

The largest increase in burden and expense for the final HD criteria pollutant program comes from new testing requirements for HD engines and changes to the way test data are analyzed, specifically:

- Addition of an LLC to the HD CI engine certification testing package
- Addition of a SET to HD SI engine certification testing package
- DF demonstrations over a longer useful life
- Addition of an optional Clean Idle NO_x standard and testing to the HD CI engine certification testing package
- DF verification activities and report at EPA's discretion

Since testing expenses are considered O&M costs, please refer to Section 6(b)(ii), *Estimating Capital, Operations and Maintenance Costs* for a brief discussion of testing-related cost estimates.

Burden estimates in Table 3 also include:

- Time to study the new regulations
- Updates to internal systems (databases, data files, data gathering practices)
- The cost of improving certain documents required for certification (e.g., AECD and adjustable parameter descriptions)
- The cost of improving maintenance manuals, engine labels and warranty statements
- ABT credit calculation updates

⁷ Respondents across industries that may need to perform minor (from a burden perspective) activities such as update formulas used in their calculations or request testing variances, as outlined in Section 4(b)(i)

EPA is streamlining ABT reporting requirements for highway HDE and HDV, and PLT and reporting requirements for Marine CI engines. In both cases, reporting requirements have been reduced to just once a year (from semi-annually for ABT and quarterly for PLT). The streamlining of these programs results in a reduction in the current compliance burden and the cost savings to respondents in those industries are presented separately from the burden EPA estimates for the primary criteria pollutant program adopted for highway HDE in this final rule. To quantify those savings, EPA consulted ICR 1684.20 which contains the burden for both programs and calculated the savings by applying a percent reduction to the current burden estimates as shown in Tables 7 and 8 below. The savings are shown in Table 3 as reductions to the overall burden associated with the adoption of these provisions.

Specifically, current regulations require that manufacturers of HD engines participating in ABT submit an interim end-of-the-year report by March 31 and a final report by September 30. Manufacturers have expressed frustration about the difficulties of gathering the necessary data so close to the end of the model year. Therefore, EPA is simplifying reporting requirements by discontinuing the interim end-of-the-year report in favor of the final report. Since manufacturers will still need to assemble all of the necessary data and prepare the report to EPA in September, we estimate the savings from discontinuing the interim report to be about 10 percent of the burden of preparing both an interim and a final report.

Table 7
Burden and Costs Savings from the Discontinuation of the HD ABT Interim End-of-the-Year Report

Highway HDE and HDV ABT	Number of Respondents	Labor Cost/Year	Capital Startup Costs	O&M Cost	Total Hour/Year	Total Cost/Year
Current Inventory ICR 1684.20, IC #1 Certification	16	\$192,223	\$0	\$800	2,464	\$193,023
Estimated Savings from Discontinuation of the end-of-year report: 10%	16	\$(19,222)	\$0	\$(80)	(246)	\$ (19,302)

In the case of Marine CI PLT, EPA is adopting changes that significantly reduce testing and reporting requirements. We estimate this to be a 30% reduction in burden, since manufacturers will still have to perform some testing and create a report. Table 6 below

approximates the burden and expense savings.

Table 8
Burden and Costs Savings from Changes to the PLT Program for Marine CI Engine Manufacturers

Marine CI Engine PLT	Number of Respondents	Labor Cost/Year	Capital Startup Costs	O&M Cost	Total Hour/Year	Total Cost/Year
Current Inventory ICR 1684.120, IC #1 Certification	29	\$661,223	\$0	\$511,307	8,900	\$1,172,530
Estimated Savings from this Action: 30%	29	\$(198,367)	\$0	\$(153,392)	(2,670)	\$(351,359)

EPA is also discontinuing HD engine Phase 2 in-use testing requirements beginning in MY 2027. Under current provisions, if an engine family selected for in-use verification fails eight out of 10 in-use tests (Phase 1), the manufacturer is required to test an additional 10 engines (Phase 2). The revised provisions establish fail/pass status with a maximum of 10 engines tested, the original limit of Phase 1, thus repealing Phase 2 provisions. While this change may represent significant potential savings for respondents, EPA is not accounting for it in this ICR because the burden associated with it was not reflected in ICR 1864.20.

EPA is also adding new certification test cycles to in-use testing; therefore, EPA has accounted for the incremental testing burden in Table 3. As described in ICR 1684.20, every year EPA orders an average of 6 manufacturers of highway CI HDE to test one engine family each.

The final rule includes other potentially burden-reducing provisions, such as allowing manufacturers to carry across OBD data between engine and vehicle families if those families are sufficiently similar. EPA is specifically applying carry-over or carry-across burden reductions in this ICR as it is unclear how many engine and vehicle families would qualify.

The final rule contains includes new recordkeeping requirements related to the new testing, data analysis, and other compliance provisions finalized. ICR 1684.20 already accounts for recordkeeping, and EPA has included a modest amount of burden and cost related to the new requirements in the final rule.

Regarding the number of responses, it must be noted that the final rule amends responses

(e.g., certification applications, ABT reports, PLT reports) already accounted for in the programmatic ICRs, mainly ICR 1684.20. The final rule only creates one new type of report: an annual DF verification report to be submitted by any highway HDE manufacturer directed to perform a DF verification for an engine family (estimated to be one engine family from one manufacturer each year). As noted previously, EPA only included responses for incremental burdens due to the final rule and did not include responses already accounted for in other ICRs to avoid duplicating the number of responses and artificially increasing the burden in the total inventory of burden.

6(e) Bottom Line Burden Hours and Cost Tables

6(e)(i) Respondent Tally

- Total Number of Respondents: 279
- Total Hours per Year: 16,951
 - o *Heavy-Duty Engines and Vehicles: 13,146*
 - o *Other Mobile Sources: 6,721*
 - o *Burden Reduction Measures: -2,916*
- Total Labor Cost per Year: \$1,627,771
 - o *Heavy-Duty Engines and Vehicles: \$1,185,671*
 - o *Other Mobile Sources: \$659,689*
 - o *Burden Reduction Measures: -\$217,589*
- Total Capital Costs per Year: 0
- Total O&M Costs per Year: \$1,685,848
 - o *Heavy-Duty Engines and Vehicles: \$1,823,540*
 - o *Other Mobile Sources: \$15,780*
 - o *Burden Reduction Measures: -\$153,472*
- Total Costs: \$3,313,619

6(e)(ii) Government Tally

- Number of Respondents: 279
- Total Hours per Year: 5,720
- Total Labor Cost per Year: \$285,823
- Total Capital Costs per Year: 0
- Total O&M Costs per Year: \$103,500
- Total Costs: \$389,323

6(f) Reasons for change in burden

This is a new collection related to a final rule; therefore, there is a net increase of 16,951 hours in burden due to government action.

6(g) Burden Statement

1The annual public reporting and recordkeeping burden for this collection is estimated to average 61 hours per respondent. 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.