

operate mass or volumetric flow meters, or already determine quantities of CO₂ imported or exported in containers using weigh bills, scales, or load cells. EPA has concluded that mass and volumetric flow meters provide more accurate data than sales contracts.

IV. Mobile Sources

A. Summary of Requirements of the Final Rule

For manufacturers of engines used in mobile sources outside of the light-duty sector²³, this rule includes new requirements for reporting emission rates of GHGs.²⁴ Mobile source engine manufacturers have been measuring CO₂ emission rates from their products for many years as a part of normal business practices and existing criteria pollutant emission certification programs, but they have not consistently reported these values to EPA. This final rule requires manufacturers to consistently measure and report CO₂ for all engines beginning with model year 2011 and other GHGs in subsequent model years.²⁵ Manufacturers meeting the definitions of "small business" or "small volume

²³ Manufacturers of light-duty vehicles, light-duty trucks, and medium-duty passenger vehicles are not covered in this final rule.

²⁴ The term "manufacturer," as well as the term "manufacturing company," as used in this preamble, means companies that are subject to EPA emission certification requirements. This primarily includes companies that manufacture engines domestically and foreign manufacturers that import engines into the U.S. market. In some cases this also includes domestic companies that are required to meet EPA certification requirements when they import foreign-manufactured engines.

²⁵ For aircraft engine manufacturers, reporting requirements will apply for the engine models in production in 2011.

manufacturer" under EPA's existing mobile source emissions regulations will generally be exempt from any new GHG reporting requirements.²⁶

In addition to CO₂, most manufacturers will now be required to report on two other major GHGs emitted by mobile sources, nitrous oxide (N₂O) and methane (CH₄). Although most current engines have relatively low emission rates of these GHGs compared to CO₂, these compounds have global warming potentials significantly higher than CO₂. It is important that EPA improve its understanding of these emissions from today's engines and monitor trends over time. The broad base of emission data that will begin to accrue from requirements in this rule will support emissions modeling by EPA and others, and will help guide future GHG policy.

Emissions of N₂O are related to catalytic treatment of engine exhaust, specifically aftertreatment of NO_x emissions. Therefore, we will require that manufacturers begin to measure and report N₂O emissions, but only for engine models that incorporate NO_x aftertreatment technology (as shown in Table IV-1 of this preamble). The program will not require N₂O reporting before model year 2013, and

²⁶ Small business manufacturers will continue to be subject to measurement and/or reporting requirements for compliance with existing regulations.

the requirements will only apply to new engines equipped with NO_x aftertreatment technology. (Manufacturers of some engine categories have employed aftertreatment for many years to meet NO_x standards; for other engine categories, manufacturers are unlikely to introduce NO_x aftertreatment technologies for some years to come.)

Emissions of CH₄ are a part of overall hydrocarbon emissions from mobile sources. Because CH₄ is not very reactive in the atmosphere, EPA has often excluded CH₄ from mobile source hydrocarbon regulations since it has not traditionally been a major determinant of ozone formation.²⁷ The new reporting requirements are necessary to evaluate the magnitude of mobile source CH₄ emissions from a GHG (rather than ozone precursor) perspective.

As described above, we are finalizing manufacturer reporting requirements for N₂O and CH₄ emission rates in order to understand current emissions of these GHGs and to monitor potential changes as technologies and policies change in the future. However, we believe that manufacturers may be able to provide alternative test data (and/or other information including engineering judgments

²⁷ But see Ford Motor Co. v. EPA, 604 F. 2d 685 (D.C. Cir. 1979) (permissible for EPA to regulate CH₄ under CAA section 202 (b)). In addition, although CH₄ is not itself regulated, manufacturers subject to "non-methane hydrocarbon" standards have needed to determine CH₄ emission levels, in some cases by using a default value and in many cases by way of testing.

based on test data) that would give EPA a reasonable basis for estimating the likely N₂O and CH₄ emission rates for each certified engine family. Therefore, we are including a provision in this final rule that would allow a manufacturer the opportunity to provide such alternative information in lieu of N₂O and/or CH₄ test data for each engine family.

In assessing such alternative information, EPA would consider how well the information provided by the manufacturer allows EPA to reasonably anticipate the emission performance of each of the manufacturer's engines. For example, we expect that in most cases a manufacturer wishing to omit engine testing will provide EPA with N₂O test data from relevant testing programs (by such sources as industry collaboratives and/or from the suppliers of the catalytic NO_x aftertreatment systems they are using on an engine. We would expect the manufacturer to also include an explanation of the manufacturer's engineering judgment as to why the data should apply to the engine family in question. For CH₄ emissions, our primary concern is the potential for unusually high emissions from natural gas fueled engines. Thus, we expect that in most cases a manufacturer of such an engine will provide test data on similar engines with similar catalyst systems for

hydrocarbon control (with an explanation of their engineering judgment as to why the data should apply to that engine family).

The reporting requirements related to C3 marine engines and turbofan and turbojet aircraft engines differ from other engine categories. As with other manufacturers, C3 marine engine and aircraft engine manufacturers will report CO₂ emission rates beginning in 2011 (for aircraft engines, they will report CO₂ separately for each mode of the landing and take-off (LTO) cycle used in the certification test, as well as the entire LTO cycle). For aircraft engine manufacturers, however, the reporting requirements will apply not just to engines introduced in that year, but for all engines still in production. (This should not require manufacturers to conduct any new testing, only to report existing data.) We are not requiring manufacturers of C3 marine engines and aircraft engines to measure or report N₂O or CH₄ emission rates because of unique aspects of their industries and technologies.

C3 marine engines are very large and manufacturers generally test them as they are installed into ships rather than in a laboratory setting. For this reason, we have

determined that requiring the addition of new N₂O and CH₄ measurement equipment for C3 engines would not be practical, and, as proposed, are not requiring such reporting in this rule.

Since aircraft engine manufacturers are unlikely to employ NO_x after treatment devices in the foreseeable future, we did not propose requiring N₂O reporting from aircraft engines and are not finalizing any requirements in this final rule. We are not finalizing our proposed requirement that aircraft engine manufacturers measure and report CH₄, as we learned that aircraft jet turbine engines have been shown to consume CH₄ from the ambient air during the dominant operating modes.²⁸ However, unlike NO_x emissions from most mobile sources, NO_x emissions from aircraft have been shown to make a potential contribution to climate change.²⁹ For this reason, we are requiring that aircraft engine manufacturers report the NO_x emission data for the LTO modes and the overall LTO cycle for all engine models currently in production, and for new engines as they are introduced. Manufacturers are already measuring NO_x as

²⁸ Aerodyne, Rich Miake-Lye, AAFEX Methane presentation at the Seventh Meeting of Primary Contributors for the Aviation Emissions Characterization Roadmap, June 9-10, 2009.

²⁹ IPCC, *Aviation and the Global Atmosphere*, 1999, at <http://www.grida.no/climate/ipcc/aviation/index.htm>, and NOAA, Written Testimony of Dr. David W. Fahey, Hearing on "Aviation and the Environment: Emissions," Before the Committee on Transportation and Infrastructure, Subcommittee on Aviation, U.S. House of Representatives, May 6, 2008.

part of current criteria pollutant certification requirements. NO_x emissions rate data from LTO modes will support modeling of overall NO_x emissions from aircraft.

For all engine categories, when a manufacturer certifies the engine in one year and then carries over the certification to subsequent years, EPA will not require re-testing of that engine model for reporting purposes.

As proposed, we are not including any requirements for mobile source fleet operators or State and local governments to report in-use travel activity or other emissions-related data in this final rule.

Table IV-1 of this preamble shows the basic reporting requirements we are finalizing in this notice for each engine category. We discuss in more detail how these reporting requirements will apply to manufacturers of each engine category in "Mandatory Greenhouse Gas Reporting Rule: EPA's Response to Public Comments, Motor Vehicle and Engine Manufacturing."

Table IV-1: First Model Year for GHG Reporting Requirements

Engine Category	CO ₂	N ₂ O ^a	CH ₄
Highway Heavy-Duty (engine and vehicle)	2011	2013 or NO _x AT	2012
Nonroad Diesel	2011	2013 or NO _x AT	2012
Marine Diesel (other than C3)	2011	2013 or NO _x AT	2012
C3 Marine	2011	None	None
Locomotives	2011	2013 or NO _x AT	2012
Small Spark-Ignition	2011	2013 or NO _x AT	2012
Large Spark-Ignition	2011	2013 or NO _x AT	2012
Marine Spark-Ignition	2011	2013 or NO _x AT	2012

Engine Category	CO ₂	N ₂ O ^a	CH ₄
Snowmobiles	2011	2013 or NO _x AT	2012
Highway Motorcycles	2011	2013 or NO _x AT	2012
Off Highway Motorcycles/ATVs	2011	2013 or NO _x AT	2012
Aircraft ^b	2011	None	None

^a N₂O reporting for new engines begins in 2013 or when the manufacturer introduces NO_x aftertreatment technology, whichever is later.

^b Applies to all turbofan and turbojet engines in production in 2011 with a rated output greater than 26.7 kilonewtons. Reporting of NO_x also required.

B. Summary of Major Changes Since Proposal

The major changes since proposal are identified in the following list. The rationale for these and any other significant changes can be found below or in "Mandatory Greenhouse Gas Reporting Rule: EPA's Response to Public Comments, Motor Vehicle and Engine Manufacturers."

- We are not finalizing the proposed requirements related to light-duty vehicles (including light-duty trucks and medium-duty passenger vehicles). EPA expects to propose a comprehensive light-duty GHG emission control program commencing in MY 2012 (see *Notice of Upcoming Joint Rulemaking to Establish Vehicle GHG Emissions and CAFÉ Standards*, 74 FR 24007 (May 22, 2009)), which is likely to contain monitoring, reporting and GHG data retention requirements that would supersede any reporting requirements established in this rule. Eliminating light-duty reporting requirements from this final rule will avoid issues of inconsistency and duplication.
- We have revised our proposal that all engine manufacturers measure and report N₂O for all of their engines, and instead will require N₂O reporting only for engines that use NO_x exhaust aftertreatment technology.
- We have delayed the proposed MY 2011 start year for N₂O reporting until MY 2013, and later for categories where the manufacturer has not applied NO_x aftertreatment technology.

- We have added additional emission test methods that manufacturers can choose for measuring N₂O, to assure that an appropriate method is available for any foreseeable circumstance (including the need to measure very low N₂O emission rates).
- The final rule incorporates an opportunity for a manufacturer to provide EPA with appropriate alternative information in lieu of N₂O and/or CH₄ testing, as described above.
- We have added one year of lead time to the proposed start year for reporting of CH₄ emissions, until 2012.
- We are not finalizing our proposal to require reporting of CH₄ for aircraft engines because, for the dominant operating modes, jet engines may consume CH₄ in the air.
- We are finalizing a requirement that we took comment on in the proposal to have aircraft engine manufacturers report NO_x emissions data they already collect, since, at altitude, NO_x emissions from aircraft have been shown to make a potential contribution to climate change.
- Since aircraft engines are not certified every year (there is no annual certification as is the case with other mobile sources), we have removed references to "model year" in the regulations and revised them to reflect the change to a January 1, 2011 start date for reporting CO₂ and NO_x emissions.

C. Summary of Comments and Responses

This section contains a brief summary of major comments and responses. A large number of comments on mobile source were received covering numerous topics. Responses to significant comments received can be found in "Mandatory Greenhouse Gas Reporting Rule: EPA's Response to Public Comments, Motor Vehicle and Engine Manufacturers."

Comment: Light-duty vehicle manufacturers and their trade organizations raised several concerns about the timing and nature of the reporting requirements.

Response: We agree in part with these comments. However, more fundamentally, we have concluded that the likelihood of GHG emission regulations affecting light-duty vehicles (including light-duty trucks and medium-duty passenger vehicles) in the near future argues for consolidating any new GHG reporting requirements into that upcoming rule. Therefore, we have elected to not finalize the proposed requirements relating to these vehicles at this time, and expect to incorporate similar provisions in a proposed rule on GHG standards for light-duty vehicles in the near future.

Comment: Engine manufacturers and their trade organizations challenged the proposed rule in several ways. In general, they questioned the need for the data to be reported; expressed concern that the proposed timing of the requirements, especially for N₂O and CH₄, was too aggressive; and commented that the proposed test procedure for N₂O was not adequate.

Response: We still conclude that there is significant value to collecting CO₂, N₂O, and CH₄ emissions rate data on the broad range of mobile sources being produced. As

stated earlier, the domestic and international attention to GHGs and their effects will only grow, and the ability for EPA and the public to understand and monitor emissions from mobile sources will be increasingly important as policies relating to GHGs are considered. Collecting emissions rate data from engine manufacturers on their new engines can improve modeling of emissions for the entire mobile source sector since current modeling relies on assumptions about N₂O and CH₄ emissions based on a limited number of field surveys. The data from this rule will also help EPA track emissions impacts from changes in technologies and policies over time.

For N₂O and CH₄, we agree that revisions in the proposed provisions are warranted. We have limited the reporting requirements for N₂O to engines equipped with NO_x aftertreatment technology as a way to reduce the reporting burden on engine manufacturers without significantly diminishing the amount of information we receive. As discussed earlier, emissions of N₂O are related to catalytic treatment of engine exhaust, specifically aftertreatment of NO_x emissions, and we have concluded that collecting N₂O emissions data from engines without NO_x aftertreatment technology would provide marginal value to the agency. We expanded the number of approved test methods for N₂O

measurement since we learned from comments and our own technical research that our proposed test methods for N₂O were not appropriate for every foreseeable circumstance, including measurement of very low levels of N₂O. We also extended the lead time available to manufacturers before N₂O and CH₄ reporting is required. We are providing this flexibility based on our conclusion that we can reduce the burden of purchasing and installing the required CH₄ and N₂O emissions rate measurement equipment by extending the lead time, without significantly diminishing the amount of information we receive. Finally, as described above, the final rule includes an opportunity for a manufacturer to provide EPA with appropriate alternative information in lieu of N₂O and/or CH₄ testing.

Comment: States and environmental organizations were generally supportive of the proposed reporting requirements, although some argued for earlier implementation, in 2010.

Response: We believe that the lead times we are finalizing for each GHG and for each engine category represent the earliest feasible timing, taking into consideration existing test capabilities and past experience, or the lack thereof.

Comment: Aircraft engine manufacturers commented that reporting of CO₂ emissions from each mode of the LTO³⁰ cycle used in the emission certification test, as proposed, is acceptable as long as existing methods for CO₂ are retained. In particular, commenters noted that reporting would result in minimal burden as long as CO₂ is calculated utilizing the engine fuel mass flow rate measurements, which are currently part of the test procedure requirements for the LTO cycle. However, an industry trade association expressed concern that reporting CO₂ from the LTO cycle is unjustified because LTO measurements do not include CO₂ emissions from an entire aircraft flight, which is affected by the propulsion system, drag, etc.

Response: We determined that calculating aircraft engine CO₂ emissions from fuel mass flow rate measurements is an appropriate method for reporting CO₂ emissions. Therefore, for turbofan and turbojet engines of rated output greater than 26.7 kilonewtons, we are finalizing that manufacturers report CO₂ separately for each mode of the LTO cycle by calculation of CO₂ from fuel mass flow rate measurements or, alternatively, according to the measurement criteria for CO₂ in Appendices 3 and 5 to ICAO Annex 16, volume II. Comprehensive and consistent

³⁰ Modes of the landing and takeoff cycle are taxi/idle, takeoff, climb out, and approach.

reporting of LTO CO₂ emissions, along with knowledge of aircraft aerodynamic performance, will support modeling of full-flight CO₂ emissions and help us to better understand overall contributions to global warming from aircraft operations.

Comment: Aircraft engine manufacturers raised two major issues related to our proposed CH₄ reporting. First, in response to EPA's request for comment on the degree to which engine manufacturers now have the needed equipment in their certification test cells to measure CH₄, manufacturers replied that test stands are not currently equipped to measure CH₄, and thus, they would incur additional costs to measure CH₄. Second, manufacturers noted that aircraft jet turbine engines have been shown to be consumers of CH₄ from the ambient air during the dominant operating modes (CH₄ is emitted at aircraft engine idle operation, but at higher power modes aircraft engines usually consume CH₄. Over the range of engine operating modes -- including cruise -- aircraft engines are typically net consumers of CH₄).

Response: Given that aircraft engines are likely net consumers of CH₄ and that manufacturers do not currently collect CH₄ data as part of existing test procedures, we are not requiring CH₄ to be measured and reported at this time.

Comment: We received several responses to our request for comment on whether to require aircraft engine manufacturers to report NO_x emissions in the four LTO test modes and for the overall LTO cycle. Manufacturers commented that NO_x emissions do not need to be reported directly to EPA, since this information is already voluntarily reported to the International Civil Aviation Organization (ICAO) and provided to the Federal Aviation Administration (FAA), and redundancy of reporting is unnecessary. Environmental organizations commented that EPA should require manufacturers to report NO_x since they currently do not report the data to EPA. In addition, environmental organizations commented that NO_x at high altitude can contribute to global warming.

Response: In this final rule, we are requiring that engine manufacturers of turbofan and turbojet engines of rated output greater than 26.7 kilonewtons record and report NO_x emissions in the four LTO test modes and for the overall LTO cycles. As discussed in the proposal and earlier in this final rule, NO_x from aircraft have been shown to make a potential contribution to climate change at high altitude. As required in 40 CFR 87, manufacturers must already measure and record NO_x emissions in each of the four LTO test modes in order to comply with the LTO NO_x

emission standard (for the entire LTO cycle). These data are not currently reported to EPA for public consideration as is the case with all other mobile sources. Manufacturers voluntarily report the data to ICAO, but there is no assurance that EPA will receive this information.

Likewise, the information provided to FAA is not readily accessible to EPA, and it is not of the detail provided to ICAO. Comprehensive and consistent reporting of LTO NO_x emissions rate data will support modeling of overall NO_x emissions from aircraft and help us to better understand overall contributions to global warming from aircraft operations.

V. Collection, Management, and Dissemination of GHG Emissions Data.

This section of the preamble describes the general processes by which EPA intends to collect, manage, and disseminate data under the GHG reporting rule. Section A contains a brief description of the provisions in the final rule concerning these processes, and Section B summarizes public comments and responses on data collection, management, and dissemination.

Major changes since proposal include revisions in 40 CFR 98.4 that provide flexibility for designated representatives to delegate their responsibility to agents,

and to submit revisions to the certificate of representation within 90 days of a change in owners or operators (rather than 30 days). In addition, the final rule includes a requirement that the designated representative submit the certificate of representation at least 60 days before the deadline of the facility or supplier's initial GHG report. The rationale for these and any other significant changes can be found in Section V.B of this preamble or in "Mandatory Greenhouse Gas Reporting Rule: EPA's Response to Public Comments, Designated Representative, and Data Collection, Reporting, Management, and Dissemination."

A. Summary of Data Collection, Management and Dissemination for the Final Rule

1. Designated Representatives, Alternate Designated Representatives, and Agents

Each covered facility and each supplier must identify one and only one designated representative who is responsible for certifying, signing, and submitting all submissions to EPA. A designated representative must certify and sign a submission, in accordance with the final rule, before it is considered a complete submission.

The designated representative also serves as a single point of contact for EPA to provide information about the

program or a submission or to ask questions about a submission. Those facilities submitting any other emission report under 40 CFR part 75, for example, ARP facilities, must use the same designated representative for certifying, signing and submitting all submissions and reports under this rule.

Each covered facility or supplier may also identify one alternate designated representative to act in lieu of the designated representative. The alternate designated representative can perform the same duties as the designated representative, but the designated representative is responsible for ensuring the appropriate information is submitted to EPA by the timelines specified in the rule.

A designated representative or alternate designated representative may delegate the submission of information to one or more "agents". The agent can make electronic submissions to EPA, but is not allowed to certify or sign a submission. By delegating to an agent the ability to make electronic submissions to EPA, a designated representative or alternate designated representative agrees that a submission to EPA by the agent is deemed to be a submission that is certified, signed, and submitted by such designated representative or alternate designated representative.

2. Certificate of Representation

A designated representative must submit a certificate of representation that identifies the owners and operators of the facility or supplier, the designated representative, any alternate designated representative, and other information as specified in 40 CFR 98.4. EPA will establish an electronic data reporting system that provides for the submission of initial, as well as subsequently signed, certificates of representation.

In order to ensure sufficient processing time before a facility or supplier's initial GHG report under this part, EPA is requiring that the designated representative submit a certificate of representation at least 60 days before the deadline for the initial GHG report.

3. Data Collection

Methods. If a reporting entity already reports GHG emissions data to an existing EPA program, the Agency will make efforts to minimize any additional burden on the reporter when developing the reporting system for the final rule. Some existing programs, however, have data collection and reporting requirements that are inconsistent with the requirements for the mandatory GHG reporting rule. When it is not feasible to adapt an existing program to collect the appropriate GHG data and supplemental data, EPA

will require reporters to submit the data required by the mandatory GHG reporting rule to the new data reporting system for this rule. Such reporters would also continue to submit data to the existing reporting systems for other applicable programs as required by those programs.

Reporters may fall into one or more categories:

(1) Reporters that use existing data collection and reporting methods and will not be required to report separately to the new data reporting system for the GHG reporting rule.

(2) Reporters that use existing data collection and reporting methods but will be required to report the data separately to the new data reporting system for the GHG reporting rule.

(3) Reporters that are not currently required to collect and report GHG emissions data to EPA and will be required to report using the new data reporting system for the mandatory GHG reporting rule.

For categories (2) and (3), EPA is developing a new system for reporters to submit the required data. The detailed data elements that must be reported are specified in the rule. In general, reporters using this new system must report annually to the Agency according to the schedule specified in 40 CFR 98.3(b).

Data Submission. The Designated Representative (described in 40 CFR 98.4) must use an electronic signature device (for example, a personal identification number (PIN) or password) to submit a report. If the Designated Representative holds an electronic signature device that is currently used for valid electronic signatures accepted under another Agency program, we intend to design the new reporting system to also accept valid electronic signatures executed with that device where feasible. (See 40 CFR 3.10 and the definitions of "electronic signature device" and "valid electronic signature" under 40 CFR 3.3.)

Unique Identifiers for Facilities and Units. The Agency's reporting format for a given reporting year could make use of several ID codes - unique codes for a unit or facility. To ensure proper matching between databases, e.g., EPA-assigned facility ID codes and the Office of Regulatory Information Systems (ORIS) (DOE) ID code, and consistency from one reporting year to the next, we plan for the reporting system to provide each facility with a unique identification code to be specified by the Administrator.

Reporting Emissions in a Single Unit of Measure. To maintain consistency with existing State-level and Federal-level GHG programs in the U.S. and internationally, all

emission measurements must be reported in the SI, also referred to as metric units. Data used in calculations and supplemental data for QA could still be submitted in English weights and measures (e.g., mmBtu/hr) but the specific units of measure must be included in the data submission. All emissions data must be submitted to the Agency in kg or metric tons per unit of time.

Conversion of Emissions to CO₂e. Reporters must submit the quantity of each applicable GHG emitted (or other metric such as quantities supplied for industrial GHG suppliers) in two forms. The data will be in the form of quantity of the gas emitted (e.g., metric tons of N₂O) per unit of time and CO₂e emissions per unit of time.

Delegation of Authority to State Agencies to Collect GHG Data. Reporters must submit the emissions data and supplemental data directly to EPA. At this time, EPA does not intend to delegate the authority to collect data to State or local agencies.

Submission Method. All entities covered by this rule must report in an electronic format to be specified by the Administrator. The electronic format, which will reflect the underlying electronic data reporting system, will be developed prior to the first reporting date. By specifying in the rule text the exact information that must be

reported but not specifying the exact reporting format, EPA informs reporters about exactly what information they must report and has flexibility to modify the electronic reporting format and electronic data reporting system in a timely manner based on implementation experience and new technology. EPA has used this approach successfully in existing programs, such as the ARP and the Title VI Stratospheric Ozone Protection Program, facilitating the deployment of new reporting formats and reporting systems that take advantage of technologies such as, eXtensible Markup Language (XML), and reducing the burden on reporters and the Agency. The electronic reports submitted under this rule are subject to the provisions of 40 CFR part 3, specifying EPA systems to which electronic submissions must be made and the requirements for valid electronic signatures.

4. Data Management

QA Procedures. The new reporting system will include automated checks for data completeness, data quality, and data consistency. Such automated checks are used for many other Agency programs (e.g., ARP.)

Providing Feedback to Reporters. EPA has established a variety of mechanisms under existing programs to provide feedback to reporters who have submitted data to the

Agency. EPA will consider the approaches used by other programs (e.g., electronic confirmations, results of QA checks) and develop appropriate mechanisms to provide feedback to reporters for the GHG reporting rule when we develop the electronic data reporting system. Regardless of data collection system specifics, the goal is to ensure appropriate transparency and timeliness when providing feedback to reporters who submitted data.

5. Data Dissemination

Public Access to Emissions Data. The Agency plans to publish data submitted or collected under this rulemaking through EPA's Web site, reports, and other formats (e.g., XML), with the exception of any confidential business information (CBI) data. For further discussion of CBI, see Section II.R of this preamble.

EPA will disseminate data after the reporting deadline. The Agency recognizes the high level of public interest in this data and plans to disclose it in a timely manner, while also assuring completeness and accuracy.

Sharing Emission Data with Other Agencies. There are a growing number of programs at the State, Tribe, Territory, and local level that require emission sources in their respective jurisdictions to monitor and report GHG emissions. In order to be consistent with and supportive

of these programs and to reduce burden on reporters and program agencies, EPA plans to share emissions data, with the exception of any CBI data, with relevant agencies or approved entities using, where practical, common data exchange standards and infrastructure.

B. Summary of Comments and Responses on Collection, Management, and Dissemination of GHG Emissions Data

This section contains a brief summary of major comments and responses. A large number of comments on data collection, management, and dissemination were received covering numerous topics. Responses to significant comments received can be found in "Mandatory Greenhouse Gas Reporting Rule: EPA's Response to Public Comments, Designated Representative and Data Collection, Reporting, Management, and Dissemination."

1. Designated Representatives, Alternative Designated Representatives, and Agents

Designated Representatives.

Comment: Several commenters requested that EPA use the ARP definition for designated representatives to maintain consistency across the two EPA programs and provide more flexibility regarding who can be a designated representative. Other commenters requested that EPA use the responsible official definition from Title V or senior

management official from TRI to maintain consistency with those programs. Other commenters raised concerns over the employment status of designated representatives.

Comment: A commenter noted that rule language was inconsistent in defining the relationships between designated representatives, facilities and suppliers, and owners and operators.

Response: EPA agrees that owners and operators should have more flexibility to identify a designated representative, including third-party representatives. EPA is striking the language requiring the designated representative to be a person responsible for the overall operation of the facility or supplier. Further, EPA is not requiring the use of a responsible official or senior management official because either approach would be more restrictive than the designated representative definition of the final rule. EPA believes that the proposed rule was neutral with respect to the employment status of the designated representative. The final rule provides flexibility for the owners and operators to choose any individual, employee or non-employee, to represent them. EPA modified the rule to clarify that each facility and each supplier shall have one and only designated representative and that the designated representative must

be authorized by binding agreement of the owners and operators.

Agents.

Comment: Several commenters requested that EPA allow designated representatives and alternate designated representatives the option of delegating their responsibility to prepare and submit reports to EPA to a preparer or agent. Commenters also stated that the designated representative requirement is inconsistent with Title V reporting.

Response: EPA agrees that it is beneficial to give the designated representatives and alternate designated representatives' flexibility concerning who prepares the reports that they are responsible for submitting. The final rule does not specify who must prepare reports, but only specifies who must certify, sign, and submit them. EPA also agrees that flexibility should be provided concerning who actually submits the reports, similar to the flexibility provided in the ARP. This flexibility was implied in the provision in the proposed rule that reports be submitted "in a format specified by the Administrator," which format has included, in other programs such as the ARP, the ability to use agents. However, EPA decided to make this flexibility explicit by including in the rule

provisions allowing and setting requirements for agents selected by designated representatives or alternate designated representatives. The structure of designated representative, alternate designated representative and agent fits a wide range of circumstances from large companies to small, including those accustomed to reporting under Title V.

Certification Statement.

Comment: Several commenters described the self-certification procedures in the proposed rule as too restrictive or suggested that the rule should be consistent with requirements of the Title V or TRI program. For example, the rule's requirement that the designated representative certify that they have "personally examined" the data should be replaced by the Title V requirement that a responsible official certify that they have made a "reasonable inquiry" as to the accuracy of the data.

Response: EPA believes that the high level of public interest in the data collected under this rule, as well as its importance to future policy, warrants establishment, by rule pursuant to CAA Sections 114, 208, and 301(a)(1), of a high standard for data quality and consistency and a high level of accountability for reported data, which will help ensure that the data quality and consistency standard is

met. The certification requirements set forth in this rule are similar to the ARP (Title IV). EPA has successfully implemented this approach in the ARP and found that it provides a high degree of both data quality and consistency and accountability.

2. Certificate of Representation.

Comment: One commenter requested that EPA designate a deadline for the submission of the certificate of representation to ensure sufficient time to process the submissions.

Response: EPA agrees that an earlier deadline for submitting certificates of representation is advisable to provide additional lead time to process the certificates and, if necessary, verify identities and resolve issues. Because any delay in processing a certificate of representation could delay the submission of data, EPA is requiring that the designated representative submit the initial certificate of representation at least 60 days prior to the deadline for a facility or supplier's initial GHG report.

Comment: Several commenters noted that a certificate of representation for each facility and supplier is burdensome either due to timing with the annual report, the need to maintain current information, or ambiguities as to

whether the certificate is complete. Commenters also requested that reporters be allowed more than 30 days to submit a revised certificate of representation in the event of a change in operators or owners.

Comment: Several commenters requested that EPA provide an electronic system for submitting and processing certificates of representation.

Response: EPA does not agree that certificates of representation are unnecessary or overly burdensome or that there should be any uncertainty as to whether a certificate of representation is complete. The information required on the certificate of representation is listed in the rule and should be well known to the owners and operators of the facility or supplier. It is the responsibility of the individual submitting the certificate to ensure its completeness. This certificate of representation has been used successfully for over a decade in the ARP.

To minimize burden, the electronic data reporting system will provide the means to electronically submit both the initial and any subsequent certificate of representation. EPA agrees that reporters should be allowed more time to update changes in owners or operators but does not agree that doing so in the annual report is sufficient. The designated representative is the primary

point of contact between the owners and operators and the EPA. However, the owners and operators are ultimately responsible for compliance with the requirements of reporting rule, and it is therefore essential that the information in the certificate of representation be timely and accurate in the event EPA finds it necessary to contact the owners and operators of the facility or supplier during periods in between the submission dates of the annual reports, for example, to perform an audit. The final rule allows reporters up to 90 days to submit a revised certificate of representation when a change in owners or operators occurs. In addition, EPA modified both the owner definition and rule to clarify that the certificate of representation does not need to list persons whose legal or equitable title to or leasehold interest in a facility or supplier arises solely because they are limited partners in a partnership with legal or equitable title to, a leasehold interest in, or control of, the facility or supplier.

3. Data collection Methods

Comment: Several commenters requested that EPA use current emission inventory reporting programs (e.g., NEI) to handle data collection or to sunset the GHG reporting rule, and instead use such programs, after five years.

Response: EPA is requiring electronic reports to be submitted directly to EPA using a new data reporting system for the GHG reporting rule. The rationale for the decision to report directly to EPA is contained in Sections II.N (emissions verification) and VI.B (compliance and enforcement) of this preamble. EPA recognizes the value of integrating the GHG data reported under this rule with other emission reporting programs. NEI, for example, plans to incorporate the GHG emissions data from this collection, as feasible.

Comment: Commenters requested that the design of the new data system be modeled on existing electronic reporting programs, incorporate measures to handle system errors, and provide opportunities for testing and user training.

Response: EPA agrees that a national electronic emissions database should be the basis for receiving GHG data, and that the ARP database provides a useful model for a future GHG emissions database. Data would be provided to EPA electronically to reduce the burden on the reporters and EPA, and to increase the accuracy of the reported emissions, among other reasons. The issue of transmission failures and transmission errors will be addressed in the development of the electronic reporting system. EPA agrees that it is important for data reporters to be able to

confirm that their data were accepted by the system and to compare the data in the system to the data that they reported to ensure it was accurately incorporated into the database. The new data system will meet Agency requirements for security and hosting. EPA acknowledges comments supporting a "user friendly" reporting system. EPA plans to follow well known design practices within the constraints of security, accessibility and Agency design requirements.

EPA agrees with commenters on the need for testing and user training. We will continue the outreach effort undertaken during this rulemaking to encourage stakeholder participation in 'beta' testing and training opportunities.

Unique Identifiers for Facilities and Units

Comment: Several commenters requested that EPA assign and track corporate identifiers for reporting facilities to facilitate corporate-level analysis of emission data. Commenters also requested that EPA publish a list of identifiers for all EPA programs that a covered facility may report to.

Response: EPA is collecting owner and operator information through the Certificate of Representation (40 CFR 98.4). At this time, EPA is not proposing to assign unique identifiers to the owners and operators because of

the complexity of ownership structures (including percentage shares of owners, subsidiaries, holding companies, and limited liability partnerships) that can be used in the multiplicity of industrial sectors required to report emission data under this rule. Although as explained earlier in the preamble, we are exploring options for adding additional data elements to the reports, such as name of parent company and NAICS code(s), to allow easier aggregation of facility-level data to the corporate level under this program. EPA expects to subject any additional requests to notice and comment rulemaking.

EPA's Facility Registry System (FRS) links EPA program identification numbers under a unique facility record. The FRS database is publicly available to queries from the EPA.GOV Web site under the Envirofacts Data Warehouse home page:

http://www.epa.gov/enviro/html/fii/fii_query_java.html.

Descriptive information about FRS can be found at:

<http://www.epa.gov/enviro/html/fii/index.html>. FRS may be searched by program identification, facility name or geographic location. The Agency will continue to make FRS and all program identification numbers readily available and will include the facilities reporting under this rule

in the FRS collection of program ID's once public release of the data is authorized.

Submission Method

Comment: Several commenters requested that EPA specify the format of the data collection methods and subject it to public comment before finalizing the rule. These commenters indicated that without the details of the data collection methods it was not possible to evaluate the GHG reporting rule, including implementation costs and reporting burden.

Response: The final rule requires reports to be submitted "in a format specified by the Administrator." EPA is thereby retaining the flexibility to specify the electronic format, and the underlying electronic reporting system reflected in the format, after promulgation of this rule but well before the first reporting deadline and, if necessary, to change the electronic format and electronic reporting system based on implementation experience and new technology. Several other reporting programs (e.g., ARP) use a similar approach where the specific electronic reporting system is not included within the rule or subjected to formal notice and comment. The relevant subparts of the proposed GHG reporting rule specified the data elements that each entity must report, and therefore

parties could evaluate the reporting burden and costs under the proposed rule and had an opportunity to comment on that aspect of the proposed rule. In addition, before specifying the electronic format and underlying electronic reporting system, EPA will conduct outreach and provide opportunities for stakeholder feedback on the specific reporting format and reporting system.

Comment: Several commenters requested that EPA provide alternative methods to report emission data, including paper submissions, scanned documents, and direct data upload.

Response: EPA is requiring electronic reporting of the GHG and supplemental data to increase the accuracy and timeliness of the reported emission data and is not providing options for paper or scanned GHG reports. Requiring electronic submission of data allows EPA to conduct electronic QA testing of all such data when it is received and to provide electronic feedback to the reporters almost instantaneously. This gives reporters the opportunity to correct any errors, or to provide explanations of potentially problematic data, within a short time frame, thereby increasing the accuracy and timeliness of the data. Moreover, electronically submitted data can be readily sorted and analyzed by EPA and members

of the public. In contrast, submission of hardcopy data (whether in paper or scanned documents) would make audit and correction, as well as sorting and analysis, of the data much more cumbersome, inefficient, and time consuming. Indeed, particularly in light of the large number of facilities and suppliers that will be reporting and the large amounts of reported data that will be received as a result, the ability to audit and analyze the data received in hardcopy format would likely be significantly limited. This would adversely affect the usefulness, as well as the accuracy and timeliness of the data.

In requiring electronic data submission, EPA will provide a Web-based reporting system to guide reporters through the data entry, emission calculation, and submission process. This reporting system will conform to EPA information technology standards and 40 CFR part 3. In addition, EPA will provide a mechanism for reporters to submit data files directly to EPA using a standard format (e.g., XML) to be prescribed by the Administrator before the first reporting date. To reduce the burden on reporters and reduce errors, EPA will conduct outreach and training for reporters on the reporting format and underlying reporting systems. EPA will also provide a hotline to answer questions about the program and reporting

format and reporting systems. EPA expects that most reporters affected by this rule are already familiar with Web-based or electronic reporting systems through other EPA programs.

Delegation of Authority to State Agencies to Collect GHG Data

Comment: Several commenters requested that EPA delegate rule implementation, including data collection, to State and local agencies. These commenters indicated that several States already have GHG reporting requirements and have systems in place to collect and verify this data, and suggested that delegation of the rule could help reduce inconsistency or duplication of effort between State programs and this Federal mandatory GHG reporting rule. Other commenters supported requiring facilities to submit data directly to EPA, without delegation of data collection to State and local agencies, in order to provide national consistency.

Response: EPA is requiring electronic reports to be submitted directly to EPA, and is not delegating data collection to State and local agencies. The rationale for this decision is provided in Section VI.B of this preamble.

5. Data Dissemination

Public Access to Emissions Data.

Comment: Several commenters supported EPA's proposal to make the data submitted under the reporting rule available to the public. Some requested that data be published real time, while others requested the data be released in a timely manner.

Response: With the exception of CBI, EPA intends to make data submitted under this program available to the public in a timely manner after the reports have been submitted and EPA has completed QA/QC of the data. To that end, EPA intends to establish a new reporting system that will accept electronic submissions of GHG emissions and supporting data and facilitate EPA's verification of the submissions. EPA plans to provide public access to the data by posting electronic data on a Web site in a timely manner after the reporting deadline. This level of transparency is important to public participation in future policy development and for building public confidence in the quality of the data collected.

Sharing Emissions Data with Other Agencies.

Comment: Some commenters stressed that electronic data reporting systems need to be consistent and interoperable and allow data exchange between TCR, State rules, NEI, ARP, other stakeholders and EPA.

Response: EPA will continue to coordinate with other Federal, State, and regional programs and will make efforts to facilitate data exchange when designing the data reporting system that will be used for the GHG reporting rule. EPA intends to employ inter-operable data exchange standards. EPA intends to design and manage the GHG data collection to take advantage of existing efforts on data exchange standards and to work with stakeholder groups to promote the easy exchange and sharing of the data collected under this rule. For example, EPA is extending the Consolidated Emissions Reporting Schema (CERS), currently in use by the EPA's NEI program, to support data reporting and publication under this rule. EPA also intends to use existing tools, such as FRS and SRS, to ensure data consistency.

To the extent possible, EPA will consider existing reporting systems and work with those programs and systems to develop a reporting scheme that facilitates data exchange. EPA anticipates that this coordination will reduce the burden of reporting for both reporters and government agencies. However, as explained in Section II.0 of this preamble, the various reporting programs do not have identical data needs and requirements. Therefore, at this time, it is not possible for companies reporting under

State and Federal rules and voluntary programs to file a single report that will satisfy all reporting requirements.

Comment: Commenters requested that the data system utilize common standards, such as XML and geographic identifiers, and provide descriptive text wherever codes or abbreviations are used.

Response: EPA agrees that publishing the results of this data collection using common, standards-based schemas and formats will promote the exchange of data between EPA, States and other entities. The published results will include the latitude and longitude of facilities as well as help text with definitions of codes and abbreviations.

VI. Compliance and Enforcement

This section of the preamble generally describes the compliance assistance and enforcement activities EPA intends to implement for the GHG reporting rule and summarizes public comments and responses on compliance assistance, role of the States, and enforcement.

A. Compliance and Enforcement Summary

1. Compliance Assistance

EPA plans to conduct an active outreach and technical assistance program following publication of the final rule. The primary audience is potentially affected industries. We intend to develop implementation and outreach materials

and training to help potential reporters understand whether the rule applies to them and explain the reporting requirements and timetables. The program particularly will target industrial, commercial, and institutional sectors that do not routinely deal with air pollution regulations.

Compliance materials will be tailored to the needs of various sectors. These materials might include, for example, fact sheets, information sheets, plain English guides, frequently asked question and answer documents, applicability tools, monitoring and recordkeeping checklists, and training on rule requirements and the electronic reporting system. We also expect to implement a compliance assistance e-mail and telephone hotline for answering questions and providing technical assistance. Note that while EPA plans to issue compliance assistance materials, reporters should always consult the final rule to resolve any ambiguities or questions.

2. Role of the States

While EPA does not intend to formally delegate data collection and enforcement of the GHG reporting rule to State agencies, EPA will likely enlist State assistance, when it is available, for outreach and compliance assistance with the final rule. (However, State and local agencies will not be required to provide EPA any assistance

with these activities, given State and local agency resource constraints and priorities.). State and local air pollution control agencies routinely interact with many of the sources that would report under this rule. Further, several States have experience implementing State mandatory GHG reporting and reduction programs. Therefore, we plan to work with those State and local agencies that are able to assist EPA to define their role in communicating the requirements of the rule and providing compliance assistance. In concert with their routine inspection and other compliance and enforcement activities for other CAA programs, State and local agencies may also be able to assist with educating facilities and assuring compliance at facilities subject to this rule.

3. Enforcement

Facilities or suppliers that fail to monitor or report GHG emissions, quantities supplied, or other data elements according to the requirements of the applicable rule subparts could potentially be subject to enforcement action by EPA under CAA sections 113 and 203-205. The CAA provides for several levels of enforcement that include administrative, civil, and criminal penalties. The CAA allows for injunctive relief to compel compliance and civil

and administrative penalties of up to \$37,500 per day per violation.³¹

Actions (or inactions) that could ultimately be considered violations include but are not limited to the following:

- Failure to report GHG emissions (for suppliers, the emissions that would result from combustion or use of the products they supply).
- Failure to collect data needed to calculate GHG emissions.
- Failure to continuously monitor and test as required. Note that merely filling in missing data as specified does not excuse a failure to perform the monitoring or testing.
- Failure to calculate GHG emissions according to the methodology(s) specified in the rule.
- Failure to keep required records needed to verify reported GHG emissions.
- Falsification of reports.

B. Summary of Public Comments and Responses on Compliance and Enforcement

This section contains a brief summary of major comments and responses. A large number of comments on compliance and enforcement were received covering numerous topics. Responses to significant comments received can be

³¹ The Federal Civil Penalties Inflation Adjustment Act of 1990, Public Law 101-410, 104 Stat. 890, 28 U.S.C. 2461, note, as amended by Section 31001(s)(1) of the Debt Collection Improvement Act of 1996, Public Law 104-134, 110 Stat. 1321-373, April 26, 1996, requires EPA and other agencies to adjust the ordinary maximum penalty that it will apply when assessing a civil penalty for a violation. Accordingly, EPA has adjusted the CAA's provision in Section 113(b) and (d) specifying \$25,000 per day of violation for civil violations to \$37,500 per day of violation.

found in "Mandatory Greenhouse Gas Reporting Rule: EPA's Response to Public Comments, Compliance and Enforcement."

1. Role of States in compliance and enforcement

Comment: Several commenters requested that EPA delegate rule implementation, including data collection, emissions verification, and enforcement of the rule to State and local agencies. These commenters indicated that several States already have GHG reporting requirements and have systems in place to collect and verify these data, and they suggested that delegation of the rule could help reduce inconsistency or duplication of effort between State programs and this Federal mandatory GHG reporting rule. However the majority of commenters, including industry, environmental organizations, and many public citizens supported requiring facilities to submit data directly to EPA, without delegation of data collection or emissions verification to State and local agencies, in order to provide national consistency.

Response: Section 114(b) of the CAA allows EPA to delegate to States the authority to implement and enforce Federal rules. At this time, however, EPA does not propose to formally delegate implementation of the rule (such as data collection and enforcement activities) to State and local agencies, as discussed in Section II.0 of this

preamble. The goal of data collection under this rule is to establish a consistent, verified, national data set that is available to EPA, States, other agencies, policy makers, and the public for use in developing and implementing future GHG policies and reduction programs. To meet these data consistency and timeliness constraints, and to serve policy objectives, it is most efficient to have the data submitted directly into one central EPA system and have centralized emissions data verification. Direct reporting to EPA will also help us better understand and address common compliance problems that may arise from the GHG reporting rule.

EPA recognizes that several States already have mandatory GHG reporting programs that are broader in scope, in a more advanced state of development, and have different policy objectives than this rulemaking. These are important programs that not only led the way in reporting of GHG emissions before the Federal government acted but also have catalyzed important GHG reductions.

As discussed in Section II.0 of this preamble, we are committed to working with States and other groups (e.g., TCR, Environmental Council of the States (ECOS)) to develop electronic reporting tools that can both collect and share data in an efficient and timely manner. At this time, EPA

is in the process of developing the reporting format and tools and therefore has not specified the exact reporting format, other than it will be electronic, in order to maintain flexibility to modify the reporting format and tools in a timely manner. To the extent possible, EPA will work with existing reporting programs and systems to develop a reporting scheme that minimizes the burden on sources.

While EPA is not delegating authority to the States, we will work with States as we develop rule implementation plans to determine appropriate implementation roles, such as assisting with outreach efforts and site visits to audit facility reports. For related comments and responses, please see the following sections of this preamble: II.N (verification approach), II.O (role of States) and II.R (CBI).

2. Enforcement

Comment: Some commenters suggested that States should be allowed to participate in the enforcement of the GHG reporting rule, perhaps through delegated enforcement authority.

Response: EPA welcomes States' interest in helping EPA enforce this or any other Federal rule and we will work with States to determine appropriate roles as described

above. We do not plan to delegate the enforcement of this rule in the same sense that we do under other CAA programs such as the NESHAP program in which, for example, notices may be sent only to the delegated States. If a State would like the authority to enforce this rule, then the State may adopt the provisions of this GHG reporting rule into State laws or regulations by reference. This would make the provisions enforceable as a matter of State law which can be enforced in a State court.

Comment: Some commenters stated that they should be able to petition EPA to enforce against violators where they have evidence of or suspect violations.

Response: EPA welcomes any tips from citizens about suspected violations of this or any rule through our tips Web site, www.epa.gov/tips. However, we are not including a formal petition process in the rule because such a process was not proposed. We do not favor a formal petition process because a formal petition is not necessary for us to investigate concerns raised by citizens and such a process might take extra time or divert resources from other priorities.

Comment: Some commenters stated that a flexible enforcement policy is needed. They noted that the proposed rule cited the CAA for the authority for the GHG reporting

rule and stated that a violation of the reporting rule is a violation of the CAA and subject to maximum daily penalties allowed under the CAA. However, the commenters were concerned that the maximum penalty should not be applied in most cases and argued that there are many instances when a less severe action is appropriate.

Response: EPA agrees with the commenters that flexibility is needed in enforcing the rule. The penalty cited in the proposal preamble and rule is a statutory maximum, and would not be applied in every case. EPA's objective with the reporting rule is to collect accurate GHG data in a timely manner. In order to achieve that objective, EPA will generally work with sources that must submit GHG reports in order to facilitate compliance and provide the needed data to EPA. The CAA allows EPA discretion to pursue a variety of informal and formal actions in order to achieve compliance. While EPA is committed to working with reporters to ensure accuracy, this does not relieve reporters from their obligation to report data that are complete, accurate, and in accordance with the requirements of this rule.

In many instances, based on past enforcement experience, less punitive enforcement actions are exhausted before more punitive fines and penalties are imposed on a

non-complying source. These less punitive actions may include a warning to the source that it is in non-compliance along with advice on what needs to be done to comply and a request for response from the facility. Initial actions may also include a formal legal notification from EPA that defines the violation, provides evidence, and requires (orders) corrective actions by specific dates. The EPA enforcement office always uses discretion and takes case-specific circumstances into account when determining the appropriate actions to address violations of CAA rules. We will continue to do so in enforcing the reporting rule, and we are not laying out a specific enforcement policy or hierarchy in order to maintain the necessary flexibility.

VII. Economic Impacts on the Rule

This section of the preamble examines the costs and economic impacts of the GHG reporting rule, including the estimated costs and benefits of the rule, and the estimated economic impacts of the rule on affected entities, including estimated impacts on small entities. Complete detail of the economic impacts of the final rule can be found in the text of the Regulatory Impact Analysis (RIA) for the final rule (EPA-HQ-OAR-2008-0508).

This section also contains a brief summary of major comments and responses. A large number of comments on economic impacts of the rule were received covering numerous topics. Responses to significant comments received can be found in "Mandatory Greenhouse Gas Reporting Rule: EPA's Response to Public Comments, Cost and Economic Impacts of the Rule."

A. How were compliance costs estimated?

1. Summary of Method Used to Estimate Compliance Costs

EPA estimated costs of complying with the rule for reporting process emissions of GHGs in each affected industrial facility, as well as emissions from stationary combustion sources at industrial facilities and other facilities, GHG and supply data from fuel suppliers and industrial gas suppliers, and GHG data for mobile sources. 2006 is the representative year of the analysis in that the annual costs were estimated using the 2006 population of emitting sources. EPA used available industry and EPA data to characterize conditions at affected sources. Incremental monitoring, recordkeeping, and reporting activities were then identified for each type of facility and the associated costs were estimated.

The costs of complying with the rule will vary from one facility to another, depending on the types of

emissions, the number of affected sources at the facility, existing monitoring, recordkeeping, and reporting activities at the facility, etc. The costs include labor costs for performing the monitoring, recordkeeping, and reporting activities necessary to comply with the rule. For some facilities, costs include costs to monitor, record, and report emissions of GHGs from production processes and from stationary combustion units. For other facilities, the only emissions of GHGs are from stationary combustion. EPA's estimated costs of compliance are discussed in greater detail below:

Labor Costs. The costs of complying with and administering this rule include time of managers, technical, and administrative staff in both the private sector and the public sector. Staff hours are estimated for activities, including:

- Monitoring (private): staff hours to operate and maintain emissions monitoring systems.
- Reporting (private): staff hours to gather and process available data and reporting it to EPA through electronic systems.
- Assuring and releasing data (public): staff hours to quality assure, analyze, and release reports.

Staff activities and associated labor costs will potentially vary over time. Thus, cost estimates are developed for start-up and first-time reporting, and

subsequent reporting. Wage rates to monetize staff time are obtained from the Bureau of Labor Statistics (BLS).

Equipment Costs. Equipment costs include both the initial purchase price of monitoring equipment and any facility/process modification that may be required. For example, the cost estimation method for mobile sources involves upstream measurement by the vehicle manufacturers. This may require an upgrade to their test equipment and facility. Based on expert judgment, the engineering costs analyses annualized capital equipment costs with appropriate lifetime and interest rate assumptions. Cost recovery periods and interest rates vary by industry, but typically, one-time capital costs are amortized over a 10-year cost recovery period at a rate of seven percent.

2. Summary of Comments and Responses

Comment: A majority of the comments received on the compliance costs of the reporting rule focused on facility level costs for monitoring and reporting. Commenters noted that noted that costs estimated for a representative facility may differ from actual facility level costs. Some commenters specifically referred to the costs associated with installing and maintaining capital equipment. Other commenters noted that some source categories had higher estimated compliance costs than others. Several commenters

expressed confusion over how combustion related monitoring costs are added to process related monitoring costs.

Response: EPA recognizes that the costs presented for facilities represent costs that would be incurred by a representative facility, and may not reflect the costs that would be incurred by each individual facility in each industry because facilities affected by each subpart vary.

Nevertheless, after reviewing the comments received, EPA has determined that its analysis provides a reasonable characterization of costs for facilities affected by each subpart and that its documentation provides adequate documentation of how the costs were estimated. As described in the next section, EPA collected and evaluated cost data from multiple sources, and weighed the analysis prepared at proposal against the input received through public comments. In any analysis of this type, there will be variations in costs among facilities, and after thoroughly reviewing the available information, we have concluded that the costs developed for this rule appropriately reflect a "representative facility" in the sector.

The costs facing facilities in some sectors include not only process costs but additional costs associated with other subparts of the rule. While these costs are

presented individually in Section 4 of the RIA for the final rule, where these conditions apply the costs are summed across applicable subparts and compared to revenues in the economic and small entity impact analyses.

B. What are the costs of the rule?

1. Summary of Costs

For the cost analysis, EPA gathered existing data from EPA, industry trade associations, States, and publicly available data sources (e.g., labor rates from the BLS) to characterize the processes, sources, sectors, facilities, and companies/entities affected. EPA also considered cost data submitted in public comments on the proposed rule, as further discussed in Section VII.B.2 of this preamble. Costs were estimated on a per entity basis and then weighted by the number of entities affected at the 25,000 metric tons CO₂e threshold.

To develop the costs for the rule, EPA estimated the number of affected facilities in each source category, the number and types of combustion units at each facility, the number and types of production processes that emit GHGs, process inputs and outputs (especially for monitoring procedures that involve a carbon mass balance), and the measurements that are already being made for reasons not associated with the rule (to allow only the incremental

costs to be estimated). Many of the affected source categories, especially those that are the largest emitters of GHGs (e.g., electric utilities, industrial boilers, petroleum refineries, cement plants, iron and steel production, pulp and paper) are subject to national emission standards and we use data generated in the development of these standards to estimate the number of sources affected by the reporting rule.

Other components of the cost analysis included estimates of labor hours to perform specific activities, cost of labor, and cost of monitoring equipment. Estimates of labor hours were based on previous analyses of the costs of monitoring, reporting, and recordkeeping for other rules; information from the industry characterization on the number of units or process inputs and outputs to be monitored; and engineering judgment by industry and EPA industry experts and engineers. Labor costs were taken from the BLS and adjusted to account for overhead. Monitoring costs were generally based on cost algorithms or approaches that had been previously developed, reviewed, accepted as adequate, and used specifically to estimate the costs associated with various types of measurements and monitoring.

A detailed engineering analysis was conducted for each subpart of the rule to develop unique unit costs. This analysis is documented in the RIA for the final rule. The TSDs for each source category provide a discussion of the applicable measurement technologies and any existing programs and practices. The appropriate volume of "Mandatory Greenhouse Gas Reporting Rule: EPA's Response to Public Comments" for each source category provide responses to any public comments on these source category engineering and cost analyses. Section 4 of the RIA for the final rule contains a description of the engineering cost analysis.

Table VII-1 of this preamble presents by subpart: the number of entities, the downstream emissions covered, the first year capital costs and the first year annualized costs of the rule. EPA estimates that the total national annualized cost for the first year is \$132 million, and the total national annualized cost for subsequent years is \$89 million (2006\$). Of these costs, roughly 13 percent fall upon the public sector for program administration in the first year, while 87 percent fall upon the private sector. General stationary combustion sources, which are widely distributed throughout the economy, are estimated to incur approximately 26 percent of costs in the first year; other sectors incurring relatively large shares of costs are pulp

and paper manufacturing (9 percent) and vehicle and engine manufacturers (9 percent).

The threshold, in large part, determines the number of entities required to report GHG emissions and hence the costs of the rule. The number of entities excluded increases with higher thresholds. Table VII-2 of this preamble provides the cost-effectiveness analysis for various thresholds examined. Two metrics are used to evaluate the cost-effectiveness of the emissions threshold. The first is the average cost per metric ton of emissions reported (\$/metric ton CO₂e). The second metric for evaluating the threshold option is the incremental cost of reporting emissions. The incremental cost is calculated as the additional (incremental) cost per metric ton starting with the least stringent option and moving successively from one threshold option to the next. For more information about the first year capital costs (unamortized), project lifetime and the amortized (annualized) costs for each subpart, please refer to section 4 of the RIA for the final rule and the RIA cost appendix. Not all subparts require capital expenditures but those that do are clearly documented in the RIA for the final rule.

Table VII-1. Estimated Covered Entities, Emissions and Costs by Subpart (2006\$)

Subpart	Number Covered of Entities	Downstream Emissions		First Year Capital Costs		First Year Total Annualized Costs ²	
		(Million of MtCO ₂ e)	Share	(Million)	Share	(Million)	Share
Subpart A –General Provisions	0	0.0	0%	\$0.0	0%	\$0.0	0%
Subpart B – Reserved	0	0.0	0%	\$0.0	0%	\$0.0	0%
Subpart C –General Stationary Fuel Combustion Sources	3,000	220.0	6%	\$10.5	27%	\$25.8	20%
Subpart D –Electricity Generation	1,108	2262.0	59%	\$0.0	0%	\$3.3	2%
Subpart E –Adipic Acid Production	4	9.3	0%	\$0.0	0%	\$0.1	0%
Subpart F –Aluminum Production	14	6.4	0%	\$0.0	0%	\$0.2	0%
Subpart G –Ammonia Manufacturing	23	12.9	0%	\$0.0	0%	\$0.4	0%
Subpart H –Cement Production	107	86.8	2%	\$5.4	14%	\$6.8	5%
Subpart K –Ferroalloy Production	9	2.3	0%	\$0.0	0%	\$0.1	0%
Subpart N –Glass Production	55	2.2	0%	\$0.0	0%	\$0.5	0%
Subpart O –HCFC-22 Production	3	13.8	0%	\$0.0	0%	\$0.0	0%
Subpart P –Hydrogen Production	41	15.0	0%	\$0.0	0%	\$0.4	0%
Subpart Q –Iron and Steel Production	121	85.0	2%	\$0.0	0%	\$3.7	3%
Subpart R –Lead Production	13	0.8	0%	\$0.0	0%	\$0.1	0%
Subpart S –Lime Manufacturing	89	25.4	1%	\$4.9	12%	\$5.3	4%
Subpart U – Miscellaneous Uses of Carbonates	0	0.0	0%	\$0.0	0%	\$0.0	0%
Subpart V –Nitric Acid Production	45	17.7	0%	\$0.2	1%	\$0.9	1%
Subpart X – Petrochemical Production	80	54.4	1%	\$0.0	0%	\$2.2	2%
Subpart Y –Petroleum Refineries	150	204.7	5%	\$1.6	4%	\$6.1	5%
Subpart Z –Phosphoric Acid Production	14	3.8	0%	\$0.8	2%	\$0.8	1%
Subpart AA –Pulp and Paper Manufacturing	425	57.7	2%	\$14.8	37%	\$8.6	7%
Subpart BB –Silicon Carbide Production	1	0.1	0%	\$0.0	0%	\$0.0	0%
Subpart CC –Soda Ash Manufacturing	5	3.1	0%	\$0.0	0%	\$0.1	0%
Subpart EE –Titanium Dioxide Production	8	3.7	0%	\$0.0	0%	\$0.1	0%
Subpart GG –Zinc Production	5	0.8	0%	\$0.0	0%	\$0.1	0%
Subpart HH –Landfills	2,551	91.1	2%	\$1.3	3%	\$12.4	9%
Subpart JJ –Manure Management	107	4.5	0%	\$0.0	0%	\$0.3	0%
Subpart LL –Suppliers of Coal & Subpart MM –Suppliers of Petroleum Products	315	0.0	0%	\$0.0	0%	\$3.7	3%

Subpart	Number Covered of Entities	Downstream Emissions		First Year Capital Costs		First Year Total Annualized Costs ²	
		(Million of MtCO ₂ e)	Share	(Million)	Share	(Million)	Share
Subpart NN –Suppliers of Natural Gas and Natural Gas Liquids	1,502	0.0	0%	\$0.0	0%	\$6.8	5%
Subpart OO –Suppliers of Industrial Greenhouse Gases	167	643.4	17%	\$0.0	0%	\$0.5	0%
Subpart PP –Suppliers of Carbon Dioxide (CO ₂)	13	0.0	0%	\$0.0	0%	\$0.0	0%
Subpart QQ – Motor Vehicle and Engine Manufacturers	317	NA	NA	\$0.0	0%	\$8.6	7%
Coverage Determination Costs for Non-Reporters	NA	NA	NA	NA	NA	\$17.2	13%
Private Sector, Total	10,152	3,827	100%	\$39.6	100%	\$115.0	87%
Public Sector, Total	NA	NA	NA	NA	NA	\$17.0	13%
Total	10,152	3,827	100%	\$39.6	100%	\$132.0	100%

¹ Emissions from upstream facilities are excluded from these estimates to avoid double counting.

² Total costs include labor and capital costs incurred in the first year. Capital Costs are annualized using appropriate equipment lifetime and interest rate (see additional details in section 4 of the RIA for the final rule).

Table VII-2. Threshold Cost-Effectiveness Analysis (2006\$)

Threshold (tons CO ₂ e)	Facilities Required to Report	Total Costs (million \$2006)	Downstream Emissions Reported (MtCO ₂ e/year)	Percentage of Total Downstream Emissions Reported	Average Reporting Cost (\$2006/ton)	Incremental Cost (\$/metric ton)
100,000	6,269	\$89	3,738	53%	\$0.02	--
25,000	10,152	\$132	3,827	54%	\$0.03	\$0.49
10,000	16,718	\$160	3,861	55%	\$0.04	\$0.83
1,000	54,229	\$398	3,926	56%	\$0.10	\$3.67

* Cost per metric ton relative to the selected option.

Note: Does not include emissions for Motor Vehicle and Engine Manufacturers (Subpart QQ).

Table VII-3 of this preamble presents costs broken out by upstream and downstream sources. Upstream sources include the fuel suppliers and industrial GHG suppliers. Downstream suppliers include combustion sources, industrial processes, and biological processes. Most upstream facilities (e.g., refineries) are also direct emitters of GHGs and are included in the downstream side of the table.

As shown in Table VII-3 of this preamble, over 99 percent of industrial processes emissions are covered at the 25,000 metric tons CO₂e threshold for a cost of approximately \$36 million. However, it should be noted that due to data limitations the coverage estimates for upstream and downstream source categories are approximations.

Table VII-3. Upstream versus Downstream Costs

Upstream ¹				Downstream ^{2,3,4}			
Source Category	#Reporters	Emissions Coverage (%) ¹⁰	First Year Cost (millions)	Source Category	#Reporters ²	Emissions Coverage ^{3,7,10} (%)	First Year Cost ³ (millions)
Coal Supply	0	0%	\$0.00	Coal ^{5,6} Combustion	N/A	99.0%	N/A
Petroleum Supply	315	100%	\$3.66	Petroleum ⁵ Combustion ⁹	N/A	20.0%	N/A
Natural Gas Supply	1,502	68%	\$6.76	Natural Gas ⁵ Combustion	N/A	23.0%	N/A
				Sub Total Combustion	4,108	N/A	\$29.04
Industrial Gas Supply	167	100%	\$0.52	Industrial Gas Consumption	17	14%	\$0.24
				Industrial Processes	1,068	99.6%	\$36.2
				Fugitive Emissions (coal, oil and gas)	0	0%	\$0.00
				Biological Processes	2,658	58%	\$12.77
				Vehicle ⁸ and Engine Manufacturers	317	80%	\$8.61

Notes

- ¹ Most upstream facilities (e.g., refineries) are also direct emitters of greenhouse gases, and are included in the downstream side of the table.
- ² Estimating the total number of downstream reporters by summing the rows will result in double-counting because some facilities are included in more than one row due to multiple types of emissions (e.g., facilities that burn fossil fuel and have process/fugitive/biological emissions will be included in each downstream category).
- ³ The coverage and costs for downstream reporters apply to the specific source category, i.e., the fixed costs are not "double-counted" in both stationary combustion and industrial processes for the same facility.
- ⁴ The thresholds used to determine covered facilities are additive, i.e., all of the source categories located at a facility (e.g., stationary combustion and process emissions) are added together to determine whether a facility meets the threshold (e.g., 25,000 metric tons of CO₂e/yr).
- ⁵ Estimates for the number of reporters and total cost for downstream stationary combustion do not distinguish between fuels. National level data on the number of reporters could be estimated. However, estimating the number of reporters by fuel was not possible because a single facility can

- combust multiple fuels. For these reasons there is not a reliable estimate of the total of the emissions coverage from the downstream stationary combustion.
- ⁶ Approximately 90 percent of downstream coal combustion emissions are already reported to EPA through requirements for electricity generating units under the ARP.
- ⁷ Due to data limitations, the coverage for downstream sources for fuel and industrial gas consumption in this table does not take into account thresholds. Assuming full emissions coverage for each source slightly overstates the actual coverage that will result from this rule. To estimate total emissions coverage downstream, by fuel, we added total emissions resulting from the respective fuel combusted in the industrial and electricity generation sectors and divided that by total national GHG emissions from the combustion of that fuel.
- ⁸ The percent of coverage here is percentage of total heavy-duty highway vehicles and engines, motorcycles, and nonroad engine sales covered by manufacturer reporting in this proposal rather than emissions coverage. The "threshold" for mobile sources is based on manufacturer size rather than total emissions. In this rule, all heavy-duty highway and nonroad vehicle and engine manufacturers, except those that meet EPA's definition of "small business" or "small volume manufacturers", would report emissions rates of CO₂, CH₄, and N₂O from the products they supply. This source category is neither upstream nor downstream, but is included in the downstream column for illustrative purposes.
- ⁹ The emissions coverage for petroleum combustion includes combustion of fuel by transportation sources as well as other uses of petroleum (e.g., home heating oil). It cannot be broken out by transportation versus other uses as there are difficulties associated with tracking which products from petroleum refiners are used for transportation fuel and which were not. We know that although refiners make these designations for the products leaving their gate, the actual end use can and does change in the market. For example, designated transportation fuel can always be used as home heating oil.
- ¹⁰ Emissions coverage from the combustion of fossil fuels upstream represents CO₂ emissions only. It is not possible to estimate nitrous oxide and methane emissions without knowing where and how the fuel is combusted. In the case of downstream emissions from stationary combustion of fossil fuels, nitrous oxide and methane emissions are included in the emissions coverage estimate. They represent approximately one percent of the total emissions.

2. Summary of Comments and Responses

Comment: EPA received comments on source specific cost data reflected in the engineering cost analysis presented in section 4 of the RIA for the proposed rule (EPA-HQ-OAR-2008-0318-002). Some commenters asked EPA to not overly burden entities that may be required to report and to balance reporting costs with the need for accurate reporting of GHG emissions.

Additional comments received questioned EPA's estimate of the costs associated with third party verification, as well as the estimated burden to the Federal government for self certification with EPA verification.

Response: EPA considered all relevant comments regarding source specific cost data developed in the engineering cost analysis and used in the RIA for the proposed rule. In some cases, we revised our cost estimates, and in some cases we revised monitoring and reporting requirements in ways which reduced burden. Please see source specific comments and responses in Section III of this preamble and the relevant volume of "Mandatory Greenhouse Gas Reporting Rule: EPA's Response to Public Comments".

EPA believes the selected option for the mandatory GHG reporting rule strikes a balance between impacts on small entities, consistency with other programs, costs incurred by the reporting entities, and emissions coverage. Section 5 of the RIA for the final rule provides cost comparisons for each alternative evaluated.

In evaluating the costs of self certification with EPA verification and third party verification, EPA conducted a thorough review of relevant cost information available. EPA also considered cost data submitted in public comments

on the proposed rule. EPA's review of verification costs included examining estimated Agency costs for other EPA based reporting programs, as well as a study conducted by the California Air Resources Board (CARB). The results of EPA's review of verification costs can be found in the Memo on Verification Costs in the docket. The final rule retains self-certification with EPA verification. EPA's estimated cost for verification activities is \$7 million per year. Additional comments and responses on third party verification can be found in Section II.N of this preamble. Section 5.1.6 of the RIA for the final rule contains the full economic analysis of verification costs and options.

C. What are the economic impacts of the rule?

1. Summary of Economic Impacts

EPA prepared an economic impact analysis to evaluate the impacts of the rule on affected industries and economic sectors. In evaluating the various reporting options considered, EPA conducted a cost-effectiveness analysis, comparing the cost per metric ton of GHG emissions across reporting options. EPA used this information to identify the preferred options described in today's rule.

To estimate the economic impacts of the rule, EPA first conducted a screening assessment, comparing the estimated total annualized compliance costs by industry,

where industry is defined in terms of North American Industry Classification System (NAICS) code, with industry average revenues. Overall national costs of the rule are significant because there are a large number of affected entities, but per-entity costs are low. Average cost-to-sales ratios for establishments in affected NAICS codes are uniformly less than 0.8 percent.

These low average cost-to-sales ratios indicate that the rule is unlikely to result in significant changes in firms' production decisions or other behavioral changes, and thus unlikely to result in significant changes in prices or quantities in affected markets. Thus, EPA followed its *Guidelines for Preparing Economic Analyses* (EPA, 2002, p.124-125) and used the engineering cost estimates to measure the social cost of the rule, rather than modeling market responses and using the resulting measures of social cost. Table VII-4 of this preamble summarizes cost-to-sales ratios for affected industries.

Table VII-4. Estimated Cost-To-Sales Ratios for Affected Entities

NAICS	NAICS Description	Average Cost Per Entity (\$1,000/entity)	Average Entity Cost-to-Sales Ratio¹
211	Oil and Gas Extraction	\$2	<0.1%
221	SF6 from Electrical Systems	\$5	<0.1%
322	Pulp & Paper Manufacturing	\$20	<0.1%

NAICS	NAICS Description	Average Cost Per Entity (\$1,000/entity)	Average Entity Cost-to-Sales Ratio ¹
324	Petroleum and Coal Products	\$21	<0.1%
325	Chemical Manufacturing	\$14	<0.1%
327	Cement & Other Mineral Production	\$50	0.8%
331	Primary Metal Manufacturing	\$26	<0.1%
486	Oil & Natural Gas Transportation	\$4	<0.1%
562	Waste Management and Remediation Services	\$5	0.2%
325199	Adipic Acid	\$24	<0.1%
325311	Ammonia	\$17	<0.1%
327310	Cement	\$63	0.2%
331112	Ferrous Alloys	\$9	<0.1%
3272	Glass	\$8	<0.1%
325120	Hydrogen Production	\$3	<0.1%
331112	Iron and Steel	\$30	<0.1%
3314	Lead Production	\$10	<0.1%
327410	Lime Manufacturing	\$60	0.4%
325311	Nitric Acid	\$20	<0.1%
324110	Petrochemical	\$27	<0.1%
325312	Phosphoric Acid	\$60	<0.1%
322110	Pulp and Paper	\$20	<0.1%
324110	Refineries	\$41	<0.1%
327910	Silicon Carbide	\$10	<0.1%
3251	Soda Ash Manufacturing	\$16	<0.1%
325188	Titanium Dioxide	\$10	<0.1%
3314	Zinc Production	\$13	<0.1%

¹This ratio reflects first year costs. Subsequent year costs will be slightly lower because they do not include initial start-up activities.

2. Summary of Comments and Responses

Comment: EPA received a number of comments on the overall economic impacts of the proposed rule. Some commenters stated that the economic impacts are understated as costs will not be passed on to consumers from reporters. Other commenters stated that large increases in operating

costs resulting from mandatory reporting of GHGs would lead facilities to close or move offshore.

Response: As described previously, EPA conducted a thorough analysis of available information and reviewed comments submitted on this issue, and we have determined that this analysis provides a reasonable characterization of costs for facilities in each subpart and that the documentation provides adequate explanation of how the costs were estimated. Our economic impact analysis has been conducted without taking into account the fact that some share of costs may be passed on to customers of each affected sector. Instead, facilities' annualized costs were compared to sales for entities in the sector, overall and for small entities. Even when all costs are absorbed by the facility, the costs represent less than one percent of sales and thus are not expected to result in significant hardship for affected firms.

D. What are the impacts of the rule on small businesses?

1. Summary of Impacts on Small Businesses

As required by the RFA and Small Business Regulatory Enforcement and Fairness ACT (SBREFA), EPA assessed the potential impacts of the rule on small entities (small businesses, governments, and non-profit organizations).

(See Section VIII.C of this preamble for definitions of small entities.)

EPA has determined the selected thresholds maximize the rule coverage with 81 to 86 percent of U.S. GHG emissions reported by approximately 10,152 reporters, while keeping reporting burden to a minimum and excluding small emitters. Furthermore, many industry stakeholders that EPA met with expressed support for a 25,000 metric ton CO₂e threshold because it sufficiently captures the majority of GHG emissions in the U.S., while excluding smaller facilities and sources. For small facilities that are covered by the rule, EPA has included simplified emission estimation methods in the rule where feasible (e.g., stationary combustion equipment under a certain rating can use a simplified calculation approach as opposed to more rigorous direct monitoring) to keep the burden of reporting as low as possible. We received many comments related to monitoring and reporting requirements in specific source categories, and made many changes in response to reduce burden on reporters. For information on these issues, refer to the discussion of each source category in this preamble and the relevant volume of "Mandatory Greenhouse Gas Reporting Rule: EPA's Response to Public Comments." For further detail on the rationale for excluding small

entities through threshold selection please see the Thresholds TSD (EPA-HQ-OAR-2008-0508-046) and Section III.C.3 of this preamble.

EPA conducted a screening assessment comparing compliance costs for affected industry sectors to industry-specific receipts data for establishments owned by small businesses. This ratio constitutes a "sales" test that computes the annualized compliance costs of this rule as a percentage of sales and determines whether the ratio exceeds some level (e.g., one percent or three percent).³² The cost-to-sales ratios were constructed at the establishment level (average reporting program costs per establishment/average establishment receipts) for several business size ranges. This allowed EPA to account for receipt differences between establishments owned by large and small businesses and differences in small business definitions across affected industries. The results of the screening assessment are shown in Table VII-5 of this preamble.

³² EPA's RFA guidance for rule writers suggests the "sales" test continues to be the preferred quantitative metric for economic impact screening analysis.

Table VII-5. Estimated Cost-To-Sales Ratios by Industry and Enterprise Size^a

Industry	NAICS	NAICS Description	SBA Size Standard (effective March 11, 2008)	Average Cost Per Entity (\$1,000/entity)	All Enterprises	Owned by Enterprises with:					
						<20 Employees ^f	20 to 99 Employees	100 to 499 Employees	500 to 749 Employees	750 to 999 Employees	1,000 to 1,499 Employees
Oil and Gas Extraction	211	Oil & gas extraction	500	\$2	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
SF6 from Electrical Systems	221	Utilities	b	\$5	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Pulp & Paper Manufacturing	322	Paper mfg	500 to 750	\$20	0.1%	1.2%	0.2%	0.1%	0.0%	0.0%	0.0%
Petroleum and Coal Products	324	Petroleum & coal products mfg	c	\$21	0.0%	0.6%	0.1%	0.1%	0.0%	0.2%	0.0%
Chemical Manufacturing	325	Chemical mfg	500 to 1,000	\$14	0.0%	0.7%	0.1%	0.0%	0.0%	0.0%	0.0%
Cement & Other Mineral Production	327	Nonmetallic mineral product mfg	500 to 1,000	\$50	0.8%	4.8%	0.9%	0.5%	0.4%	0.5%	0.4%
Primary Metal Manufacturing	331	Primary metal mfg	500 to 1,000	\$26	0.1%	2.1%	0.3%	0.1%	0.1%	0.0%	0.0%
Oil & Natural Gas Transportation	486	Pipeline transportation	d	\$4	0.0%	0.0%	0.2%	0.1%	NA	NA	NA
Waste Management and Remediation Services	562	Waste management & remediation services	e	\$5	0.2%	0.7%	0.1%	0.1%	0.0%	0.0%	0.0%
Adipic Acid	325199	All other basic organic chemical mfg	1,000	\$24	0.0%	0.9%	0.3%	0.1%	NA	0.0%	NA
Ammonia	325311	Nitrogenous fertilizer mfg	1,000	\$17	0.1%	0.9%	0.5%	NA	NA	NA	NA
Cement	327310	Cement mfg	750	\$63	0.2%	2.0%	1.5%	0.3%	NA	NA	0.1%
Ferroalloys	331112	Electrometallurgical ferroalloy product mfg	750	\$9	0.0%	NA	NA	NA	NA	NA	NA
Glass	3272	Glass & glass product mfg	500 to 1,000	\$8	0.1%	1.4%	0.2%	0.0%	0.0%	0.1%	0.0%
Hydrogen Production	325120	Industrial gas mfg	1,000	\$3	0.0%	0.6%	0.0%	0.1%	NA	NA	NA
Iron and Steel	331112	Electrometallurgical ferroalloy product mfg	750	\$30	0.1%	NA	NA	NA	NA	NA	NA
Lead Production	3314	Nonferrous metal (except aluminum) production & processing	750 to 1,000	\$10	0.0%	0.6%	0.1%	0.0%	NA	NA	0.0%
Lime Manufacturing	327410	Lime mfg	500	\$60	0.4%	16.5%	1.2%	NA	NA	NA	NA
Nitric Acid	325311	Nitrogenous fertilizer mfg	1,000	\$20	0.1%	1.0%	0.6%	NA	NA	NA	NA
Petrochemical	324110	Petroleum refineries	c	\$27	0.0%	0.4%	0.0%	0.0%	0.0%	NA	NA
Phosphoric Acid	325312	Phosphatic fertilizer mfg	500	\$60	0.1%	10.1%	NA	NA	NA	NA	NA
Pulp and Paper	322110	Pulp mills	750	\$20	0.0%	1.4%	NA	NA	NA	NA	NA
Refineries	324110	Petroleum refineries	c	\$41	0.0%	0.6%	0.0%	0.0%	0.0%	NA	NA
Silicon Carbide	327910	Abrasive product mfg	500	\$10	0.1%	0.8%	0.2%	0.1%	NA	NA	NA
Soda Ash Manufacturing	3251	Basic chemical mfg	500 to 1,000	\$16	0.0%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%
Titanium Dioxide	325188	All other basic inorganic chemical mfg	1,000	\$10	0.0%	0.7%	0.4%	0.1%	NA	NA	NA

Industry	NAICS	NAICS Description	SBA Size Standard (effective March 11, 2008)	Average Cost Per Entity (\$1,000/entity)	All Enterprises	Owned by Enterprises with:					
						<20 Employees ^f	20 to 99 Employees	100 to 499 Employees	500 to 749 Employees	750 to 999 Employees	1,000 to 1,499 Employees
Zinc Production	3314	Nonferrous metal (except aluminum) production & processing	750 to 1,000	\$13	0.1%	0.9%	0.1%	0.0%	NA	NA	0.0%

^a The Census Bureau defines an enterprise as a business organization consisting of one or more domestic establishments that were specified under common ownership or control. The enterprise and the establishment are the same for single-establishment firms. Each multi-establishment company forms one enterprise—the enterprise employment and annual payroll are summed from the associated establishments. Enterprise size designations are determined by the summed employment of all associated establishments.

Since the SBA's business size definitions (<http://www.sba.gov/size>) apply to an establishment's ultimate parent company, we assume in this analysis that the enterprise definition above is consistent with the concept of ultimate parent company that is typically used for SBREFA screening analyses.

^b NAICS codes 221111, 221112, 221113, 221119, 221121, 221122 - A firm is small if, including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale and its total electric output for the preceding fiscal year did not exceed four million MW hours.

^c 500 to 1,500. For NAICS code 324110 - For purposes of Government procurement, the petroleum refiner must be a concern that has no more than 1,500 employees nor more than 125,000 barrels per calendar day total Operable Atmospheric Crude Oil Distillation capacity. Capacity includes owned or leased facilities as well as facilities under a processing agreement or an arrangement such as an exchange agreement or a throughput. The total product to be delivered under the contract must be at least 90 percent refined by the successful bidder from either crude oil or bona fide feedstocks.

^d NAICS codes 486110 = 1,500 employees; NAICS 486210=\$6.5 million annual receipts; NAICS 486910 = 1,500 employees; and NAICS 486990 =\$11.5 million annual receipts.

^e Ranges from \$6.5 to \$13.0 million annual receipts; Environmental Remediation services has a 500 employee definition and the following criteria. NAICS 562910 - Environmental Remediation Services:

1) For SBA assistance as a small business concern in the industry of Environmental Remediation Services, other than for Government procurement, a concern must be engaged primarily in furnishing a range of services for the remediation of a contaminated environment to an acceptable condition including, but not limited to, preliminary assessment, site inspection, testing, remedial investigation, feasibility studies, remedial design, containment, remedial action, removal of contaminated materials, storage of contaminated materials and security and site closeouts. If one of such activities accounts for 50 percent or more of a concern's total revenues, employees, or other related factors, the concern's primary industry is that of the particular industry and not the Environmental Remediation Services Industry.

2) For purposes of classifying a Government procurement as Environmental Remediation Services, the general purpose of the procurement must be to restore a contaminated environment and also the procurement must be composed of activities in three or more separate industries with separate NAICS codes or, in some instances (e.g., engineering), smaller sub-components of NAICS codes with separate, distinct size standards. These activities may include, but are not limited to, separate activities in industries such as: Heavy Construction; Special Trade Construction; Engineering Services; Architectural Services; Management Services; Refuse Systems; Sanitary

Services, Not Elsewhere Classified; Local Trucking Without Storage; Testing Laboratories; and Commercial, Physical and Biological Research. If any activity in the procurement can be identified with a separate NAICS code, or component of a code with a separate distinct size standard, and that industry accounts for 50 percent or more of the value of the entire procurement, then the proper size standard is the one for that particular industry, and not the Environmental Remediation Service size standard.

^f Given the Agency's selected thresholds, enterprises with fewer than 20 employees are likely to be excluded from the reporting program.

NA: Not available. SUSB did not report the data necessary to calculate this ratio.

EPA was not able to calculate a cost-to-sales ratio for manure management (NAICS 112) as Statistics of U.S. Businesses ([SUSB]SBA, 2008a) data do not provide establishment information for agricultural NAICS codes (e.g., NAICS 112 which covers manure management). EPA estimates that the total first year reporting costs for the entire manure management industry to be \$0.3 million with an average cost per ton of CO₂e reported of \$0.07.

As shown, the cost-to-sales ratios are less than one percent for establishments owned by small businesses that EPA considers most likely to be covered by the reporting program (e.g. establishments owned by businesses with 20 or more employees).

EPA acknowledges that several enterprise categories have ratios that exceed this threshold (e.g., enterprise with one to 20 employees). EPA took a conservative approach with the model entity analysis. Although the appropriate SBA size definition should be applied at the parent company (enterprise) level, data limitations allowed

us only to compute and compare ratios for a model establishment within several enterprise size ranges. To assess the likelihood that these small businesses will be covered by the rule, we performed several case studies for manufacturing industries where the cost-to-receipt ratio exceeded one percent. For each industry, we used and applied emission data from a recent study examining emission thresholds³³. This study provides industry-average CO₂ emission rates (e.g., tons per employee) for these manufacturing industries.

The case studies showed two industries (cement and lime manufacturing) where emission rates suggest small businesses of this employment size could potentially be covered by the rule. As a result, EPA examined corporate structures and ultimate parent companies were identified using industry surveys and the latest private databases such as Dun & Bradstreet. The results of this analysis show cost to sales ratios below one percent.

For the other enterprise categories identified with ratios between one percent and three percent EPA examined industry specific bottom up databases and previous industry

³³ Nicholas Institute for Environmental Policy Solutions, Duke University. 2008. Size Thresholds for Greenhouse Gas Regulation: Who Would be Affected by a 10,000-ton CO₂ Emissions Rule? Available at: <http://www.nicholas.duke.edu/institute/10Kton.pdf>

specific studies to ensure that no entities with less than 20 employees are captured under the rule.

Although this rule will not have a significant economic impact on a substantial number of small entities, the Agency nonetheless tried to reduce the impact of this rule on small entities, including seeking input from a wide range of private- and public-sector stakeholders. When developing the rule, the Agency took special steps to ensure that the burdens imposed on small entities were minimal. The Agency conducted several meetings with industry trade associations to discuss regulatory options and the corresponding burden on industry, such as recordkeeping and reporting. The Agency investigated alternative thresholds and analyzed the marginal costs associated with requiring smaller entities with lower emissions to report. The Agency also recommended a hybrid method for reporting, which provides flexibility to entities and helps minimize reporting costs.

Additional analysis for a model small government also showed that the annualized reporting program costs were less than one percent of revenue. These impacts are likely representative of ratios in industries where data limitations do not allow EPA to compute sales tests (e.g., general stationary combustion and manure management).

Potential impacts of the rule on small governments were assessed separately from impacts on Federal Agencies. Small governments and small non-profit organizations may be affected if they own affected stationary combustion sources, landfills, or natural gas suppliers. However, the estimated costs under the rule are estimated to be small enough that no small government or small non-profit is estimated to incur significant impacts. For example, from the 2002 Census (in \$2006), revenues for small governments (counties and municipalities) with populations fewer than 10,000 are \$3 million, and revenues for local governments with populations less than 50,000 is \$7 million. As an upper bound estimate, summing typical per-respondent costs of combustion plus landfills plus natural gas suppliers yields a cost of approximately \$18,000 per local government. Thus, for the smallest group of local governments (<10,000 people), cost-to-revenue ratio is 0.7 percent. For the larger group of governments less than 50,000, the cost-to-revenue ratio is 0.2 percent.

2. Summary of Comments and Responses

Comment: Comments received on small business impacts focused on the economic burden to small businesses for compliance with mandatory GHG reporting. One commenter noted that lowering the reporting threshold below the

proposed 25,000 metric ton CO₂e level would disproportionately affect small businesses. Another commenter stated that small businesses are not well equipped to handle detailed requirements for reporting and that the proposed rule would impose a large burden for monitoring, recordkeeping, and reporting activities.

Additional comments received requested that EPA establish a SBREFA process to investigate the impacts that the proposed rule would have on small businesses.

Response: As summarized above, EPA investigated alternative thresholds and analyzed the marginal costs associated with requiring smaller entities with lower emissions to report. EPA recognized the additional burden placed on small entities at lower thresholds, and had retained the hybrid method for reporting that includes a 25,000 metric ton CO₂e level threshold. Under this threshold, EPA has assessed the economic impact of the final rule on small entities and concluded that this action will not have a significant economic impact on a substantial number of small entities.

For this reason, EPA did not establish a SBREFA panel process for the rulemaking. The summary of the factual basis for the certification is provided in the preamble for

the rule. Complete documentation of the analysis can be found in Section 5.2 of the RIA for the final rule.

E. What are the benefits of the rule for society?

1. Summary of Method Used to Estimate Compliance Costs

EPA examined the potential benefits of the GHG reporting rule. The benefits of a reporting system are based on their relevance to policy making, transparency issues, and market efficiency. Benefits are very difficult to quantify and monetize. Instead of a quantitative analysis of the benefits, EPA conducted a systematic literature review of existing studies including government, consulting, and scholarly reports.

A mandatory reporting system will benefit the public by increased transparency of facility emissions data. Transparent, public data on emissions allows for accountability of polluters to the public stakeholders who bear the cost of the pollution. Citizens, community groups, and labor unions have made use of data from Pollutant Release and Transfer Registers to negotiate directly with polluters to lower emissions, circumventing greater government regulation. Publicly available emissions data also will allow individuals to alter their consumption habits based on the GHG emissions of producers.

The greatest benefit of mandatory reporting of industry GHG emissions to government will be realized in developing future GHG policies. For example, in the EU's Emissions Trading System, a lack of accurate monitoring at the facility level before establishing CO₂ allowance permits resulted in allocation of permits for emissions levels an average of 15 percent above actual levels in every country except the United Kingdom.

Benefits to industry of GHG emissions monitoring include the value of having independent, verifiable data to present to the public to demonstrate appropriate environmental stewardship, and a better understanding of their emission levels and sources to identify opportunities to reduce emissions. Such monitoring allows for inclusion of standardized GHG data into environmental management systems, providing the necessary information to achieve and disseminate their environmental achievements.

Standardization will also be a benefit to industry, once facilities invest in the institutional knowledge and systems to report emissions, the cost of monitoring should fall and the accuracy of the accounting should improve. A standardized reporting program will also allow for facilities to benchmark themselves against similar

facilities to understand better their relative standing within their industry.

2. Summary of Comments and Responses

Comment: Comments received on the benefits of the mandatory reporting program focused on the potential future uses of the collected data. Additional comments on the benefits of the program were concerned that the benefits of the rule are not quantified.

Response: The data collected under this rule will provide comprehensive and accurate data to inform future climate change policies. Potential future CAA and other climate policies include research and development initiatives, economic incentives, new or expanded voluntary programs, adaptation strategies, emission standards, a carbon tax, or a cap-and-trade program. Because EPA does not know at this time the specific policies that may be adopted, the data reported through this rule should be of sufficient quality to support a range of approaches.

Section VI of the RIA for the final rule summarizes the anticipated benefits of the rule, which include providing the government with sound data on which to base future policies and providing industry and the public independently verified information documenting firms' environmental performance. While EPA has not quantified

the benefits of the mandatory reporting rule, EPA believes that they are substantial and outweigh the estimated costs.

VIII. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review

Under section 3(f)(1) of EO 12866 (58 FR 51735, October 4, 1993), this action is an "economically significant regulatory action" because it is likely to have an annual effect on the economy of \$100 million or more. Accordingly, EPA submitted this action to the OMB for review under EO 12866 and any changes made in response to OMB recommendations have been documented in the docket for this action.

In addition, EPA prepared an analysis of the potential costs and benefits associated with this action. A copy of the analysis is available in Docket No. EPA-HQ-OAR-2008-0508, the RIA for the final rule, and is briefly summarized in Section VII of this preamble.

B. Paperwork Reduction Act

The information collection requirements in this rule have been submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. The information collection requirements are not enforceable until OMB approves them.

The ICR document prepared by EPA has been assigned EPA ICR number 2300.03.

EPA plans to collect complete and accurate economy-wide data on facility-level GHG emissions. Accurate and timely information on GHG emissions is essential for informing future climate change policy decisions. Through data collected under this rule, EPA will gain a better understanding of the relative emissions of specific industries, and the distribution of emissions from individual facilities within those industries. The facility-specific data will also improve our understanding of the factors that influence GHG emission rates and actions that facilities are already taking to reduce emissions. Additionally, EPA will be able to track the trend of emissions from industries and facilities within industries over time, particularly in response to policies and potential regulations. The data collected by this rule will improve EPA's ability to formulate climate change policy options and to assess which industries would be affected, and how these industries would be affected by the options.

This information collection is mandatory and will be carried out under CAA sections 114 and 208. Information identified and marked as CBI will not be disclosed except

in accordance with procedures set forth in 40 CFR part 2. However, emissions data collected under CAA sections 114 and 208 cannot generally be claimed as CBI and will be made public³⁴.

The projected cost and hour burden for non-Federal respondents is \$86.3 million and 1.21 million hours per year. The estimated average burden per response is two hours; the frequency of response is annual for all respondents that must comply with the rule's reporting requirements, except for electricity generating units that are already required to report quarterly under 40 CFR part 75 (EPA Acid Rain Program); and the estimated average number of likely respondents per year is 16,725³⁵. The cost burden to respondents resulting from the collection of information includes the total capital cost annualized over the equipment's expected useful life (averaging \$9.1 million), a total operation and maintenance component

³⁴ Although CBI determinations are usually made on a case-by-case basis, EPA has issued guidance in an earlier Federal Register notice on what constitutes emissions data that cannot be considered CBI (956 FR 7042 - 7043, February 21, 1991). As discussed in Section II.R of this preamble, EPA will be initiating a separate notice and comment process to make CBI determinations for the data collected under this rulemaking.

³⁵ EPA estimates that 30,000 facilities are potentially affected by the rule. Of these, EPA estimates that 10,152 facilities across various sectors will be over their sector-specific reporting threshold and thus required to report; the remaining 19,848 will determine during the first year that they are beneath the threshold and do not need to report. The average number of respondents is thus $(30,000+10,152+10,152)/3 = 16,768$; excluding 43 Federal facilities, the number of private respondents is 16,725.

(averaging \$11.0 million per year), and a labor cost component (averaging \$66.1 million per year). Burden is defined at 5 CFR 1320.3(b). These cost numbers differ from those shown elsewhere in the RIA for the final rule because the ICR costs represent the average cost over the first three years of the rule, but costs are reported elsewhere in the RIA for the final rule for the first year of the rule and for subsequent years of the rule. In addition, the ICR focuses on respondent burden, while the RIA for the final rule includes EPA Agency costs.

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 in 40 CFR are listed in 40 CFR part 9. When this ICR is approved by OMB, the Agency will publish a technical amendment to 40 CFR part 9 in the Federal Register to display the OMB control number for the approved information collection requirements contained in this final rule.

C. Regulatory Flexibility Act (RFA)

The RFA generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless

the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

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

After considering the economic impacts of today's final rule on small entities, I therefore certify that this final rule will not have a significant economic impact on a substantial number of small entities.

The small entities directly regulated by this final rule include small businesses across all sectors encompassed by the rule, small governmental jurisdictions and small non-profits. We have determined that some small businesses will be affected because their production processes emit GHGs that must be reported, because they have stationary combustion units on site that emit GHGs

that must be reported, or because they have fuel supplier operations for which supply quantities and GHG data must be reported. Small governments and small non-profits are generally affected because they have regulated landfills or stationary combustion units on site, or because they own an LDC.

For affected small entities, EPA conducted a screening assessment comparing compliance costs for affected industry sectors to industry-specific data on revenues for small businesses. This ratio constitutes a "sales" test that computes the annualized compliance costs of this final rule as a percentage of sales and determines whether the ratio exceeds some level (e.g., one percent or three percent). The cost-to-sales ratios were constructed at the establishment level (average compliance cost for the establishment/ average establishment revenues). As shown in Table VII-5 of this preamble, the cost-to-sales ratios are less than one percent for establishments owned by small businesses that EPA considers most likely to be covered by the reporting program, those with more than 20 employees³⁶. For the few sectors where the preliminary screening showed a cost-to-sales ratio exceeding one percent, EPA's

³⁶ U.S. Small Business Administration (SBA). 2008. Firm Size Data from the Statistics of U.S. Businesses: U.S. Detail Employment Sizes: 2002. <http://www.census.gov/csd/susb/download_susb02.htm>.

examination of firm-specific sales information showed that no affected entity was likely to incur costs exceeding one percent of sales.

The screening analysis thus indicates that the final rule will not have a significant economic impact on a substantial number of small entities. See Table VII-5 of this preamble for sector-specific results. The screening assessment for small governments compared the sum of average costs of compliance for combustion, local distribution companies, and landfills to average revenues for small governments. Even for a small government owning all three source types, the costs constitute less than one percent of average revenues for the smallest category of governments (those with fewer than 10,000 people).

Although this final rule will not have a significant economic impact on a substantial number of small entities, EPA nonetheless took several steps to reduce the impact of this rule on small entities. For example, EPA determined appropriate thresholds that reduce the number of small businesses reporting. In addition, EPA is not requiring facilities to install CEMS if they do not already have them. Facilities without CEMS can calculate emissions using readily available data or data that are less expensive to collect such as process data or material

consumption data. For some source categories, EPA developed tiered methods that are simpler and less burdensome. Also, EPA is requiring annual instead of more frequent reporting.

Through comprehensive outreach activities prior to proposal of the rule, EPA held approximately 100 meetings and/or conference calls with representatives of the primary audience groups, including numerous trade associations and industries that include small business members. EPA's outreach activities prior to proposal of the rule are documented in the memorandum, "Summary of EPA Outreach Activities for Developing the Greenhouse Gas Reporting Rule," located in Docket No. EPA-HQ-OAR-2008-0508-055. After proposal, EPA posted a guide for small businesses on EPA's GHG reporting rule Web site, along with a general fact sheet for the rule, information sheets for every source category, and an FAQ document. EPA also operated a hotline to answer questions about the proposed rule. We continued to meet with stakeholders and entered documentation of all meetings into the docket. We considered public comments, including comments from small businesses and organizations that include small business members, in developing the final rule.

During rule implementation, EPA will maintain an "open door" policy for stakeholders to ask questions about the rule or provide suggestions to EPA about the types of compliance assistance that would be useful to small businesses. EPA intends to develop a range of compliance assistance tools and materials and conduct extensive outreach for the final rule.

D. Unfunded Mandates Reform Act (UMRA)

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), 2 U.S.C. 1531-1538, requires Federal agencies, unless otherwise prohibited by law, to assess the effects of their regulatory actions on State, local, and Tribal governments and the private sector.

EPA has developed this regulation under authority of CAA sections 114 and 208. The required activities under this Federal mandate include monitoring, recordkeeping, and reporting of GHG emissions from multiple source categories (e.g., combustion, process, and biogenic). This rule contains a Federal mandate that may result in expenditures of \$100 million for the private sector in any one year. As described below, we have determined that the expenditures for State, local, and Tribal governments, in the aggregate, will be approximately \$12.1 million per year, based on average costs over the first three years of the rule,

including approximately \$2 million during the first year of the rule for governments to make a reporting determination and subsequently determine that their emissions are below the threshold and thus, they are not required to report their emissions. Accordingly, EPA has prepared under section 202 of the UMRA a written statement which is summarized below.

Consistent with the intergovernmental consultation provisions of section 204 of the UMRA, EPA initiated an outreach effort with the governmental entities affected by this rule including State, local, and Tribal officials. EPA maintained an "open door" policy for stakeholders to provide input on key issues and to help inform EPA's understanding of issues, including impacts to State, local and Tribal governments. The outreach audience included State environmental protection agencies, regional and Tribal organizations, and other State and local government organizations. EPA contacted several States and State and regional organizations already involved in GHG emissions reporting. EPA also conducted several conference calls with Tribal organizations during the proposal phase. For example, EPA staff provided information to tribes through conference calls with multiple Tribal working groups and organizations at EPA and through individual calls with two

Tribal board members of TRI. In addition, EPA held meetings and conference calls with groups such as TRI, National Association of Clean Air Agencies (NACAA), ECOS, and with State members of RGGI, the Midwestern GHG Reduction Accord, and WCI. See the "Summary of EPA Outreach Activities for Developing the Greenhouse Gas Reporting Rule," in Docket No. EPA-HQ-OAR-2008-0508-055 for a complete list of organizations and groups that EPA contacted.

At proposal of the rule, EPA posted a guide for State and local agencies on the Web site, along with other information sheets, to communicate key aspects of the proposed rule to these agencies. Several State and local agencies and three Tribal organizations or communities submitted written public comments, and EPA carefully considered these comments in developing the final rule. EPA also continued to meet with government agencies or organizations with State members such as California ARB, Connecticut DEP, New Jersey DEP, New Mexico ED, Washington DE, Massachusetts DEP, Illinois EPA, Iowa DNR, and TCR. These meetings are documented in the docket. EPA intends to continue to work closely with State, local, and Tribal agencies during rule implementation.

Consistent with section 205 of the UMRA, EPA has identified and considered a reasonable number of regulatory alternatives. EPA carefully examined regulatory alternatives, and selected the lowest cost/least burdensome alternative that EPA deems adequate to address Congressional concerns and to provide a consistent, comprehensive source of information about emissions of GHGs. EPA has considered the costs and benefits of the GHG reporting rule, and has concluded that the costs will fall mainly on the private sector (approximately \$77 million), with some costs incurred by State, local, and Tribal governments that must report their emissions (less than \$10.1 million) that own and operate stationary combustion units, landfills, or natural gas local distribution companies (LDCs). EPA estimates that an additional 2,034 facilities owned by State, local, or Tribal governments will incur approximately \$2.0 million in costs during the first year of the rule to make a reporting determination and subsequently determine that their emissions are below the threshold and thus, they are not required to report their emissions. Furthermore, we think it is unlikely that State, local, and Tribal governments would begin operating large industrial facilities, similar to those affected by this rulemaking operated by the private sector.

Initially, EPA estimates that costs of complying with the final rule will be widely dispersed throughout many sectors of the economy. Although EPA acknowledges that over time changes in the patterns of economic activity may mean that GHG generation and thus reporting costs will change, data are inadequate for projecting these changes. Thus, EPA assumes that costs averaged over the first three years of the program are typical of ongoing costs of compliance. EPA estimates that future compliance costs will total approximately \$104 million per year. EPA examined the distribution of these costs between private owners and State, local, and Tribal governments owning GHG emitters. In addition, EPA examined, within the private sector, the impacts on various industries. In general, estimated cost per entity represents less than 0.1 percent of company sales in affected industries. These costs are broadly distributed to a variety of economic sectors and represent approximately 0.001 percent of 2008 Gross Domestic Product; overall, EPA does not believe the final rule will have a significant macroeconomic impact on the national economy. Therefore, this rule is not subject to the requirements of section 203 of UMRA because it contains no regulatory requirements that might significantly or uniquely affect small governments.

EPA does not anticipate that substantial numbers of either public or private sector entities will incur significant economic impacts as a result of this final rule. EPA further expects that benefits of the final rule will include more and better information for EPA and the private sector about emissions of GHGs. This improved information will enhance EPA's ability to develop sound future climate policies, and may encourage GHG emitters to develop voluntary plans to reduce their emissions.

This regulation applies directly to facilities that supply fuel or chemicals that when used emit greenhouse gases, to motor vehicle manufacturers, and to facilities that directly emit greenhouse gases. It does not apply to governmental entities unless the government entity owns a facility that directly emits GHGs above threshold levels such as a landfill or large stationary combustion source, or LDC. In addition, this rule does not impose any implementation responsibilities on State, local, or Tribal governments and it is not expected to increase the cost of existing regulatory programs managed by those governments. Thus, the impact on governments affected by the rule is expected to be minimal.

E. Executive Order 13132: Federalism

EO 13132, entitled "Federalism" (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure "meaningful and timely input by State and local officials in the development of regulatory policies that have Federalism implications." "Policies that have Federalism implications" is defined in the EO to include regulations that have "substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government."

This final rule does not have Federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in EO 13132. However, for a more detailed discussion about how this final rule relates to existing State programs, please see Section II of the proposal preamble (74 FR 16457 to 16461, April 10, 2009) and Sections I.E. and II.C.2 of this preamble.

This regulation applies directly to facilities that supply fuel or chemicals that when used emit greenhouse gases, motor vehicle manufacturers, or facilities that directly emit greenhouse gases. It does not apply to

governmental entities unless the government entity owns a facility that directly emits GHGs above threshold levels such as a landfill, large stationary combustion source, or LDC, so relatively few government facilities would be affected. This regulation also does not limit the power of States or localities to collect GHG data and/or regulate GHG emissions. Thus, EO 13132 does not apply to this rule.

In the spirit of Executive Order 13132, and consistent with EPA policy to promote communications between EPA and State and local governments, EPA specifically solicited comments on the proposed rule from State and local officials. See Section VIII.D above, for discussion of outreach activities to State, local, or Tribal organizations.

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

This final rule does not have Tribal implications, as specified in EO 13175 (65 FR 67249, November 9, 2000). This regulation applies directly to facilities that supply fuel or chemicals that when used emit GHGs or facilities that directly emit greenhouses gases. Facilities expected to be affected by the final rule are not expected to be owned by Tribal governments. Thus, Executive Order 13175 does not apply to this final rule.

Although EO 13175 does not apply to this final rule, EPA sought opportunities to provide information to Tribal governments and representatives during development of the rule. In consultation with EPA's American Indian Environment Office, EPA's outreach plan included tribes. EPA conducted several conference calls with Tribal organizations during the proposal phase. For example, EPA staff provided information to tribes through conference calls with multiple Indian working groups and organizations at EPA that interact with tribes and through individual calls with two Tribal board members of TCR. In addition, EPA prepared a short article on the GHG reporting rule that appeared on the front page a Tribal newsletter—Tribal Air News—that was distributed to EPA/OAQPS's network of Tribal organizations. EPA gave a presentation on various climate efforts, including the mandatory reporting rule, at the National Tribal Conference on Environmental Management on June 24-26, 2008. In addition, EPA had copies of a short information sheet distributed at a meeting of the National Tribal Caucus. See the "Summary of EPA Outreach Activities for Developing the GHG reporting rule," in Docket No. EPA-HQ-OAR-2008-0508-055 for a complete list of Tribal contacts. EPA participated in a conference call with Tribal air coordinators in April 2009 and prepared a

guidance sheet for Tribal governments on the proposed rule. It was posted on the MRR Web site and published in the Tribal Air Newsletter

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

EPA interprets EO 13045 (62 F.R. 19885, April 23, 1997) as applying only to those regulatory actions that concern health or safety risks, such that the analysis required under section 5-501 of the EO has the potential to influence the regulation. This action is not subject to EO 13045 because it does not establish an environmental standard intended to mitigate health or safety risks.

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

This final rule is not a "significant energy action" as defined in EO 13211 (66 FR 28355, May 22, 2001) because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy. Further, we have concluded that this rule is not likely to have any adverse energy effects. This final rule relates to monitoring, reporting and recordkeeping at facilities that supply fuel or chemicals that when used emit GHGs or facilities that directly emit greenhouses gases and does not impact energy supply, distribution or use. Therefore,

we conclude that this rule is not likely to have any adverse effects on energy supply, distribution, or use.

I. National Technology Transfer and Advancement Act

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

This rulemaking involves technical standards. EPA will use more than 60 voluntary consensus standards from 10 different voluntary consensus standards bodies, including the following: ASTM, ASME, ISO, Gas Processors Association, American Gas Association, and National Lime Association. These voluntary consensus standards will help facilities monitor, report, and keep records of GHG emissions. No new test methods were developed for this rule. Instead, from existing rules for source categories

and voluntary GHG programs, EPA identified existing means of monitoring, reporting, and keeping records of GHG emissions. The existing methods (voluntary consensus standards) include a broad range of measurement techniques, including many for combustion sources such as methods to analyze fuel and measure its heating value; methods to measure gas or liquid flow; and methods to gauge and measure petroleum and petroleum products. The test methods are incorporated by reference into the final rule and are available as specified in 40 CFR 98.7.

By incorporating voluntary consensus standards into this final rule, EPA is both meeting the requirements of the NTTAA and presenting multiple options and flexibility for measuring GHG emissions.

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

EO 12898 (59 FR 7629, February 16, 1994) establishes Federal executive policy on environmental justice. Its main provision directs Federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their

programs, policies, and activities on minority populations and low-income populations in the U.S.

EPA has determined that this final rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it does not affect the level of protection provided to human health or the environment. This final rule does not affect the level of protection provided to human health or the environment because it is a rule addressing information collection and reporting procedures.

K. Congressional Review Act

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

will be effective [INSERT THE DATE 60 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER].

List of Subjects

40 CFR Part 86

Environmental protection, Administrative practice and procedure, Air pollution control, Reporting and recordkeeping requirements, Motor vehicle pollution.

40 CFR Part 87

Environmental protection, Air pollution control, Aircraft, Incorporation by reference.

40 CFR Part 89

Environmental protection, Administrative practice and procedure, Confidential business information, Imports, Labeling, Motor vehicle pollution, Reporting and recordkeeping requirements, Research, Vessels, Warranty.

40 CFR Part 90

Environmental protection, Administrative practice and procedure, Confidential business information, Imports, Labeling, Reporting and recordkeeping requirements, Research, Warranty.

40 CFR Part 94

Environmental protection, Administrative practice and procedure, Air pollution control, Confidential business information, Imports, Incorporation by reference, Labeling,

Penalties, Vessels, Reporting and recordkeeping requirements, Warranties.

40 CFR Part 98

Environmental protection, Administrative practice and procedure, Greenhouse gases, Incorporation by reference, Suppliers, Reporting and recordkeeping requirements.

40 CFR Part 1033

Environmental protection, Administrative practice and procedure, Confidential business information, Incorporation by reference, Labeling, Penalties, Railroads, Reporting and recordkeeping requirements.

40 CFR Part 1039

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

40 CFR Part 1042

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

Mandatory Reporting of Greenhouse Gases

Page 591 of 1302

40 CFR Parts 1045, 1048, 1051, and 1054

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

40 CFR Part 1065

Environmental protection, Administrative practice and procedure, Incorporation by reference, Reporting and recordkeeping requirements, Research.

Date: September 22, 2009



Lisa P. Jackson,
Administrator.