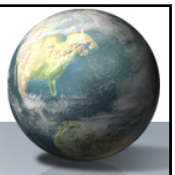
Session Overview

- **Background on the Proposed Greenhouse Gas Mandatory Reporting Rule**
- **Overview of Proposal for Oil and Natural Gas Systems Source Category**
- **Public Comment Period and Stakeholder Engagement**
- **More Information and Online Resources**
- **Opportunity for Clarifying Questions**

Workshop Session not a substitute for reading the Proposed Rule



- This presentation is intended to assist reporting facilities/owners in understanding key provisions of the proposed rule. However, it is not intended to be a substitution for the rule.
- If there are any inconsistencies with the workshop material and the rule, defer to what's in the rule.
- Asking a question at the workshop is not the same as submitting public comment. Please see Web page or preamble for information on how to submit comments.
- Visit EPA's Web site (www.epa.gov/climatechange/emissions/ghgrulemaking.html) for more information, including the proposed preamble and rule and additional information sheets on specific industries, or go to <www.regulations.gov> to access the rulemaking docket (EPA-HQ OAR-2008-0508). For questions that cannot be answered through the Web site or docket, call 1-877-GHG-1188.

Proposed Mandatory GHG Reporting Rule: Overview

Outline

- Congressional Request
- Rulemaking Approach
- Summary of Key Elements of Proposal
- Appendices

Appropriations Language

FY08 Omnibus Appropriations, signed Dec 26, 2007:

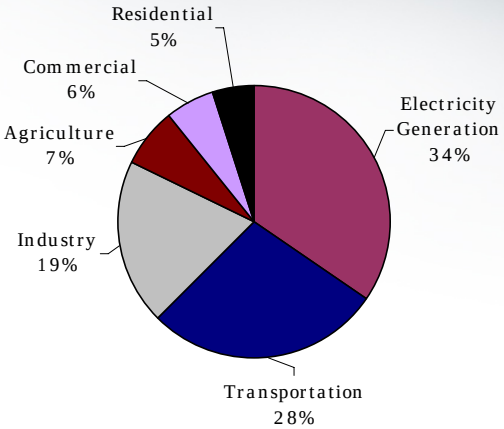
- "... not less than $3,500,000 shall be provided for activities to develop and publish a draft rule not later than 9 months after the date of enactment of this Act, and a final rule not later than 18 months after the date of enactment of this Act, to require mandatory reporting of greenhouse gas emissions above appropriate thresholds in all sectors of the economy..."

Accompanying Explanatory Statement

- The Agency shall "use its existing authority under the Clean Air Act" to develop a mandatory GHG reporting rule. "The Agency is further directed to include in its rule reporting of emissions resulting from upstream production and downstream sources, to the extent that the Administrator deems it appropriate. The Administrator shall determine appropriate thresholds of emissions above which reporting is required, and how frequently reports shall be submitted to EPA. The Administrator shall have discretion to use existing reporting requirements for electric generating units under Section 821 of the Clean Air Act...."

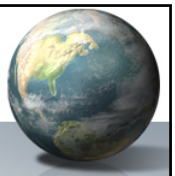
U.S. GHG Emissions (2007)

Emissions (CO_2e) Allocated to Economic Sectors



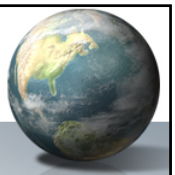
Source: *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2007* (April 2009)

Rulemaking Approach



1. Start with anthropogenic emission sources in the U.S. GHG Inventory and IPCC Guidelines
2. Review existing methodologies and reporting programs (e.g., CARB, Acid Rain Program/RGGI, The Climate Registry, 1605b, Climate Leaders, fuel quality and vehicle programs, etc.)
3. Apply screening criteria to identify source categories to be included in the rule:
   - Could be covered under the Clean Air Act
   - Ability to measure
   - Administrative burden
     - Number of reporters vs. coverage of emissions
4. Develop reporting methodologies for selected emission source categories
5. Established cross-Agency workgroup to develop rule
   - 8 technical groups (by source category)
   - Over 100 workgroup members
   - Nearly every office within EPA represented (OAR, OGC, OECA, OPEI, OEI, OW, OSWER, OPPTS, etc.)

Source Categories Coverage



After applying the screening criteria, EPA developed reporting methodologies for emissions source categories found at the following facilities:

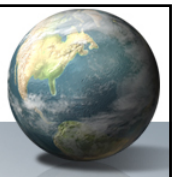
Sector	Reporters
Electricity Generation	Power plants
Transportation	Vehicle and Engine Manufacturers
Industrial	All large industrial emitters, including those in the following industries:
Metals	Iron and Steel, Aluminum, Magnesium, Ferroalloy, Zinc, and Lead
Minerals	Cement, Lime, Glass, Silicon Carbide, Pulp and Paper
Chemicals	HCFC-22, Ammonia, Nitric Acid, Adipic Acid, SF6 from Electrical Equipment, Hydrogen, Petrochemicals, Titanium Dioxide, Soda Ash, Phosphoric Acid, Electronics, Titanium Dioxide
Oil and Gas	Components of oil and gas systems, Underground coal mining
Other	Landfills, Wastewater Treatment, Ethanol, Food Processing
Agriculture	Manure Management
Upstream Suppliers*	Petroleum Refineries, Gas Processors, Natural Gas Distribution Companies, Coal Mines, Importers, Industrial Gases (e.g., HFCs, N2O, PFCs, CO2)

*Some upstream suppliers will also be reporting their direct emissions (e.g., refineries)

Outreach meetings held

- Meetings held with over 250 different groups including:
  - States, state- or regional-based groups: CA, CT, NM, SCAQMD, TCR, NACAA, ECOS, WCI, RGGI
  - Tribes: Tribal Air Caucus, National Tribal Air Assoc.
  - Trade Associations: Edison Electric Institute, American Chemistry Council, Portland Cement Assoc., National Petrochemical & Refiners Assoc., American Trucking Assoc., Alliance of Automobile Manufacturers, National Mining Assoc, American Farm Bureau Federation, American Forests and Paper Assoc.
  - NGOs: WRI, NRDC, Pew

Preamble Outline

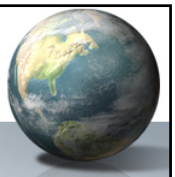


- Background
  - GHGs, Climate Change, Statutory Authority, Inventory, Other Climate Efforts, etc.
- Summary of Existing Federal, State and Regional Emission Reporting Programs
  - 1605(b), EPA Voluntary and Mandatory Programs, CARB, RGGI, etc.
- General Reporting, Recordkeeping and Verification Requirements
  - Selection of GHGs and Source Categories, Thresholds, Level of Reporting, Monitoring, Reporting, Recordkeeping, Verification, etc.
- Source Category Specific Reporting, Recordkeeping and Verification Requirements
  - 42 subsections
- Collection, Management and Dissemination of GHG Emissions Data
- Compliance and Enforcement
- Economic Impacts
  - Compliance costs, economic impacts, small businesses, etc.
- Statutory and Executive Orders Reviews

Key Aspects of Proposal

- Who would report
- Thresholds
- Reporting methodology
- Frequency
- Verification

Who Reports



- Who reports in the range of current programs?
  - Most mandatory reporting programs have facility-level or unit-level reporting (e.g., CA, EU ETS, TRI, NEI, etc.)
  - Most voluntary GHG programs have corporate-level reporting, but encourage facility-level reporting (e.g., Climate Leaders, TCR)
- Who is the appropriate reporter for a mandatory reporting program?
  - When reported at facility-level, data can be aggregated to corporate-level but disaggregating from corporate-level to facility-level data is more difficult
  - Relying exclusively on corporate-level reporting would minimize usefulness of data for developing new policy or implementing current CAA programs (e.g., NSPS, NSR)
  - EPA would need to define organizational boundaries for corporations (i.e., equity share or control approaches)
  - Frequent changes in corporate structure and ownership over time could make data from particular facilities difficult to track
  - A threshold at the corporate level would likely encompass more and smaller facilities than if thresholds applied at the facility level
- Should the reporter be uniform for all source categories in the program?
  - Could be difficult to define facility for all reporters (e.g., importers)

<u>Proposal</u>: Hybrid- Primarily facility, with limited exceptions (e.g., fuel importers, vehicle and engine manufacturers)

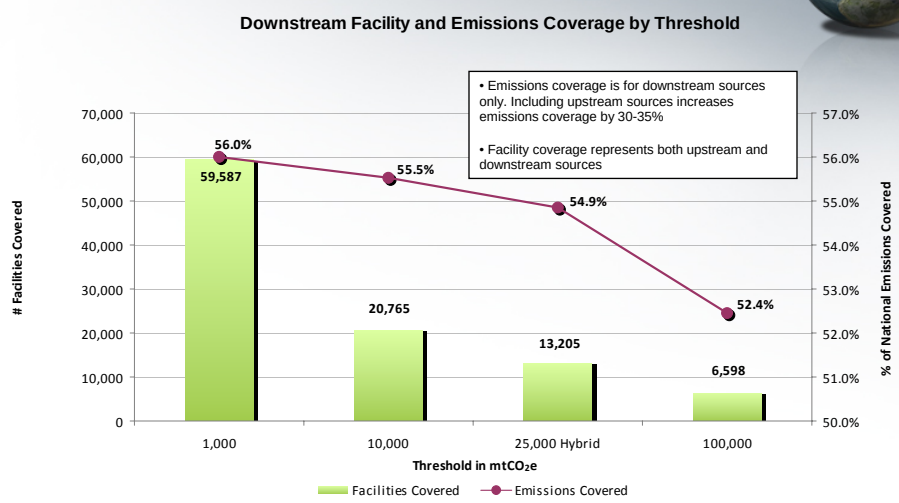
Thresholds

- What is the form of the threshold?
  - Capacity, Emissions, Hybrid
- What is the level of an emissions threshold (in CO2e)?
  - 1,000 tons, 10,000 tons, 25,000 tons, 100,000 tons, etc.
  - Proposing lower thresholds will likely increase pressure for less rigorous measurement methods
- What data are available to support the threshold determination?
- Examples of existing GHG programs:
  - CARB uses a hybrid approach
    - 25,000 tons of CO2e for most source categories
    - Capacity or other for specific source categories (e.g., electricity generation, oil refineries)
  - EU uses a capacity approach
    - Each source category has a specific capacity threshold (e.g., 500 tons of clinker/day for cement facilities)
- Relationship between level of threshold and rigor of monitoring method
  - Proposal of a lower threshold could increase pressure to use less rigorous monitoring methods.

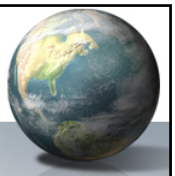
Proposal:

- **Capacity-based threshold, where appropriate and feasible**
- **Emissions-based threshold of 25,000 metric tons of CO2e/yr for other sources**

Estimated Proposal Coverage



Methodologies - Background



- What types of methodologies are available for calculating GHGs?
  - Direct measurement
  - Facility-specific calculation (i.e., calculations based on periodic sampling/testing at a facility)
  - Simplified methods using default factors
- What are the sources of methods currently in use?
  - EPA, IPCC, WRI/WBCSD , industry, States, voluntary programs (e.g., TCR)
- Examples from existing GHG programs:
  - CARB uses a hybrid approach of direct measurement and facility-specific calculations
  - 1605(b) offers a range of choices from direct measurement to mass balance calculation with default emissions factors

Proposed Methodologies

- **Hybrid of direct measurement, where available, and facility-specific calculation for other sources**
  - Use direct measurement of emissions where facilities already reporting and collecting (e.g., Acid Rain Program) and facility-specific calculations for other source categories
    - Relatively high certainty of data, takes advantage of existing practices at facilities
    - Minimizes incremental cost of proposal
  - Generally, vehicle/engine manufacturers would use existing certification and test protocols
  - Industrial gas suppliers use direct reporting of gas produced, imported and exported
- **EPA direct reporting system for fuel quantity and quality information**
  - Facilities would report all information directly to EPA
  - More consistent with approach for direct emitters (e.g., timing, verification, definitions of facilities etc.)

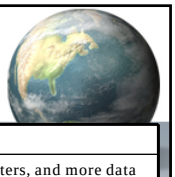
Frequency

- What is the frequency of reporting in the range of current policies and programs?
  - Most regulatory programs require quarterly reporting in order to provide necessary feedback to facilities and, in the case of cap & trade, the market (e.g., Acid Rain Program, fuel quality data in OTAQ, Title VI)
  - TRI is a mandatory but non-regulatory annual requirement
  - Most voluntary programs tend to require annual reporting to be less burdensome (e.g., Climate Leaders, 1605(b), EPA's non-CO2 programs)
- What is the appropriate frequency for a mandatory reporting program?
- Should the frequency be uniform for all source categories in the program?

Proposal: Annually for New Reporters

- **Exception: Those facilities already reporting quarterly for existing mandatory programs (e.g., Acid Rain Program) would continue to report quarterly**
- **Data collection would begin January 1, 2010 with first reports submitted to EPA March 31, 2011.**
  - **Preamble discusses other options if the final rule is not published in sufficient time to enable complete reporting of 2010 data using the methods described in the rule.**

Verification



Verification Type	Pros	Cons
EPA verification	•Timely QA/QC data available to reporters, public, etc., •EPA retains control of data •Lower costs for reporters •Highest EPA and stakeholder confidence in data •EPA/States are usual CAA verifiers	•Requires more data from reporters, and more data management for EPA •Start-up costs for EPA to develop QA/QC and auditing system •Requires sustained financial and human resources to handle large amounts of data in timely fashion •Requires procedures for handling CBI
Third-party verification	•Similar to some other GHG mandatory programs (e.g., CARB, EU ETS) •Could be a way to alleviate some CBI concerns	•Requires more time for data to reach EPA •Less transparency in data •Costs to EPA to certify verifiers and audit reports •Potential inconsistencies •Highest costs for reporters •Potential conflicts of interest between verifier and reporter •Strong industry opposition
No verification	•Lowest cost to reporters and EPA.	•Lowest EPA and stakeholder confidence in data •Significant changes would be required in any transition to a regulatory program.

Proposal: EPA as verifier

- **Reporter would self-certify emissions data and other specified activity data and submit to EPA who would perform QA/QC of reports; EPA would take enforcement action for non-compliance**
- **Consistent with most EPA Programs**
  - **Some OTAQ fuels programs require additional annual audit of reporting parties' records by independent auditor**

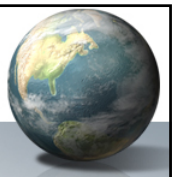
Approach to Mobile Sources (1)

- Vehicle and engine manufacturers
  - Through EPA's long-standing testing and certification requirements for criteria emissions and fuel economy, EPA already has a structure for receiving emission data from manufacturers.
  - CO_2 is almost universally measured as a part of vehicle and engine certification. CARB also requires all manufacturers to report CO_2 measured during their certification emission tests to facilitate improvements in CA's GHG emissions inventory.
  - CH_4, N_2O and air conditioning HFC emissions are rarely measured and reported today.

Proposal:

- **Expand existing emission reporting requirements to include CO_2, CH_4, N_2O and HFCs for new vehicles and engines.**
  - **Emissions would be reported as a rate (e.g. grams/mile) similar to our existing requirements**
  - **Would provide consistency in CO_2 reporting requirements across all vehicle and engine categories**
  - **Modest new requirements for measuring and reporting CH_4, N_2O and HFCs**
    - **HFC reporting would be primarily limited to light duty vehicles**
- **Manufacturers would report annually, at time of current annual certification**
- **Propose that small manufacturers would not have to report**

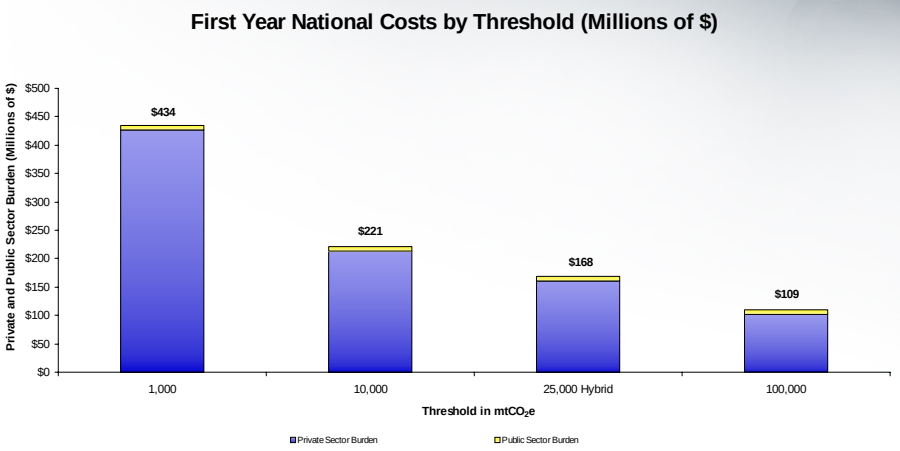
Approach to Mobile Sources (2)



- Fleets and VMT/travel activity data
  - Reviewed options for collecting fleet-wide, in-use emissions data to complement manufacturer data.
  - EPA already receives some truck and rail fleet emissions data voluntarily via the SmartWay program and some county-level travel activity data and other mobile source data from states via the Air Emissions Reporting Rule.

Proposal: Not proposing any new requirements; only seeking comment on collecting additional emissions and activity data from fleets and state and local governments.

Estimated Proposal Costs



Proposal Summary

- Reporter: Hybrid approach
  - Facility based reporting for all source categories for which there are methods
  - Limited exceptions for a few reporters (e.g. fuel importers, vehicle and engine manufacturers)
- Threshold: Hybrid approach
  - A facility that meets the emissions threshold of 25,000 tons CO_2e reports all source categories for which there are methods in the rule
  - May develop capacity thresholds where feasible (e.g., ARP)
- Methodology: Hybrid approach
  - Direct measurement of stationary combustion source categories where data currently collected (e.g., CO2 emissions from EGUs in ARP)
  - Facility-specific calculation methods for other source categories at the facility
- Frequency: Annual
  - Annual for new reporters
  - Facilities already reporting similar data more frequently to other mandatory programs (e.g., Acid Rain Program) continue current practice
- Verification: EPA as the verifier
  - Reporter self-certifies emissions data and other specified activity data and submits to EPA who performs QA/QC of reports

For more information

- Preamble and proposed regulatory text available at: www.regulations.gov after publication in the Federal Register
- Instructions for submitting written comments: www.regulations.gov
- Additional information: www.epa.gov/climatechange/emissions/ghgrulemaking.html

  Hotline: 1-877-GHG-1188

  Email: GHGMRR@epa.gov

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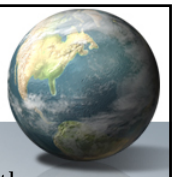
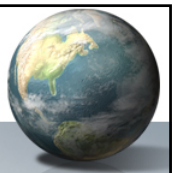
Appendix A: CAA Section 114



- **Recordkeeping, inspections, monitoring and entry**: For the purpose of "...(iii) carrying out any provision of this chapter...(1) The Administrator may require any person who owns or operates any emission source, who manufactures emission control equipment or process equipment, who the Administrator believes may have information necessary for the purposes set forth in this subsection, or who is subject to any requirement of this chapter (other than a manufacturer subject to the provisions of section 7525(c) or 7542 of this title with respect to a provision of subchapter II of this chapter) a one-time, periodic or continuous basis to-(A) establish and maintain such records; (B) make such reports; (C) install, use and maintain such monitoring equipment and use such audit procedures, or methods; (D) sample such emissions (in accordance with such procedures or methods, at such locations, at such intervals, during such periods and in such manner as the Administrator shall prescribe); (E) keep records on control equipment parameters, production variables or other indirect data when direct monitoring of emissions is impractical; (F) submit compliance certifications in accordance with subsection (a)(3) of this section; and (G) provide such other information as the Administrator may reasonably require."

Appendix B: CAA Section 208

- **Information Collection**: " Every manufacturer of new motor vehicles or new motor vehicle engines, and every manufacturer of new motor vehicle or engine parts or components, and other persons subject to the requirements of this part or part C of this subchapter, shall establish and maintain records, perform tests where such testing is not otherwise reasonably available under this part and part C of this subchapter, make reports and provide information the Administrator may reasonably require to determine whether the person has acted or is acting in compliance with this part and part C of this subchapter and regulations thereunder, or to otherwise carry out the provision of this part and part C of this subchapter, and shall, upon request of an officer or employee duly designated by the Administrator, permit such officer or employee at reasonable times to have access to and copy such records."



Proposed Reporting of Fugitive CO2 and CH4 emissions from Oil and Natural Gas Systems

~Subpart W~

Who Would Report?

- For the Oil and Natural Gas Source Category, proposed threshold for reporting is 25,000 metric tons CO2e (including emissions from fugitive CH4 and CO2 and combusted CO2, N2O, and CH4 gases).
- To determine whether a facility is over the proposed threshold, consider all source categories at the facility for which methods are proposed in the rule.
- Under the proposal, this source category consists of the following facilities:
  - Offshore petroleum and natural gas production facilities
  - Onshore natural gas processing facilities, including gathering/boosting stations
  - Onshore natural gas transmission compression facilities
  - Underground natural gas storage facilities
  - Liquefied natural gas (LNG) storage facilities
  - LNG import and export facilities.

Greenhouse Gases to Report

- The proposal calls for affected facilities to report fugitive carbon dioxide (CO2) and methane (CH4) emissions from each of the 24 source types for which emission calculation methods are defined in the rule.
- *The proposal defines fugitive emissions from the petroleum and natural gas industry as unintentional equipment emissions and intentional or designed releases of CH4-and/or CO2-containing natural gas or hydrocarbon gas (not including combustion flue gas).
  - Derived from the definition of fugitive emissions outlined in the 2006 IPCC Guidelines for National GHG Inventories.
- Each facility would also report GHG emissions for other source categories for which calculation methods are provided in the rule.
  - i.e., facilities would report CO2, N2O, and CH4 emissions from each stationary combustion unit on site by following the requirements of subpart C (General Stationary Fuel Combustion Sources).

* In the context of this proposed rule, fugitive emissions also mean CO2 emissions resulting from combustion of natural gas in flares.

Proposal for Calculating GHG Emissions

- For the sources listed below, the proposal calls for facilities to conduct annual leak detection using an infrared remote detection device, organic vapor analyzer, or toxic vapor analyzer.
- For each individual source for which a leak is detected, measure volumetric fugitive emissions using a high-volume sampler. Where high volume samplers cannot capture all of the fugitive emissions, use calibrated bagging; or rotameters, turbine meters, or other meters, depending on the individual component.

- Centrifugal compressor dry seals fugitive emissions.
- Centrifugal compressor wet seals fugitive emissions, including all stack methane emissions from sources such as, but not limited to, the wet seal degas.
- Compressor fugitive emissions.
- LNG import and export facility fugitive emissions.
- LNG storage station fugitive emissions.
- Non-pneumatic pumps fugitive emissions.
- Open-ended lines fugitive emissions.
- Pump seals fugitive emissions.
- Offshore platform pipeline fugitive emissions.
- Platform fugitive emissions.
- Processing facility fugitive emissions.
- Reciprocating compressor rod packing fugitive emissions, including all stack emission methane emissions resulting from reciprocating engine operation.
- Storage station fugitive emissions.
- Transmission station fugitive emissions.
- Storage wellhead fugitive emissions.

Proposal for Calculating GHG Emissions, cont.

- For the sources listed below, the proposal calls for facilities to conduct annual leak detection of fugitive emissions using an infrared remote detection device, organic vapor analyzer, or toxic vapor analyzer.
- For each individual source for which a leak is detected, estimate CO2 and CH4 emissions using direct measurement or an engineering calculation method specified in the rule.

- Acid gas removal vent stacks
- Natural gas-driven pneumatic pumps
- Natural gas-driven pneumatic manual valve actuator devices
- Natural gas-driven pneumatic valve bleed devices
- Blowdown vent stacks
- Dehydrator vent stacks
- Flare stacks*
- Storage tanks*
- Compressor wet seal degassing vents*

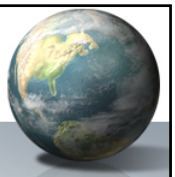
*A combination of engineering estimation and direct measurement shall be used to calculate emissions from these fugitive emissions sources.

Proposal for Data Reporting Requirements

In addition to the information required by the General Provisions, the proposal calls for the following information to be reported:

- Annual CO2 and CH4 emissions reported separately for each facility.
- Within each operation, CO2 and CH4 emissions would be aggregated for each source type (i.e., the 24 source types). For example, an onshore natural gas processing plant would report emissions for all pump seals combined, flare stacks combined, etc.
- Emissions would be reported separately for equipment in standby mode.
- Emissions calculated for these sources shall assume no CO2 capture and transfer off site. This value is proposed to be reported separately under Subpart PP.
- Equipment counts aggregated for each of the 24 source types listed previously.
- Engineering estimate of total component count.
- Total number of compressors and average operating hours per year for compressors, if applicable.

Proposal for Data Reporting Requirements, cont.



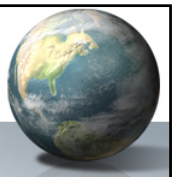
- Minimum, maximum, and average throughput for each facility.
- Specification of the type of any control device used, including flares, on the 24 source types listed above.
- For offshore petroleum and natural gas production facilities, the number of connected wells, and whether they are producing oil, gas, or both.
- Detection and measurement instruments used.

Relevant Subparts

Potentially relevant Subparts for Oil and Natural Gas Systems facilities include:

- General Stationary Fuel Combustion, 40 CFR, Part 98, Subpart C
- Petroleum Refineries, 40 CFR, Part 98, Subpart Y
- Suppliers of Petroleum Products, 40 CFR, Part 98, Subpart MM
- Suppliers of Natural Gas and NGL, 40 CFR, Part 98, Subpart NN
- Suppliers of CO2, 40 CFR, Part 98, Subpart PP

Public Comment Period and Stakeholder Engagement



- The proposed rule was published in the Federal Registrar on April 10, 2009, 60 day comment period open until June 9, 2009.
- Conducted two public hearings
  - April 6 and 7 in Arlington, VA
  - April 16 in Sacramento, CA

For More Information

- Written comments should be submitted to
  www.regulations.gov
  Docket ID No. EPA-HQ-OAR-2008-0508

- Additional information including the proposed rule and preamble text, instructions for submitting comments, and information sheets by source category is available at:
  www.epa.gov/climatechange/emissions/ghgrulemaking.html
  Hotline: 1-877-GHG-1188
  Email: GHGMRR@epa.gov