Frequently Asked Questions for Subpart W: Petroleum and Natural Gas Systems

Proposed Mandatory Reporting of Greenhouse Gases Rule

General Information

What is the action being taken?

On March 22, 2010, the U.S. Environmental Protection Agency (EPA) signed a proposed rulemaking for the mandatory reporting of greenhouse gases (GHGs) from petroleum and natural gas systems. This proposed rulemaking amends the GHG Mandatory Reporting Rule (MRR) that was promulgated on October 30, 2009 (74 FR 56260). That rule required reporting of GHGs from large emissions sources in the United States. In general, this proposal requires that petroleum and natural gas facilities emitting 25,000 metric tons of carbon dioxide equivalent (metric tons CO_2e) or more report their GHG emissions to EPA. Industry segments proposed for inclusion are: onshore petroleum and natural gas production, offshore petroleum and natural gas production, onshore natural gas processing, natural gas transmission, underground natural gas storage, liquefied natural gas (LNG) storage, LNG import and export, and natural gas distribution.

What is the purpose of the proposed rulemaking?

As the second largest source of anthropogenic methane emissions in the United States, petroleum and natural gas systems is an important addition to the GHG emission data that EPA is already collecting under the GHG Mandatory Reporting Rule (MRR). This proposed rulemaking would provide important data on the location and magnitude of GHGs from petroleum and natural gas systems. Data from this sector are critical to fully understanding the complete picture of emissions across the United States. It will also allow facilities to compare their emissions to other facilities of similar size.

Why didn't EPA finalize the reporting requirements for petroleum and natural gas systems in the final MRR published in October 2009?

EPA received almost 1,200 pages of detailed comments on the initial petroleum and natural gas systems proposal from the petroleum and natural gas industry, state governments, and environmental and consulting groups. Fugitive and vented emissions from the petroleum and natural gas sector come from a large number of diffuse sources, making GHG emission calculation methodologies particularly complex. Given the scope of the comments received and the complexity of quantifying emission sources in this sector, EPA did not finalize the subpart related to petroleum and natural gas systems. Instead, EPA took additional time to thoroughly review all comments and with this action is re-proposing this source category. This will ensure that the technical requirements for data collection can be of the highest possible quality while managing the reporting burden to this industry.

How does this rule relate to the final Mandatory Reporting Rule for Greenhouse Gases (MRR) finalized in October, 2009?

This proposed rulemaking provides requirements for the reporting of fugitive and vented emissions from petroleum and natural gas systems. Some facilities in this industry may already be required to report their combustion emissions under the final MRR. This proposed rulemaking would require facilities to include fugitive and vented emissions in their applicability determinations to determine whether they emit 25,000 metric tons CO_2e or more per year. These facilities would also have to begin reporting fugitive and vented emissions. All the relevant general reporting requirements in the final rule would also apply to reporters in the petroleum and natural gas industries under this proposal.

What are the primary differences between this proposed rulemaking and the initial proposal for petroleum and natural gas systems?

The primary differences between this proposed rulemaking and the initial proposed rule are related to the emission calculation methodologies proposed and the scope of the source category. Whereas the initial proposal focused on comprehensive leak detection and direct measurement, this proposal includes direct measurement of emissions for only the most significant emissions sources, and the use of engineering estimates, emission modeling software, and emission factors, as appropriate, for other sources. In terms of scope of the source category, the initial proposal did not include emission reporting from onshore petroleum and natural gas production and distribution. The proposed rulemaking includes these industry segments. Finally, this proposed rulemaking clarifies the definition of “fugitive” emissions.

When would the proposed rule go into effect?

Reporting is proposed to be at the facility level with data collection beginning on January 1, 2011. Reports would be submitted annually with the first report due to EPA by March 31, 2012, for emissions during 2011.

How did EPA engage stakeholders in the development of the proposed rule?

EPA conducted targeted outreach to the petroleum and natural gas systems for the initial proposal, and through this process met with all major petroleum and natural gas trade associations, many petroleum and natural gas companies, and states. EPA incorporated the public comments on the petroleum and natural gas subpart in the initial proposal into this proposal. EPA will be holding a public hearing on this proposal and will continue to meet with stakeholders as requested.

Coverage

Who would be required to report under this proposal?

In addition to the industry segments included in the initial proposal (offshore petroleum and natural gas production, onshore natural gas processing, gas transmission, underground natural gas storage, LNG storage and LNG import and export facilities), this proposed rule would also require reporting from onshore production and natural gas distribution. EPA estimates that these segments respectively account for 58 percent and 6 percent of the total GHG emissions from the industry. Facilities in these industry segments that emit 25,000 metric tons or more of CO_2e per year, from combustion, fugitive, and vented emissions combined, would be required to report.

How many facilities would be required to report?

EPA estimates that this proposed rule would affect just over 3,000 facilities, approximately 1,200 of which will already be reporting to EPA beginning in 2011 under other subparts of the final MRR (e.g., subpart C, General Stationary Fuel Combustion).

What percentage of emissions would be covered by the proposed rule?

EPA estimates that the proposal would cover approximately 89 percent of fugitive and vented GHG emissions from the petroleum and natural gas industry, and about 85 percent of total combustion, fugitive and vented emissions.

Which greenhouse gases (GHGs) would be covered under the proposed rule?

This proposed rulemaking proposes methods for estimating fugitive and vented carbon dioxide (CO_2) and methane (CH_4) emissions from the petroleum and natural gas industry, including CO_2, CH_4, and nitrous oxide (N_2O) combustion emissions from flares. Facilities covered by this proposed rule would also be required to report emissions under other subparts of the final MRR, if applicable. The final MRR requires reporting of anthropogenic GHG emissions covered under the United Nations Framework Convention on Climate Change (UNFCCC); CO_2, CH_4, nitrous oxide (N_2O), hydrofluorocarbons (HFC), perfluorochemicals (PFC), and sulfur hexafluoride (SF_6), as well as other fluorinated gases (e.g., nitrogen trifluoride and hydrofluorinated ethers). These gases are often expressed in metric tons of carbon dioxide equivalent (metric tons CO_2e).

Defining a Facility

How does EPA define "facility" under the proposed requirements for mandatory reporting of GHG emissions from the petroleum and natural gas industry?

The final mandatory reporting rule promulgated in October 2009 defines "facility" as any physical property, plant, building, structure, source, or stationary equipment located on one or more contiguous or adjacent properties in actual physical contact or separated solely by a public roadway or other public right-of-way and under common ownership or common control, that emits or may emit any greenhouse gas.

The proposed rule includes three different proposed facility definitions for the following three industry segments—onshore petroleum and natural gas production, offshore petroleum and natural gas production, and natural gas distribution:

Onshore petroleum and natural gas production facility means all petroleum or natural gas equipment associated with all petroleum or natural gas production wells under common ownership or common control by an onshore petroleum and natural gas production owner or operator located in a single hydrocarbon basin which is assigned a three digit Geologic Province Code as defined by the American Association of Petroleum Geologists. Where an operating entity holds more than one permit in a basin, then all onshore petroleum and natural gas production equipment relating to all permits in their name in the basin is one onshore petroleum and natural gas production facility.

Offshore petroleum and natural gas production facility means any platform structure, either floating in the ocean or lake, or fixed on the ocean or lake bed, that houses equipment to extract hydrocarbons from the ocean or lake floor and transports it to storage or transport vessels or transports onshore. In addition, offshore production includes secondary platform structures and floating storage tanks connected to the platform structure by a pipeline.

Natural gas distribution facility means the distribution pipelines, metering stations, and regulating stations that are operated by a Local Distribution Company (LDC) that is regulated as a separate operating company by a public utility commission or that are operated as an independent municipally-owned distribution system.

Why did EPA propose new facility definitions for onshore petroleum and natural gas production and offshore petroleum and natural gas production and distribution?

These segments of the industry do not meet the commonly understood definition of a facility, which includes a fence-line boundary. In the case of onshore production, individual wells can be located in remote and distant locations. For offshore production, equipment may be located on multiple platforms and operate collectively to extract hydrocarbons. The distribution segment can be represented by hundreds of miles of pipeline. Nevertheless, these segments, particularly onshore petroleum and natural gas production, are a significant source of fugitive and vented GHG emissions. EPA's proposed definition for each of these industry segments attempts to utilize commonly understood boundaries for the segment, while reflecting the unique nature of the industry.

Do the facility definitions in this proposed rule affect other EPA reporting requirements?

No. The facility definitions proposed in this rule do not impact requirements under other EPA regulations, for example, New Source Review (NSR).

Costs

What is the estimated cost to implement this proposed rule?

EPA estimates the total cost of reporting to the private sector would be $60 million in the first year of reporting and $25 million in subsequent years. EPA estimates that the average cost per facility would be approximately $18,000 for the first year and $8,000 in subsequent years. Using the best data available, EPA estimates that on average, this cost is less than one tenth of one percent of annual revenue for each facility.

How does the estimated cost of compliance for this proposed rulemaking differ from the initial proposal?

It is difficult to conduct a direct comparison of costs because the proposed rulemaking includes emission reporting from the onshore petroleum and natural gas production and distribution segments that were not included in the initial proposal. The most direct comparison would consider the cost per ton of CO_2e reported. In the initial proposal, EPA estimated the cost per ton of CO_2 reported to be $0.38/metric tons CO_2e reported (year 1) and $0.33 metric tons CO_2e reported (subsequent years). In this proposed rulemaking the estimated cost per ton is estimated to be 0.21/metric tons CO_2e reported (year 1) and $0.08 metric tons CO_2e reported (subsequent years).

What impact does this proposed rule have on small businesses?

EPA expects that the majority of small businesses would not be affected, as most fall below the 25,000 metric ton threshold and would not be required to report.

Relationship to Other Programs

How does this proposal relate to the Methane to Markets Partnership and EPA's Natural Gas STAR program?

The Methane to Markets Partnership (M2M) is an international initiative that unites 32 countries and over 1,000 public and private sector organizations to advance cost-effective, near-term methane recovery and use as a clean energy source from the coal mining, landfill, agriculture and oil and gas sectors. In support of these efforts, U.S. EPA implements the Natural Gas STAR Program to partner with oil and natural gas companies—both domestically and abroad—to advance the adoption of cost-effective technologies and practices that improve operational efficiency and reduce emissions of methane, a potent greenhouse gas and clean energy source. Through the Natural Gas STAR Program the oil and natural gas industry has eliminated more than 822 billion cubic feet (Bcf) of domestic methane emissions through the implementation of approximately 150 cost-effective technologies and practices.

The proposed mandatory GHG reporting rule for petroleum and natural gas systems will complement industry efforts to reduce methane emissions through the Natural Gas STAR Program. It is anticipated that industry would benefit from having methane emissions data, as this information will likely facilitate industry efforts to reduce leaks and losses, deliver more natural gas to markets, and improve worker safety and overall corporate productivity. For a facility emitting 25,000 metric tons CO_2e per year, reducing methane emissions by only 8 percent could yield annual gas savings of an estimated 4,900 Mcf of natural gas valued at over $19,000.