

EPA Issues Greenhouse Gas (GHG) Mandatory Reporting Rule (MRR) How Do I Get Started with Compliance Programs?

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Back in our July issue of Avogadro Advisor, we provided some guidance on planning for voluntary and potential mandatory reporting of GHG emissions. Well reality has set in and welcome to the new decade of GHG MRR. We wanted to boil down the 700+ pages of the regulation into some quick guidelines and steps that you should be taking immediately to begin compliance with this rule which takes affect January 1, 2010. In this issue we will review applicability of the rule and discuss some of the potential ways to measure and report GHG emissions.

Our CEMS division has been working closely with some of our cement and power clients affected by the rule with installations and upgrades to provide CEMS reporting of CO₂. Many of you have CEMS or may be required to install or upgrade CEMS for GHG emissions monitoring. In our next issue, we will sit down with George Marshall and Mark Johnson, Managers in our CEMS division to answer a few burning questions that our clients have been asking and to get their feedback on practical solutions being installed and harmonizing federal and state differences in CEMS data acquisition and reporting requirements. If you have questions or concerns not addressed here, please contact Bill, George or Mark at Avogadro Environmental for further assistance.

In October 2009, the USEPA published a Final Rule in the Federal Register (40 CFR Part 98) that requires certain source categories of GHG emissions to begin monitoring and reporting emissions of GHG starting January 1, 2010. Depending on the source category this ranges from using best available monitoring methodologies already available on up to and including real-time measurement using Continuous Emissions Monitoring Systems (CEMS). Understanding that not all sources required to use CEMS under the rule have sufficient systems in place, there are provisions that allow temporary use of emission factors and fuel measurement as surrogate approaches through the first quarter of 2010. Many stationary combustion sources must quickly make plans to install or upgrade CEMS to monitor CO₂ and possibly other GHG emissions.

Am I covered by the rule?

EPA has prepared a simple and easy to read series of fact sheets to help you understand what you need to do. The General Provisions Fact Sheet (EPA-430-F-09-006R) provides a road map to determine if you're covered. There are three basic categories:

Table 1 provides a listing of categories where GHG emissions reporting are required regardless of your PTE for GHG. This includes Avogadro Environmental client categories such as: electricity generation, ammonia manufacturing, cement production, petrochemical production, petroleum refineries, and specified municipal solid waste landfills.

Table 2 provides a listing of categories where GHG emissions reporting are required if you emit great than 25,000 metric tons or more of CO₂e in combined emissions from a variety of GHG emitting sources within your facility. This includes Avogadro Environmental client categories such as: ferro-alloy production, glass production, hydrogen production, iron and steel production, lead production, pulp and paper manufacturing, and zinc production

Table 3 provides a listing of stationary combustion sources that must be reported if you emit great than 25,000 metric tons or more of CO₂e in combined emissions from a variety of GHG emitting sources within your facility including: boilers, internal combustion engines, process heaters, and combustion turbines.

On the Maybe List for 2010: Electronics Manufacturing, Ethanol Production, Fluorinated GHG Production, Food Processing, Magnesium Production, Oil and Natural Gas Systems, Sulfur Hexafluoride (SF₆) from Electrical Equipment, Underground, Coal Mines, Industrial Landfills, Wastewater Treatment, and Suppliers of Coal.

What needs to be reported?

Your Annual GHG report must be submitted electronically to the EPA no later than March 31 of each calendar year for GHG emissions in the previous calendar year. EPA will notify the facility of any errors in the GHG report. Upon notification, the facility will have 45 days to report revisions.

The GHG report must include the following information:

- 1) Facility name and address
- 2) Year and months covered by the report
- 3) Date of submittal
- 4) **Facilities:** Annual emissions (excluding biogenic CO₂) aggregated for all GHG from all applicable source categories
- 5) **Facilities:** Annual emissions of biogenic CO₂ aggregated for all applicable source categories
- 6) **Facilities:** Annual biogenic CO₂, CO₂ (excluding biogenic CO₂) CH₄ N₂O and each fluorinated GHG emissions from each applicable source category
- 7) **Facilities:** Emissions and other data for individual units, processes, activities, operations and any other data specified in Data Reporting Requirements
- 8) **Suppliers:** Annual quantities that would be emitted from combustion or usage
- 9) **Suppliers:** Total quantity of GHG aggregated for all GHG from all applicable supply categories.
- 10) **Suppliers:** Quantity of each GHG from each applicable supply category.

- 11) **Suppliers:** Any other data specified in Data Reporting Requirements.
- 12) If the emission calculations are change, a written explanation explaining why the calculations were changed.
- 13) Description of best available monitoring method.
- 14) Report each data element for which a mission data procedure was used
- 15) Signed certification by the designated representative

What about 2010?

From January 1st through March 31st 2010, owners and operators may use best available monitoring methods for any parameter that cannot reasonably be measured according to the monitoring and QA/QC requirements of a relevant GHG reporting rule subpart. However starting April 1, 2010 the owner/operators must discontinue their best available monitoring methods and begin following all applicable monitoring and QA/QC requirements of the GHG reporting rule. Extensions may be requested. All requests must be submitted to EPA no later than 30 days after the GHG reporting rule goes into effect.

For existing facilities in operation on January 1, 2010: Facilities containing only general stationary fuel combustion sources may submit an abbreviated emissions report. The abbreviated emissions report must be submitted by March 1, 2011.

All affected sources are required to develop and implement a GHG monitoring plan.

The GHG monitoring Plan may rely on references to existing corporate documents. The written GHG Monitoring Plan must include the following:

1. Identification of personnel/positions responsible for collection of emissions data.
2. Explanation of processes and methods used to collect the necessary data for the GHG calculations.
3. Description of the procedures and methods that are used for quality assurance, maintenance and repair of all continuous monitoring systems, flow meters and other instrumentation used to provide data for the GHG reports.

This plan should be in place on the effective date of the rule, January 1, 2010.

An Example: Stationary Combustion Sources

Subpart C of the rule, for emissions from Stationary Combustion Facilities, illustrates the range of methods considered acceptable for different source categories to demonstrate GHG measurement and reporting.

Stationary Combustion Sources must calculate CO₂ emissions using one of four methodological tiers, subject to certain restrictions based on unit size and fuel burned:

- Tier 1 uses an emission factor that is multiplied by annual fuel use and a default heating value for that fuel.

- Tier 2 uses an emission factor that is multiplied by annual fuel use and a measured heating value of that fuel. Units that combust MSW or other solid fuels and generate steam must use steam production (in place of fuel use) and an emission factor.
- Tier 3 uses a calculation based on annual fuel use and measured carbon content of that fuel. For this tier, calculate emissions only for fuels that contribute 10 percent or more of the annual heat input to the unit.
- Tier 4 requires a continuous emissions monitoring system (CEMS).

Combustion units that have certain types of existing CEMS in place and meet specific criteria are required to use the Tier 4 methodology. This might require certain upgrades to the existing CEMS in order to comply with the Tier 4 methodology. Those upgrades will depend on the fuel burned and the CEMS currently installed on a unit.

Combustion units that are subject to the reporting requirements under EPA's Acid Rain Program will continue to measure CO₂ mass emissions using the 40 CFR part 75 methods and must report CO₂ emissions by converting the cumulative fourth quarter CO₂ emissions from short tons to metric tons.

As an alternative to any of the four tier calculation methodologies, units that report to EPA year-round heat input data under 40 CFR Part 75, can calculate annual CO₂ emissions using Part 75 methods.