

Stationary Fuel Combustion Sources



Final Rule: Mandatory Reporting of Greenhouse Gases

Under the Mandatory Reporting of Greenhouse Gases (GHGs) rule, owners or operators of facilities that emit 25,000 metric tons or more of GHGs per year (expressed as carbon dioxide equivalents) from stationary fuel combustion or that meet any other applicability requirements of the rule (see information sheet on General Provisions) are required to report emissions from stationary fuel combustion. Owners or operators must collect emission data; calculate GHG emissions; and follow the specified procedures for quality assurance, missing data, recordkeeping, and reporting.

How Is This Source Category Defined?

Stationary fuel combustion sources are devices that combust any solid, liquid, or gaseous fuel generally to:

- Produce electricity, steam, useful heat, or energy for industrial, commercial, or institutional use; or
- Reduce the volume of waste by removing combustible matter.

These devices include, but are not limited to, boilers, combustion turbines, engines, incinerators, and process heaters. The rule excludes flares (unless otherwise required by another subpart), portable equipment, and emergency generators, emergency equipment, agricultural irrigation pumps, and combustion of hazardous waste (except for co-fired fuels).

Facilities that contain stationary fuel combustion units, but do not contain a source in any other source category covered by the rule, are not required to submit a report if their aggregate maximum rated heat input capacity from all stationary fuel combustion units is less than 30 million British thermal units per hour (mmBtu/hr).

Electricity generating units that are subject to EPA's Acid Rain Program (40 CFR part 75) or that report CO₂ emissions year-round through part 75 are covered under 40 CFR part 98, subpart D (Electricity Generation).

What GHGs Must Be Reported?

Facilities must report annual carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) emissions from each fuel combustion unit. For each unit, CO₂, CH₄, and N₂O emissions must be reported separately for each type of fuel combusted, including biomass fuels. In addition, facilities report any CO₂ emissions from sorbent use in air pollution control equipment.

How Should GHG Emissions Be Calculated?

The following methodologies can be used to calculate CO₂, CH₄, and N₂O emissions:

- Calculating CO₂ Emissions from Combustion
Facilities must calculate CO₂ emissions using one of four methodological tiers, subject to certain restrictions based on unit size and fuel burned (see flow chart on page 3):
 - 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 emission monitoring system (CEMS).

In general, reporters are required to calculate GHG emissions only for specific fuels that are listed in the rule, except that units larger than 250 mmBtu/hr also must calculate GHG emissions for any fuel that provides 10 percent or more of the annual heat input to the unit.

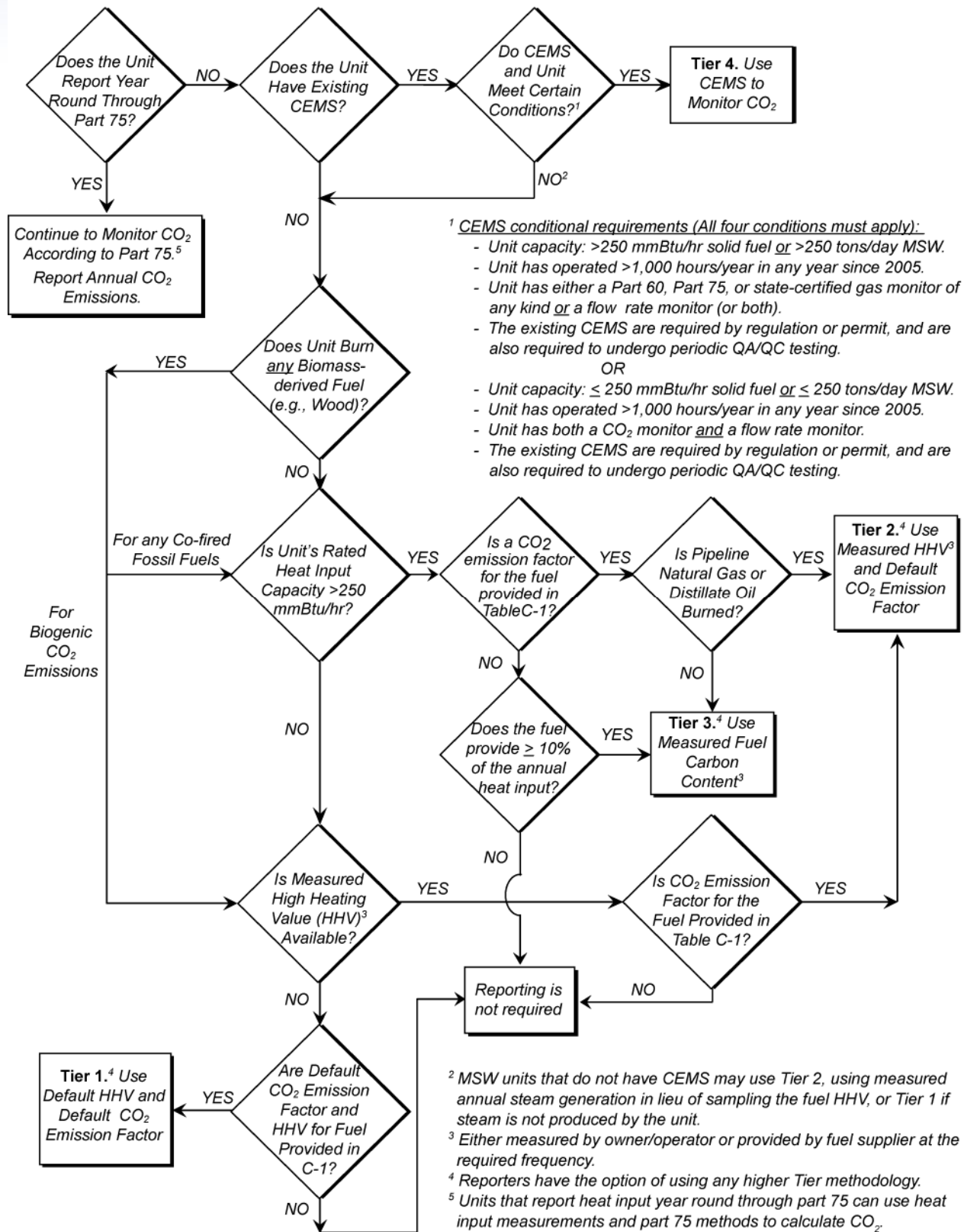
- Calculating CO₂ for units with existing CEMS
 - Combustion units that have certain types of existing CEMS in place and meet specific criteria are required to use the Tier 4 methodology. This might require certain upgrades to the existing CEMS in order to comply with the Tier 4 methodology. Those upgrades 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.
- Calculating N₂O and CH₄ Emissions From Combustion
Most units can use an emission factor that is based on annual fuel use and the high heat value of fuel (using a default value prescribed in the rule if a measured heat value is not available). Units covered under EPA's Acid Rain Program and other units that monitor and report annual heat input under 40 CFR part 75 requirements will use an emission factor and the measured annual heat input.
- Calculating CO₂ Emissions From Sorbent Use
Fluidized bed boilers and units equipped with a wet flue gas desulfurization system or sorbent injection will use the calculation procedure provided in the rule to estimate CO₂ emissions from sorbent use.
- Calculating Biogenic CO₂ Emissions From Biomass Fuel Combustion
Facilities must estimate CO₂ emissions from the combustion of the biomass fuels listed in the rule. Emissions are estimated by using the Tier 1 Calculation Methodology described above. For units that combust municipal solid waste or pre-mixed biomass fuels, the rule provides methods for calculating the biomass portion of CO₂ emissions.

What Measurements are Required?

Required measurements are determined as follows:

- Annual fuel use can be determined either by use of company records (e.g., billing data, steam generation, unit operating hours) or by direct measurement using flow meters, depending on the size of the unit and the type of fuel burned.
- Depending on the tier calculation method used and the fuel burned, reporters could be required to measure high heating value, molecular weight, or carbon content of fuel. Fuel sampling and analysis must be conducted daily, weekly, monthly, quarterly, semi-annually, or by lot depending on the fuel burned.

General Stationary Fuel Combustion Requirements for CO₂ 40 CFR 98 Subpart C



What Information Must Be Reported?

In addition to the information required by the General Provisions at 40 CFR 98.3(c), the final rule calls for facilities to report the following information:

- Annual mass emissions for each GHG for each combustion unit. Emissions can be reported as the aggregated mass among multiple units under any of the three the following conditions:
 - Groups of units, if each unit has a maximum rated heat input capacity of 250 mmBtu/hr or less.
 - Units that share a common stack and use CEMS.
 - Oil-fired or gas-fired units that combust the same fuel, if the fuel is fed through a metered common pipe.
- All measured inputs used in the emissions calculations (e.g., fuel use, carbon content, heating value) and all certification tests and major quality assurance tests for units using CEMS.

Existing facilities that are required to report emissions from stationary combustion sources only (and no other source categories) can submit an abbreviated emissions report using simplified calculation methods for reporting year 2010 only.

For More Information

This document is provided solely for informational purposes. It does not provide legal advice, have legally binding effect, or expressly or implicitly create, expand, or limit any legal rights, obligations, responsibilities, expectations, or benefits in regard to any person. The series of information sheets is intended to assist reporting facilities/owners in understanding key provisions of the final rule.

Visit EPA's Web site (www.epa.gov/climatechange/emissions/ghgrulemaking.html) for more information, including the final preamble and rule, additional information sheets on specific industries, the schedule for training sessions, and other documents and tools. For questions that cannot be answered through the Web site, please contact us at: ghgmrr@epa.gov.