

Electrical Equipment Manufacture or Refurbishment

Subpart SS, Greenhouse Gas Reporting Program

OVERVIEW

Subpart SS of the Greenhouse Gas Reporting Program (GHGRP) (40 CFR 98.450 – 98.458) applies to any facility that contains an electrical equipment manufacturing or refurbishing process that meets the Subpart SS source category definition. Some subparts have thresholds that determine applicability for reporting, and some do not. To decide whether your facility must report under this subpart, please refer to 40 CFR 98.451 and the [GHGRP Applicability Tool](#).

This Information Sheet is intended to help facilities reporting under Subpart SS understand how the source category is defined, what greenhouse gases (GHGs) must be reported, how GHG emissions must be calculated and shared with EPA, and where to find more information.



How is This Source Category Defined?

Electric equipment manufacturers and refurbishers include facilities that manufacture and/or refurbish gas-insulated substations, circuit breakers and other switchgear, gas-insulated lines, or power transformers (including gas-containing components of such equipment) that contain fluorinated greenhouse gases (GHGs), including but not limited to sulfur-hexafluoride (SF₆) and perfluorocarbons (PFCs). Covered processes include equipment testing, installation, manufacturing, decommissioning and disposal, refurbishing, and storage in gas cylinders and other containers.



What GHGs Must Be Reported?

Subpart SS requires electrical equipment manufacturers and refurbishers report to report emissions of each fluorinated GHG, including but not limited to SF₆ and PFCs, that is a component of a reportable insulating gas. Reportable insulating gas means an insulating gas whose weighted average global warming potential (GWP), as calculated in Equation SS-2 to 40 CFR 98.452, is greater than one. In addition, electrical equipment manufacturers and refurbishers are required to report certain quantities of insulating gases whose weighted average GWPs are less than or equal to one as specified in 40 CFR 98.456(f), (g), (k) and (q) through (s). Emissions to be reported include:

- Emissions from electrical equipment manufacturing.
- Emissions from electrical equipment refurbishing.
- Emissions from electrical equipment testing.
- Emissions from electrical equipment decommissioning and disposal.
- Emissions from storage cylinders and other containers.
- Emissions from electrical equipment installation that occur at an off-site electric power transmissions or distribution location before title to the equipment is transferred to the customer.

In addition, each facility is required to report carbon dioxide (CO₂), nitrous oxide (N₂O), and methane (CH₄) emissions from each stationary combustion unit on site by following the requirements of Subpart C (General

Stationary Fuel Combustion Sources), found at 40 CFR 98.30 – 98.38.

If multiple Greenhouse Gas Reporting Program (GHGRP) source categories are co-located at a facility, the facility may also need to report greenhouse gas (GHG) emissions under a different subpart. Please refer to the relevant information sheet for a summary of the rule requirements for any other source categories located at the facility.



How Must GHG Emissions Be Calculated?

In addition to the information required by the General Provisions in Subpart A, found at 40 CFR 98.3(c), each owner or operator of electric power systems must calculate the annual emissions of each fluorinated GHG that is a component of any reportable insulating gas using a mass-balance approach in Equation SS-3:

$$\text{User Emissions}_i = \sum_j \text{GHG}_{i,w} * [(\text{Decrease in Inventory of Reportable Insulating Gas } j \text{ Inventory}) + (\text{Acquisitions of Reportable Insulating Gas } j) - (\text{Disbursements of Reportable Insulating Gas } j)]$$

User Emissions_i. Annual emissions of each fluorinated GHG *i* from the facility (pounds (lbs)).

GHG_{i,w}. The weight fraction of fluorinated GHG *i* in reportable insulating gas *j* if reportable insulating gas *j* is a gas mixture, expressed as a decimal fraction. If fluorinated GHG *i* is not part of a gas mixture, use a value of 1.0

Decrease in Inventory of Reportable Insulating Gas *j* Inventory. The difference between the following:

- Reportable insulating gas *j* stored in containers at the beginning of the year (lbs); and
- Reportable insulating gas *j* stored in containers at the end of the year (lbs).

Acquisitions of Reportable Insulating Gas *j*. The sum of the following:

- Reportable insulating gas *j* purchased from chemical producers or suppliers in bulk (lbs);
- Reportable insulating gas *j* returned by equipment users (lbs); and
- Reportable insulating gas *j* returned to site after off-site recycling (lbs).

Disbursements of Reportable Insulating Gas *j* Inventory. The sum of the following:

- Reportable insulating gas *j* contained in new equipment delivered to customers (lbs);
- Reportable insulating gas *j* delivered to equipment users in containers (lbs);
- Reportable insulating gas *j* returned to suppliers (lbs);
- Reportable insulating gas *j* sent off-site for recycling (lbs); and
- Reportable insulating gas *j* sent off-site for destruction (lbs).

Emissions of fluorinated GHGs from the equipment being installed on the electric power system's premises must also be calculated (when the installation occurs before the title to the equipment is transferred to the electric power entity) using a mass-balance equation.

A checklist for data that must be monitored is available here: [Subpart SS Monitoring Checklist](#).



What Information Must Be Reported?

In addition to the information required by the General Provisions in Subpart A, found at 40 CFR 98.3(c), the following must be reported:

- Pounds of each reportable insulating gas stored in containers at the beginning of the year.

- Pounds of each reportable insulating gas stored in containers at the end of the year.
- Pounds of each reportable insulating gas sent off-site to be recycled.
- Pounds of each reportable insulating gas purchased in bulk.
- Pounds of each reportable insulating gas returned by equipment users with or inside equipment.
- Pounds of each reportable insulating gas returned to site from off-site after recycling.
- Pounds of each insulating gas inside new equipment delivered to customers.
- Pounds of each insulating gas delivered to equipment users in containers.
- Pounds of each insulating gas returned to suppliers.
- Pounds of each reportable insulating gas sent off site for destruction.
- The nameplate capacity of new equipment (pounds (lbs)) delivered to customers with each insulating gas inside, if different from the quantity of each reportable insulating gas inside equipment delivered to customers.
- A description of the engineering methods and calculations used to determine emissions from hoses or other flow lines that connect the container to the equipment that is being filled.
- The values for EF_{ci} of Equation SS-7 for each hose and valve combination and the associated valve fitting sizes and hose diameters.
- The total number of fill operations for each hose and valve combination, or, FC_i of Equation SS-7.
- If the mass of each reportable insulating gas disbursed to customers in new equipment over the period p is determined according to the methods required in 40 CFR 98.453(h), report the number of samples and the upper and lower bounds on the 95% confidence interval for each make, model, and group of conditions.
- Pounds of each insulating gas used to fill equipment at off-site electric power transmission or distribution locations, or MF , of Equation SS-8.
- Pounds of each insulating gas used to charge the equipment prior to leaving the electrical equipment manufacturer or refurbishment facility, or MC , of Equation SS-8.
- The nameplate capacity of the equipment (lbs) installed at off-site electric power transmission or distribution locations used to determine emissions from installation, or N_i , of Equation SS-8.
- For any missing data, report the reason the data were missing, the parameters for which the data were missing, the substitute parameters used to estimate emissions in their absence, and the quantity of emissions thereby estimated.
- For each insulating gas reported in 40 CFR 98.456(a) through (j) and (o) through (r), and ID number or other appropriate descriptor unique to that insulating gas.
- For each ID number or descriptor reported for each unique insulating gas, the name (as required in 40 CFR 98.3(c)(4)(iii)(G)(1)) and weight percent of each fluorinated gas in the insulating gas.



What Records Must Be Maintained?

Reporters are required to retain records that pertain to their annual GHGRP report for at least three years after the date the report is submitted. Please see the [Subpart A Information Sheet](#) and 40 CFR 98.3(g) for general recordkeeping requirements. Specific recordkeeping requirements for Subpart SS are listed at 40 CFR 98.457.



When and How Must Reports Be Submitted?

Reporters must submit their annual GHGRP reports for the previous calendar year to the EPA by March 31st, unless the 31st falls on a Saturday, Sunday, or federal holiday, in which case reports are due on the next business day. Annual reports must be submitted electronically using the [electronic Greenhouse Gas Reporting Tool \(e-GGRT\)](#), the GHGRP's online reporting system.

Additional information on setting up user accounts, registering a facility, and submitting annual reports is available on the [GHGRP Help webpage](#).



When Can a Facility Stop Reporting?

A facility may discontinue reporting under several scenarios, which are summarized in Subpart A (found at 40 CFR 98.2(i)) and the [Subpart A Information Sheet](#).



For More Information

For additional information on Subpart SS, please visit the [Subpart SS webpage](#). For additional information on the GHGRP, please visit the [GHGRP website](#), which includes additional information sheets, [data](#) previously reported to the GHGRP, [training materials](#), and links to Frequently Asked Questions ([FAQs](#)). For questions that cannot be answered through the GHGRP website, please contact us at: GHGreporting@epa.gov.

This Information Sheet is provided solely for informational purposes. It does not replace the need to read and comply with the regulatory text contained in the rule. Rather, it is intended to help reporting facilities and suppliers understand key provisions of the GHGRP. It does not provide legal advice; have a legally binding effect; or expressly or implicitly create, expand, or limit any legal rights, obligations, responsibilities, expectations, or benefits with regard to any person or entity.