

Greenhouse Gas Reporting Program (GHGRP)

The Greenhouse Gas Reporting Program (GHGRP) is legally regulated in [40 CFR Part 98 – Mandatory Greenhouse Gas Reporting](#) and requires reporting of greenhouse gas (GHG) data and other relevant information from large GHG emission sources, fuel and industrial gas suppliers, and CO₂ injection sites in the United States. Approximately 8,000 facilities are required to report their emissions annually, and the reported data are made available to the public in October of each year.

Under the GHGRP rule, owners or operators of electronics manufacturing facilities (as defined below) that emit equal to or greater than 25,000 metric tons of carbon dioxide equivalent per year from fluorinated GHGs and nitrous oxide (N₂O) emissions from cleaning and etching processes, heat transfer fluid use, and other source categories from stationary combustion facilities) must report fluorinated greenhouse gas emissions from all electronics manufacturing processes and any other source categories located at the facility for which methods are defined in the rule. Owners and operators are required to collect emission data; calculate GHG emissions; and follow the specified procedures for quality assurance, missing data, recordkeeping, and reporting per the requirements of [40 CFR Part 98 Subpart I – Electronics Manufacturing](#).

Under 40 CFR Part 98 Subpart I – Electronics Manufacturing, the electronics manufacturing category consists of facilities engaged in any of the following electronics manufacturing production processes:

- Processes in which etching uses plasma-generated fluorine atoms and other reactive fluorine containing fragments, which chemically react with exposed thin-films (e.g., dielectric, metals) or substrate (e.g., silicon) to selectively remove portions of material;
- Processes in which chambers used for depositing thin films are cleaned periodically using plasma-generated fluorine atoms and other reactive fluorine-containing fragments from fluorinated and other gases;
- Processes in which wafers are cleaned using plasma generated fluorine atoms or other reactive fluorine-containing fragments to remove residual material from wafer surfaces, including the wafer edge;
- Processes in which the chemical vapor deposition process or other production processes use N₂O;
- Processes in which fluorinated GHGs are used as heat transfer fluids (HTF) to cool process equipment, to control temperature during device testing, to clean substrate surfaces and other parts, and for soldering (e.g., vapor phase reflow).

Facilities that use these processes include, but are not limited to those that manufacture micro-electromechanical systems (MEMS), liquid crystal displays (LCDs), photovoltaic cells (PV), and semiconductors (including light-emitting diodes).