



## **e-GGRT Training Webinar**

Reporting of GHG Data for Subpart I – RY 2014  
Electronics Manufacturing

U.S. Environmental Protection Agency  
Greenhouse Gas Reporting Program (GHGRP)



**This training is provided by EPA 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.**



## Subpart I Reporting

- Background on rule changes
- Change from Excel form to Web form
- How to access/add a Subpart I module to your e-GGRT account
- Entering Data into the Subpart I Web form
- Generating, certifying, and submitting reports
- Where to get help

## Not covered in Today's Webinar



- How to register a new facility
- How to manage an account (e.g., editing facility profiles, appointing DRs/ADRs)
- How to register new agents
- How to report GHG emissions for other applicable subparts (e.g., subpart C)

For help with these and other topics, see the e-GGRT Help Site at <http://www.ccdsupport.com>

## Topics for Today's Q & A



- During the webinar, please submit only questions regarding how to use e-GGRT to report GHG emissions under Subpart I.
- Questions on other topics (requirements of the Greenhouse Gas Reporting Rule, legal issues, etc.) should be submitted to [GHGReporting@epa.gov](mailto:GHGReporting@epa.gov)

# Background & Rule Changes for 2014



- E-GGRT reflects the calculation methods, reporting, and recordkeeping requirements from the 2013 subpart I rule amendments (77 FR 68162, published November 13, 2013)
  - Revised methods for calculating GHG emissions
  - Revised reported data elements
- Final rule amendments became effective for all reporters on January 1, 2014.
  - Calculations for RY 2014 should reflect rule changes
  - Do not use the previous version of the Calculation Tool for RY 2014
  - Use the earlier spreadsheet based reporting form for resubmitting reports for 2011 to 2013.

# Background & Rule Changes for 2014



- E-GGRT also reflects changes from the 2014 rule “Addition of GWPs to the General Provisions and Amendments and Confidentiality Determinations for Fluorinated Gas Production” (79 FR 73750, December 11, 2014 and 79 FR 77391, December 24, 2014)
  - Added ~100 chemical-specific GWPs for certain F-GHGs and F-HTFs to Table A-1
  - Added default GWPs for F-GHGs and F-HTF based on the F-GHG group
  - Made conforming changes to subpart I where a default GWP of 2000 was previously defined for certain F-GHGs not in Table A-1

## Confidential Business Information



- Confidential data elements in e-GGRT reflect requirements from the 2013 subpart I rule amendments
- Data elements that have been determined to be CBI and those that have no determination must be reported
- Reporting elements that have been determined to be CBI will be protected under the Clean Air Act (Sec. 114(c)) and EPA regulations (40 CFR Part 2)
- Subpart I data elements that are CBI are highlighted in e-GGRT



## Reporting of subpart I GHG data:

- Step 1: Accessing the subpart I reporting module to your facility profile in e-GGRT and accessing the Web form.
- Step 2: Enter required facility-specific and fab-specific data into the Web form.
- Step 3: Enter GHG emissions data into the Web form.
- Step 4: Review and correct validation errors.
- Step 5: Generate, certify, and submit annual report.

# Step 1: How to Access the Subpart I Module



Click the "DATA REPORTING" tab to enter GHG data

**e-GGRT Greenhouse Gas Data Reporting (2014)**  
Select Facility

**ANNUAL GHG DATA REPORTING**  
You must select a facility to begin using any Data Reporting features, which include: Specifying which subparts the facility will be reporting, entering or updating corporate parent information (subpart A), entering GHG data and viewing validation reports, and lastly, preparing and submitting the Annual Report to EPA.

REPORTING YEAR: 2014 GO

**FACILITIES REPORTING for 2014**

GHGRP ID	Facility or Supplier	Annual Report Status	Facility Overview
527457	DeGabriele Facility (McLean, VA)	Not generated	OPEN
527478	DeGabriele Facility 2 (McLEAN, VA)	Not generated	OPEN

**FACILITIES NOT REPORTING for 2014**

GHGRP ID	Facility or Supplier	Not Reporting Reason
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Select the correct facility from your list of REGISTERED FACILITIES

# Step 1: How to Access the Subpart I Module



**EPA** United States Environmental Protection Agency

**e-GGRT** Electronic Greenhouse Gas Reporting Tool

HOME FACILITY REGISTRATION FACILITY MANAGEMENT DATA REPORTING

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**EPA Test Fac**  
**e-GGRT Greenhouse Gas Data Reporting (2014)**  
Select Facility » [Facility or Supplier Overview](#)

**FACILITY OR SUPPLIER OVERVIEW**  
This page allows you to add the source and/or supplier categories for which your facility or supplier will be reporting, then to access those data reporting screens using the OPEN buttons.

After data reporting is complete, you can initiate the annual report review and submission process from this page by using the SUBMIT button (or RESUBMIT for subsequent submissions if needed).

**Facility's GHG Reporting Method:** Data entry via e-GGRT web-forms ([Change](#))

**The Annual Report has already been prepared.** Any changes you make to report data will not be reflected in that version. After making changes to report data you must choose GENERATE/RESUBMIT below, then click GENERATE REPORT for those changes to be included in an updated version of the Annual Report.

**REPORT DATA**

2014 Reporting Source or Supplier Category	Validation Messages?	Subpart Reporting
Subpart A—General Information	None	<a href="#">OPEN</a>
Subpart I—Electronics Manufacturing	<a href="#">View Messages</a>	<a href="#">OPEN</a>

[+ ADD or REMOVE Subparts](#)

If all subparts are completed and Validation Messages addressed to your satisfaction, you are ready to prepare and submit an Annual Report.

**SUBMIT ANNUAL REPORT**

Report	Uploaded File Name	Status	Submitted Date	Certification Date
2014 Annual Report v1		Generated with errors		

1,345,509.3  
CO2 equivalent emissions from facility subparts C-II, SS, and TT (metric tons)

0.0  
Biogenic CO2 emissions from facility subparts C-II, SS, and TT (metric tons)

0.0  
CO2 equivalent emissions from supplier subparts LL-QQ (metric tons)

[VIEW GHG DETAILS](#)

Click "OPEN" to access the subpart I module

Click "ADD or REMOVE Subparts" if needed

# Step 1: How to Add A Subpart I Module





United States Environmental Protection Agency



Electronic Greenhouse Gas Reporting Tool

HOME FACILITY REGISTRATION FACILITY MANAGEMENT DATA REPORTING

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[e-GGRT Help](#)

How to add a subpart and report data

### McKittrick\_Test

## e-GGRT Greenhouse Gas Data Reporting (2014)

Select Facility » Facility Overview » **Subpart Selection**

#### SUBPART SELECTION

Please check all relevant subparts for this facility or supplier. Further information can be found in the e-GGRT Help links to the left.

<h4>FACILITY SUBPARTS</h4> <ul style="list-style-type: none"><li><input type="checkbox"/> <b>D—Electricity Generation</b> Description ( <a href="#">SHOW</a>   <a href="#">HIDE</a> )</li><li><input type="checkbox"/> <b>E—Adipic Acid Production</b> Description ( <a href="#">SHOW</a>   <a href="#">HIDE</a> )</li><li><input type="checkbox"/> <b>F—Aluminum Production</b> Description ( <a href="#">SHOW</a>   <a href="#">HIDE</a> )</li><li><input type="checkbox"/> <b>G—Ammonia Manufacturing</b> Description ( <a href="#">SHOW</a>   <a href="#">HIDE</a> )</li><li><input type="checkbox"/> <b>H—Cement Production</b> Description ( <a href="#">SHOW</a>   <a href="#">HIDE</a> )</li><li><input checked="" type="checkbox"/> <b>I—Electronics Manufacturing</b> Description ( <a href="#">SHOW</a>   <a href="#">HIDE</a> )</li><li><input type="checkbox"/> <b>K—Ferroalloy Production</b> Description ( <a href="#">SHOW</a>   <a href="#">HIDE</a> )</li><li><input type="checkbox"/> <b>L—Fluorinated Gas Production</b> Description ( <a href="#">SHOW</a>   <a href="#">HIDE</a> )</li><li><input type="checkbox"/> <b>N—Glass Production</b> Description ( <a href="#">SHOW</a>   <a href="#">HIDE</a> )</li></ul>	<h4>-GENERAL STATIONARY FUEL COMBUSTION</h4> <ul style="list-style-type: none"><li><input type="checkbox"/> <b>C—General Stationary Fuel Combustion (Standard Reporting)</b> Description ( <a href="#">SHOW</a>   <a href="#">HIDE</a> )</li></ul> <h4>-LANDFILL SUBPARTS</h4> <ul style="list-style-type: none"><li><input type="checkbox"/> <b>HH—Municipal Solid Waste Landfills</b> Description ( <a href="#">SHOW</a>   <a href="#">HIDE</a> )</li><li><input type="checkbox"/> <b>TT—Industrial Waste Landfills</b> Description ( <a href="#">SHOW</a>   <a href="#">HIDE</a> )</li></ul> <h4>-SUPPLIER SUBPARTS</h4> <ul style="list-style-type: none"><li><b>LL—Suppliers of Coal-based Liquid Fuels</b> Description ( <a href="#">SHOW</a>   <a href="#">HIDE</a> )</li><li><b>MM—Suppliers of Petroleum Products</b> Description ( <a href="#">SHOW</a>   <a href="#">HIDE</a> )</li><li><input type="checkbox"/> <b>NN—Suppliers of Natural Gas and Natural Gas Liquids</b> Description ( <a href="#">SHOW</a>   <a href="#">HIDE</a> )</li><li><input type="checkbox"/> <b>OO—Suppliers of Industrial Greenhouse Gases</b> Description ( <a href="#">SHOW</a>   <a href="#">HIDE</a> )</li></ul>
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# Step 1: How to Access the Subpart I Module



United States  
Environmental Protection  
Agency

Electronic Greenhouse Gas  
Reporting Tool

HOME
FACILITY REGISTRATION
FACILITY MANAGEMENT
DATA REPORTING

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? e-GGRT Help

- ▶ How to add a subpart and report data
- ▶ General reporting information
- ▶ How to submit an annual report

## DeGabriele Facility 2

### e-GGRT Greenhouse Gas Data Reporting (2014)

[Select Facility](#) » [Facility or Supplier Overview](#)

**FACILITY OR SUPPLIER OVERVIEW**

This page allows you to add the source and/or supplier categories for which your facility or supplier will be reporting, then to access those data reporting screens using the OPEN buttons.

After data reporting is complete, you can initiate the annual report review and submission process from this page by using the SUBMIT button (or RESUBMIT for subsequent submissions if needed).

**Facility's GHG Reporting Method:** Data entry via e-GGRT web-forms ([Change](#))

**REPORT DATA**

2014 Reporting Source or Supplier Category	Validation Messages?	Subpart Reporting
Subpart A—General Information	None	<a href="#">OPEN</a>
Subpart I—Electronics Manufacturing	<a href="#">View Messages</a>	<a href="#">OPEN</a>
Subpart LL—Suppliers of Coal Based Liquids Fuels	None	<a href="#">OPEN</a>

[+](#) ADD or REMOVE Subparts

141,571,291,962.3

CO<sub>2</sub> equivalent emissions from facility subparts C-II, SS, and TT (metric tons)

0.0

Biogenic CO<sub>2</sub> emissions from facility subparts C-II, SS, and TT (metric tons)

236,459.0

CO<sub>2</sub> equivalent emissions from supplier subparts LL-QQ (metric tons)

[VIEW GHG DETAILS](#)

**Note:** If you have deferred prior year data to be reported with your RY2014 Annual Report, please [Click Here](#).

If all subparts are completed and Validation Messages addressed to your satisfaction, you are ready to prepare and submit an Annual Report.

**SUBMIT ANNUAL REPORT**

Report	Uploaded File Name	Status	Submitted Date	Certification Date

[REPORT SUBMISSION](#)



# Step 2: Completing Subpart I Web Form – Facility Overview



## Subpart I: Electronics Manufacturing (2014)

### Subpart Overview

#### OVERVIEW OF SUBPART REPORTING REQUIREMENTS

This page provides an overview of the subpart I facilities for which you are reporting. This page is divided into three sections. The first section "Abatement System Supplier Documentation" is used to append files to your annual report for DRE certifications from the suppliers for abatement systems. Click on "Add an Attachment" to upload a file from your computer. The next section is for entering detailed information for each fab at your facility by clicking on "ADD a FAB". Use the blue "OPEN" button under "Emissions" for each fab to enter the data required for each fab at your facility. The emissions summary section is for the Subpart I emissions by GHG.

1) Uploading supporting documents

Subpart I: No Validation Messages

3) For entering emissions data for each fab

#### SUPPLIER DOCUMENTATION (for abatement systems)

Uploaded File Name	Attached By	Date	Delete
DRE Information.docx	Amanda Baynham	February 4, 2015	

ADD an Attachment

#### FABS

Unique Name/Identifier	Status <sup>1</sup>	Emissions	Delete
Fab 3 - LCD Default	Complete		
Fab 4 - LCD Stack	Complete		
Fab 1 - Semi - Default			
Fab 2 - Semi Stack Test			

2) Entering additional reporting requirements for each Fab

ADD a FAB

#### EMISSIONS SUMMARY

GHG Name	CAS Number	Total Emissions (metric tons)	Rounded Total Emissions (metric tons)
FC-77 (Blend - Perfluoro-2-butyltetrahydrofuran + C8F18)	335-36-4, 307-34-6	0.02	0.02
FC-770 (Perfluoroisopropylmorpholine)	1093615-61-2	0.08	0.08

Overview of emissions

# Step 2: Completing Subpart I Web Form – Adding a Fab



e-GGRT Help

Redaction Script Test Facility 2

## Subpart I: Electronics Manufacturing (2014)

[Subpart Overview](#) » [Fab](#)

### ADD/EDIT FAB INFORMATION

This page is used to identify detailed information for each fab. You will use this page to enter general information for the fab, and also as the starting point to open separate pages for entering information for the F-GHGs, N<sub>2</sub>O, and F-HTFs emitted from the fab, the abatement systems used at the fab, and the stack systems at the fab. Depending on the product manufactured, the method used to calculate F-GHG emissions for the fab, and whether abatement systems are used, this page will refresh to indicate the data elements you are required to report. Note that you must enter a value in each field indicated with a red asterisk.

\* denotes a required field

#### FAB INFORMATION

Unique Name/Identifier\*

Optional Description

What does the fab manufacture? [§98.96] \*

Method used to calculate f-GHG emissions for this fab from the plasma etch/wafer clean and chamber clean process types [§98.96(d)] \*  Default Emission Factors  Stack Testing Method

Does the fab have abatement systems (as defined in 98.98) through which F-GHG or N<sub>2</sub>O flow? \*  Yes  No

Is the fab claiming destruction or removal efficiency for those abatement systems (as defined in 98.98) at the fab? [§98.96(p)] \*  Yes  No

Method of reporting N<sub>2</sub>O emissions from chemical vapor deposition as calculated in Equation I-10 [§98.96(d)] \*  Did not use N<sub>2</sub>O in CVD processes  Used default utilization factor from Table I-8  Assumed that emissions are equal to consumption if annual usage less than 50 kg

Method of reporting N<sub>2</sub>O emissions from electronic manufacturing processes as calculated in Equation I-11 [§98.96(d)] \*  Did not use N<sub>2</sub>O in other electronics manufacturing processes  Used default utilization factor from Table I-8  Assumed that emissions are equal to consumption if annual usage less than 50 kg

SAVE

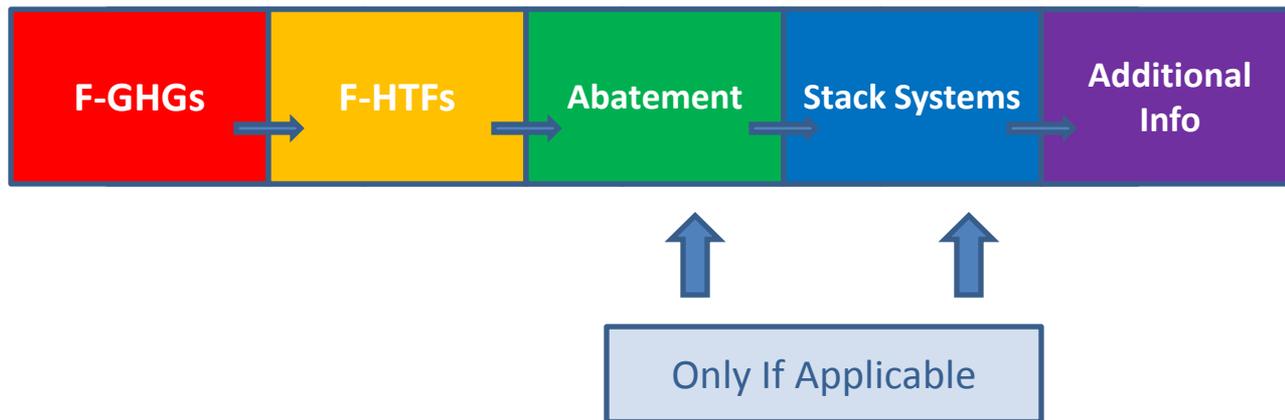
CANCEL

This question only appears when “yes” is selected above if you are using the Default EF Method

## Step 2: Completing Subpart I Web Form – Entering Fab Information - Overview



There are five main areas for which you must enter data in the “Fab Information” page.



# Step 2a: Completing Subpart I Web Form – Entering F-GHG from the Fab



Method of reporting N<sub>2</sub>O emissions from chemical vapor deposition as calculated in Equation I-10 [§98.96(d)] \*

Method of reporting N<sub>2</sub>O emissions from electronic manufacturing processes as calculated in Equation I-11 [§98.96(d)] \*

Did not use N<sub>2</sub>O in CVD processes  
 Used default utilization factor from Table I-8  
 Assumed that emissions are equal to consumption if annual usage is less than 50 kg

Did not use N<sub>2</sub>O in other electronics manufacturing processes  
 Used default utilization factor from Table I-8  
 Assumed that emissions are equal to consumption if annual usage is less than 50 kg

### 1.) Emitted Fluorinated Greenhouse gases

In this table, define all F-GHGs that must be reported for this fab. After the fab is completely defined you can use the OPEN button on the Subpart Overview to enter the related emissions information.

F-GHG   CAS No.	Process Type	Delete
No F-GHGs added.		
<a href="#">+ ADD a F-GHG</a>		

Click on "Add a F-GHG"

### 2.) Fluorinated Heat transfer fluids

In this table, define all F-HTFs that must be reported for this fab. After the fab is completely defined you can use the OPEN button on the Subpart Overview to enter the related emissions information.

F-HTF	Delete
No F-HTFs added.	
<a href="#">+ ADD or Remove F-HTFs to Report</a>	

### 3.) Abatement Systems

The number of abatement systems for each gas and process type combination, and the process types controlled by the abatement systems are considered CBI. **CBI**

Abatement System Name/Identifier	Delete
No abatement system added.	
<a href="#">+ ADD an Abatement System</a>	



# Step 2a: Entering F-GHGs from the Fab (Default EF Method, Semiconductor facilities)



## Subpart I: Electronics Manufacturing (2014)

[Subpart Overview](#) » [Fab](#) » [F-GHG](#)

### ADD/EDIT F-GHG INFORMATION

This page identifies the F-GHGs emitted from the fab. Use the drop-down list to select the F-GHG emitted from the plasma etch/wafer clean and chamber clean process types from the fab. (N2O and F-HTF are entered on other pages.) Select "Other F-GHG (specify)" if you are reporting an F-GHG that is not included in the drop down list (please review the CAS number and chemical formulas to be sure the F-GHG is not on the drop down list.) Click "SAVE" after entering the information for this F-GHG. Emissions data will be entered on a separate page.

\* denotes a required field

### FAB INFORMATION

Unique Name/Identifier	Fab 1 - Semi - Default
What does the fab manufacture?	Semiconductor
Method used to calculate f-GHG emissions	Default Emission Factors

### FLUORINATED GHG EMITTED

Flourinated Greenhouse Gas [98.96\* (c)(1)]

### Process Type(s) and Calculation Method(s)

In the table below, please select all the combinations of Process Type and Method of Emissions Calculation that are applicable to this F-GHG for this fab.

Process Type [98.96(c)(1)]	Method of Emissions Calculation [98.96(d)]
Chamber cleaning - in situ plasma	<input type="checkbox"/> Used default factors
	<input type="checkbox"/> Assumed utilization/by-product formation rates = 0
	<input type="checkbox"/> Assumed emissions are equal to consumption if annual usage is less than 50 kg
Chamber cleaning - remote plasma	<input type="checkbox"/> Used default factors
	<input type="checkbox"/> Assumed utilization/by-product formation rates = 0
	<input type="checkbox"/> Assumed emissions are equal to consumption if annual usage is less than 50 kg
Chamber cleaning - in situ thermal	<input type="checkbox"/> Used default factors
	<input type="checkbox"/> Assumed utilization/by-product formation rates = 0
	<input type="checkbox"/> Assumed emissions are equal to consumption if annual usage is less than 50 kg
Plasma etching / Wafer cleaning	<input type="checkbox"/> Used default factors
	<input type="checkbox"/> Assumed utilization/by-product formation rates = 0
	<input type="checkbox"/> Assumed emissions are equal to consumption if annual usage is less than 50 kg

Select a F-GHG from the drop-down list

Identify all process types and calculation methods used for each gas



Returns to "Fab Information" Page



# Step 2a: Entering F-GHG from the Fab (Default EF Method, LCD/PV/MEMs facilities)



## Subpart I: Electronics Manufacturing (2014)

Subpart Overview » Fab » F-GHG

### ADD/EDIT F-GHG INFORMATION

This page identifies the F-GHGs emitted from the fab. Use the drop-down list to select the F-GHG emitted from the plasma etch/wafer clean and chamber clean process types from the fab. (N<sub>2</sub>O and F-HTF are entered on other pages.) Select "Other F-GHG (specify)" if you are reporting an F-GHG that is not included in the drop down list (please review the CAS number and chemical formulas to be sure the F-GHG is not on the drop down list.) Click "SAVE" after entering the information for this F-GHG. Emissions data will be entered on a separate page.

\* denotes a required field

### FAB INFORMATION

Unique Name/Identifier	Fab 3 - LCD Default
What does the fab manufacture?	LCDsMEMsPVs
Method used to calculate f-GHG emissions	Default Emission Factors

### FLUORINATED GHG EMITTED

Flourinated Greenhouse Gas [98.96(c)(1)] \*

- Select
- HFC-23 (CHF<sub>3</sub>), CAS No. 75-46-7
- HFC-32 (CH<sub>2</sub>F<sub>2</sub>), CAS No. 75-10-5
- HFC-41 (CH<sub>3</sub>F), CAS No. 593-53-3
- Sulfur hexafluoride (SF<sub>6</sub>), CAS No. 2551-62-4
- Nitrogen trifluoride (NF<sub>3</sub>), CAS No. 7783-54-2
- PFC-14 (Perfluoromethane) (CF<sub>4</sub>), CAS No. 75-73-0
- PFC-116 (Perfluoroethane) (C<sub>2</sub>F<sub>6</sub>), CAS No. 76-16-4
- PFC-218 (Perfluoropropane) (C<sub>3</sub>F<sub>8</sub>), CAS No. 76-19-7
- Perfluorocyclobutane (C-C<sub>4</sub>F<sub>8</sub>), CAS No. 115-25-3
- PFC C-1418 (c-C<sub>5</sub>F<sub>8</sub>), CAS No. 559-40-0
- Perfluorobuta-1,3-diene (CF<sub>2</sub>=CFCF=CF<sub>2</sub>), CAS No. 685-63-2
- Octafluorotetrahydrofuran (C<sub>4</sub>F<sub>8</sub>O), CAS No. 773-14-8
- HFC-125 (C<sub>2</sub>HF<sub>5</sub>), CAS No. 354-33-6
- HFC-124 (C<sub>2</sub>H<sub>2</sub>FE<sub>3</sub>), CAS No. 811-97-2
- Other f-GHG (specify)

Process Type(s) and Calculation Method(s)

In the table below, please select all the calculation methods used for this f-GHG for this fab.

Process Type [98.96(c)(1)]	
Chamber cleaning	<input type="checkbox"/>
Plasma etching	<input checked="" type="checkbox"/>
NF <sub>3</sub> remote chamber cleaning	<input type="checkbox"/>

- Assumed emissions are equal to consumption if annual usage is less than 50 kg
- Used default factors
- Assumed utilization/by-product formation rates = 0
- Assumed emissions are equal to consumption if annual usage is less than 50 kg

SAVE CANCEL FAB ↑

Process types shown are for LCD/PV/MEMS facilities

Select if your F-GHG is not listed



# Step 2a: Entering F-GHGs from the Fab (Stack Testing Method, All Facilities)



**EPA** United States Environmental Protection Agency

**e-GGRT** Electronic Greenhouse Gas Reporting Tool

HOME FACILITY REGISTRATION FACILITY MANAGEMENT DATA REPORTING

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**EPA Test Fac**  
**Subpart I: Electronics Manufacturing (2014)**  
Subpart Overview » Fab » **F-GHG**

**ADD/EDIT F-GHG INFORMATION**  
This page identifies the F-GHGs emitted from the fab. Use the drop-down list to select the F-GHG emitted from the plasma etch/wafer clean and chamber clean process types from the fab. (N2O and F-HTF are entered on other pages.) Select "Other F-GHG (specify)" if you are reporting an F-GHG that is not included in the drop down list (please review the CAS number and chemical formulas to be sure the F-GHG is not on the drop down list.) Click "SAVE" after entering the information for this F-GHG. Emissions data will be entered on a separate page. \* denotes a required field

**FAB INFORMATION**

Unique Name/Identifier	LCD-Stack
What does the fab manufacture?	LCDsMEMsPVs
Method used to calculate f-GHG emissions	Stack Testing Method

**FLUORINATED GHG EMITTED**

Flourinated Greenhouse Gas \* [98.96(c)(1)]

**Process Type(s) and Calculation Method(s)**  
In the table below, please select the Method of Emissions Calculation that is applicable to this f-GHG for this fab. You must select only one method for each f-GHG per fab, either the stack system test method, or the method for intermittent low use gases. Do not select both!

Method of Emissions Calculation [98.96(d)]
<input type="checkbox"/> Stack system test method in 98.93(i)(3)
<input type="checkbox"/> Method for intermittent low use gases in 98.93(i)(4)(i)

**SAVE** **CANCEL** **FAB**

This page is the same for fabs manufacturing semiconductors and those manufacturing PV/LCD/MEMs.

Select a F-GHG from the drop-down list

Only **ONE** method may be selected for each gas.



# Step 2a: Entering Other F-GHGs from the Fab (Default Method, All Facilities)



**FLUORINATED GHG EMITTED**

Fluorinated Greenhouse Gas [98.96(c)(1)] \*

**SPECIFY OTHER GHG**

F-GHG Name [98.96(c)(1)] \*

Chemical Formula [98.96(c)(1)] \*

Chemical Abstract Registry Number (CAS No.) [98.96(c)(1)] \*

These fields must be populated for each "Other F-GHG" entered.

**Group to which this f-GHG belongs \***

F-GHG Group	GWP
<input type="radio"/> Fully fluorinated GHGs	10000
<input type="radio"/> Saturated hydrofluorocarbons (HFCs) with 2 or fewer carbon-hydrogen bonds	3700
<input type="radio"/> Saturated HFCs with 3 or more carbon-hydrogen bonds	930
<input type="radio"/> Saturated hydrofluoroethers (HFEs) and hydrochlorofluoroethers (HCFEs) with 1 carbon-hydrogen bond	5700
<input type="radio"/> Saturated HFEs and HCFEs with 2 carbon-hydrogen bonds	2600
<input type="radio"/> Saturated HFEs and HCFEs with 3 or more carbon-hydrogen bonds	270
<input type="radio"/> Fluorinated formates	350
<input type="radio"/> Fluorinated acetates, carbonofluoridates, and fluorinated alcohols other than fluorotelomer alcohols	30
<input type="radio"/> Unsaturated perfluorocarbons (PFCs), unsaturated HFCs, unsaturated hydrochlorofluorocarbons (HCFCs), unsaturated halogenated ethers, unsaturated halogenated esters, fluorinated aldehydes, and fluorinated ketones	1
<input type="radio"/> Fluorotelomer alcohols	1
<input type="radio"/> Fluorinated GHGs with carbon-iodine bond(s)	1
<input type="radio"/> Other fluorinated GHGs	2000

Select the appropriate F-GHG group for the F-GHG entered.

**Process Type(s) and Calculation Method(s)**

In the table below, please select all the combinations of Process Type and Method of Emissions Calculation that are applicable to this f-GHG for this fab.



# Step 2a: Entering Other F-GHGs from the Fab (Default Method, All Facilities)



**SCREEN ERRORS**

✖ You cannot add this greenhouse gas because the CAS Registry Number you have provided for this 'other' gas matches with an existing 40 CFR Part 98 Table A-1 gas, or it matches with an 'other' gas that has already been added. It is possible it is included in the selection list provided, but with a different chemical name than the one you are using. The gas with the matching CAS Registry Number is identified within e-GGRT as follows: CAS Registry Number: 354-33-6; Gas Name: HFC-125; Chemical Formula: C2HF5. If you would like to select this gas, click CANCEL and locate the gas on the selection list provided. If you are unable to locate this gas on the selection list provided, please contact the GHGRP Help Desk.

- FAB INFORMATION

Unique Name/Identifier	Fab 1 - Semi - Default
What does the fab manufacture?	Semiconductor
Method used to calculate f-GHG emissions	Default Emission Factors

- FLUORINATED GHG EMITTED

Flourinated Greenhouse Gas [98.96\*(c)(1)]

- SPECIFY OTHER GHG

F-GHG Name [98.96(c)(1)]\*

Chemical Formula [98.96(c)(1)]\*

Chemical Abstract Registry Number\* (CAS No.) [98.96(c)(1)]

Group to which this f-GHG belongs\*

F-GHG Group	GWP
<input type="radio"/> Fully fluorinated GHGs	10000
<input checked="" type="radio"/> Saturated hydrofluorocarbons (HFCs) with 2 or fewer carbon-hydrogen bonds	3700
<input type="radio"/> Saturated HFCs with 3 or more carbon-hydrogen bonds	930
<input type="radio"/> Saturated hydrofluoroethers (HFEs) and hydrochlorofluoroethers (HCFEs) with 1 carbon-hydrogen bond	5700
<input type="radio"/> Saturated HFEs and HCFEs with 2 carbon-hydrogen bonds	2600
<input type="radio"/> Saturated HFEs and HCFEs with 3 or more carbon-hydrogen bonds	970

Entering an F-GHG already included in the list triggers a screen error



# Step 2a: Entering Other F-GHGs from the Fab (Default Method, All Facilities)



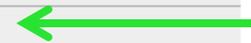
<input type="radio"/> Saturated HFEs and HCFEs with 2 carbon-hydrogen bonds	2600
<input type="radio"/> Saturated HFEs and HCFEs with 3 or more carbon-hydrogen bonds	270
<input type="radio"/> Fluorinated formates	350
<input type="radio"/> Fluorinated acetates, carbonofluoridates, and fluorinated alcohols other than fluorotelomer alcohols	30
<input type="radio"/> Unsaturated perfluorocarbons (PFCs), unsaturated HFCs, unsaturated hydrochlorofluorocarbons (HCFCs), unsaturated halogenated ethers, unsaturated halogenated esters, fluorinated aldehydes, and fluorinated ketones	1
<input type="radio"/> Fluorotelomer alcohols	1
<input type="radio"/> Fluorinated GHGs with carbon-iodine bond(s)	1
<input type="radio"/> Other fluorinated GHGs	2000

### Process Type(s) and Calculation Method(s)

In the table below, please select all the combinations of Process Type and Method of Emissions Calculation that are applicable to this f-GHG for this fab.

Process Type [98.96(c)(1)]	Method of Emissions Calculation [98.96(d)]
Chamber cleaning - in situ plasma	<input type="checkbox"/> Used default factors
	<input type="checkbox"/> Assumed utilization/by-product formation rates = 0
	<input type="checkbox"/> Assumed emissions are equal to consumption if annual usage is less than 50 kg
Chamber cleaning - remote plasma	<input type="checkbox"/> Used default factors
	<input type="checkbox"/> Assumed utilization/by-product formation rates = 0
	<input type="checkbox"/> Assumed emissions are equal to consumption if annual usage is less than 50 kg
Chamber cleaning - in situ thermal	<input type="checkbox"/> Used default factors
	<input type="checkbox"/> Assumed utilization/by-product formation rates = 0
	<input type="checkbox"/> Assumed emissions are equal to consumption if annual usage is less than 50 kg
Plasma etching / Wafer cleaning	<input type="checkbox"/> Used default factors
	<input type="checkbox"/> Assumed utilization/by-product formation rates = 0
	<input type="checkbox"/> Assumed emissions are equal to consumption if annual usage is less than 50 kg

Identify all process types and calculation methods used for the Other F-GHG



SAVE CANCEL FAB↑

# Step 2a: Completing Subpart I Web Form – Entering F-GHG from the Fab



## 1.) Emitted Fluorinated Greenhouse gases

In this table, define all F-GHGs that must be reported for this fab. After the fab is completely defined you can use the OPEN button on the Subpart Overview to enter the related emissions information.

F-GHG   CAS No.	Process Type	Delete
PFC-14 (Perfluoromethane)   75-73-0	Chamber cleaning - in situ plasma, Plasma etching / Wafer cleaning	
PFC-218 (Perfluoropropane)   76-19-7	Plasma etching / Wafer cleaning	
PFC-116 (Perfluoroethane)   76-16-4	Plasma etching / Wafer cleaning	

[+ ADD a F-GHG](#)

## 2.) Fluorinated Heat transfer fluids

In this table, define all F-HTFs that must be reported for this fab. After the fab is completely defined you can use the OPEN button on the Subpart Overview to enter the related emissions information.

F-HTF	Delete
No F-HTFs added.	

[+ ADD or Remove F-HTFs to Report](#)

## 3.) Abatement Systems

The number of abatement systems for each gas and process type combination, and the process types controlled by the abatement systems are considered CBI. **CBI**

Abatement System Name/Identifier	Delete
No abatement system added.	

[+ ADD an Abatement System](#)

## ADDITIONAL FAB INFORMATION

- What Is the Diameter of the Wafers Manufactured at this Fab? [§98.96(b)] (select all that apply)
- Greater than 300mm
  - 300mm
  - 200mm
  - 150mm
  - Less than 150mm

Annual Manufacturing Capacity at this Fab used  **CBI** (square meters)

To edit an F-GHG previously entered, click on the chemical name

F-GHGs entered incorrectly may be deleted here.

Click here to add F-HTFs



# Step 2b: Completing Subpart I Web Form – Adding F-HTFs from the Fab (All Facilities)



## FLOURINATED HEAT TRANSFER FLUIDS EMITTED AT THE FAB [§98.96(C)(4)]

- HFC-245fa (CHF<sub>2</sub>CH<sub>2</sub>CF<sub>3</sub>) , CAS No. 460-73-1
- HFC-365mfc (CH<sub>3</sub>CF<sub>2</sub>CH<sub>2</sub>CF<sub>3</sub>) , CAS No. 406-58-6
- HFC-43-10mee (CF<sub>3</sub>CFHCFHCF<sub>2</sub>CF<sub>3</sub>) , CAS No. 138495-42-8
- PFC-4-1-12 (Perfluoropentane) (C<sub>5</sub>F<sub>12</sub>) , CAS No. 678-26-2
- PFC-5-1-14 (Perfluorohexane) (C<sub>6</sub>F<sub>14</sub>) , CAS No. 355-42-0
- PFC-9-1-18 (C<sub>10</sub>F<sub>18</sub>) , CAS No. 306-94-5
- HFE-43-10pccc (H-Galden 1040x) (CHF<sub>2</sub>OCF<sub>2</sub>OC<sub>2</sub>F<sub>4</sub>OCHF<sub>2</sub>) , CAS No. E1730133
- HFE-134 (CHF<sub>2</sub>OCHF<sub>2</sub>) , CAS No. 1691-17-4
- HFE-236ca12 (HG-10) (CHF<sub>2</sub>OCF<sub>2</sub>OCHF<sub>2</sub>) , CAS No. 78522-47-1

- Galden ZT-150 (HCF<sub>2</sub>OCF<sub>2</sub>OCF<sub>2</sub>OCF<sub>2</sub>H) , CAS No. 161075-02-01 (c)
- HFC-23 (CHF<sub>3</sub>) , CAS No. 75-46-7
- HFC-125 (C<sub>2</sub>HF<sub>5</sub>) , CAS No. 354-33-6
- HFC-134a (CH<sub>2</sub>FCF<sub>3</sub>) , CAS No. 811-97-2
- HFC-143a (C<sub>2</sub>H<sub>3</sub>F<sub>3</sub>) , CAS No. 420-46-2
- HFC-152a (CH<sub>3</sub>CHF<sub>2</sub>) , CAS No. 75-37-6
- Sulfur hexafluoride (SF<sub>6</sub>) , CAS No. 2551-62-4
- PFC-116 (Perfluoroethane) (C<sub>2</sub>F<sub>6</sub>) , CAS No. 76-16-4
- PFC-5-1-14 (Perfluorohexane) (C<sub>6</sub>F<sub>14</sub>) , CAS No. 355-42-0

Click here to add F-HTFs not included in the picklist

[+ ADD 'Other' f-HTF](#)

# Step 2b: Completing Subpart I Web Form – Adding F-HTFs from the Fab (All Facilities)



Subpart Overview » **Fab**

**ADD/EDIT OTHER F-HTF INFORMATION**

This page is used to identify "Other F-HTFs" not listed on the "ADD/EDIT F-HTF INFORMATION" page. Use the fields below to enter information for each "Other F-HTF" that is not listed in the F-HTF drop-down list. Enter the F-HTF Name, chemical formula, and CAS Number. If the F-HTF is a GHG for which there is not a chemical-specific GWP in Table A-1 of subpart A, select the F-GHG group/GWP to which the F-HTF belongs. Click "SAVE" after entering the information for the "Other F-HTF".

\* denotes a required field

**-SPECIFY OTHER F-HTF-**

F-HTF Name [98.96(c)(4)] \*

Chemical Formula [98.96(c)(4)] \*

Chemical Abstract Registry Number \*   
(CAS No.) [98.96(c)(1)]

Group to which this f-HTF belongs \*

F-GHG Group	GWP
<input type="radio"/> Fully fluorinated GHGs	10000
<input type="radio"/> Saturated hydrofluorocarbons (HFCs) with 2 or fewer carbon-hydrogen bonds	3700
<input type="radio"/> Saturated HFCs with 3 or more carbon-hydrogen bonds	930
<input type="radio"/> Saturated hydrofluoroethers (HFEs) and hydrochlorofluoroethers (HCFEs) with 1 carbon-hydrogen bond	5700
<input type="radio"/> Saturated HFEs and HCFEs with 2 carbon-hydrogen bonds	2600
<input type="radio"/> Saturated HFEs and HCFEs with 3 or more carbon-hydrogen bonds	270
<input type="radio"/> Fluorinated formates	350
<input type="radio"/> Fluorinated acetates, carbonofluoridates, and fluorinated alcohols other than fluorotelomer alcohols	30
<input type="radio"/> Unsaturated perfluorocarbons (PFCs), unsaturated HFCs, unsaturated hydrochlorofluorocarbons (HCFCs), unsaturated halogenated ethers, unsaturated halogenated esters, fluorinated aldehydes, and fluorinated ketones	1
<input type="radio"/> Fluorotelomer alcohols	1
<input type="radio"/> Fluorinated GHGs with carbon-iodine bond(s)	1
<input type="radio"/> Other fluorinated GHGs	2000

**SAVE** **CANCEL** **F-HTF ↑**

These fields must be populated for each "Other F-HTF" entered.

Select the appropriate F-GHG group for the F-HTF entered.



# Step 2b: Completing Subpart I Web Form – Adding F-HTFs from the Fab (All Facilities)



## SCREEN ERRORS

**✖** You cannot add this greenhouse gas because the CAS Registry Number you provided for this "other" gas matches with an existing CFR Part 98 Table A-1 gas, or it matches with an "other" gas that has already been added. It is possible it is included in the selection list provided but with a different chemical name than the one you are using. The gas with the CAS Registry Number is identified within e-GGRT as follows: CAS Registry Number: 756-13-8; Gas Name: Novec 649/1230, FK 5-1-12, perfluoro(2-methyl-3-pentanone); Chemical Formula: C6F12O. If you would like to select this gas, click CANCEL and locate the gas on the selection list provided. If you are unable to locate this gas on the selection list provided, please [contact the GHGRP Help Desk].

### - SPECIFY OTHER F-HTF

F-HTF Name [98.96(c)(4)] \*

Chemical Formula [98.96(c)(4)] \*

Chemical Abstract Registry Number \*   
(CAS No.) [98.96(c)(1)]

### Group to which this f-HTF belongs \*

F-GHG Group	GWP
<input type="radio"/> Fully fluorinated GHGs	10000
<input type="radio"/> Saturated hydrofluorocarbons (HFCs) with 2 or fewer carbon-hydrogen bonds	3700
<input type="radio"/> Saturated HFCs with 3 or more carbon-hydrogen bonds	930
<input type="radio"/> Saturated hydrofluoroethers (HFEs) and hydrochlorofluoroethers (HCFEs) with 1 carbon-hydrogen bond	5700
<input type="radio"/> Saturated HFEs and HCFEs with 2 carbon-hydrogen bonds	2600
<input checked="" type="radio"/> Saturated HFEs and HCFEs with 3 or more carbon-hydrogen bonds	270
<input type="radio"/> Fluorinated formates	350
<input type="radio"/> Fluorinated acetates, carbonofluoridates, and fluorinated alcohols other than fluorotelomer alcohols	30
<input type="radio"/> Unsaturated perfluorocarbons (PFCs), unsaturated HFCs, unsaturated hydrochlorofluorocarbons (HCFCs), unsaturated halogenated ethers, unsaturated halogenated esters, fluorinated aldehydes, and fluorinated ketones	1
<input type="radio"/> Fluorotelomer alcohols	1
<input type="radio"/> Fluorinated GHGs with carbon-iodine bond(s)	1
<input type="radio"/> Other fluorinated GHGs	2000

SAVE

CANCEL

F-HTF ↑

Entering a F-HTF already included in the list triggers a screen error



# Step 2b: Completing Subpart I Web Form – Adding F-HTFs from the Fab (All Facilities)



## 1.) Emitted Fluorinated Greenhouse gases

In this table, define all F-GHGs that must be reported for this fab. After the fab is completely defined you can use the OPEN button on the Subpart Overview to enter the related emissions information.

F-GHG   CAS No.	Process Type	Delete
PFC-14 (Perfluoromethane)   75-73-0	Chamber cleaning - in situ plasma, Plasma etching / Wafer cleaning	
PFC-218 (Perfluoropropane)   76-19-7	Plasma etching / Wafer cleaning	
PFC-116 (Perfluoroethane)   76-16-4	Plasma etching / Wafer cleaning	

[+ ADD a F-GHG](#)

## 2.) Fluorinated Heat transfer fluids

In this table, define all F-HTFs that must be reported for this fab. After the fab is completely defined you can use the OPEN button on the Subpart Overview to enter the related emissions information.

F-HTF	Delete
FC-77 (Blend - Perfluoro-2-butyltetrahydrofuran + C8F18) (blend)	
HT-55 (CF3(OCFCF3CF2)n-(OCF2)m-OCF3)	
HT-90 (CF3(OCFCF3CF2)n-(OCF2)m-OCF3)	

[+ ADD or Remove F-HTFs to Report](#)

## 3.) Abatement Systems

The number of abatement systems for each gas and process type combination, and the process types controlled by the abatement systems are considered CBI.

Abatement System Name/Identifier	Delete
No abatement system added.	

[+ ADD an Abatement System](#)

## - ADDITIONAL FAB INFORMATION

- What Is the Diameter of the Wafers Manufactured at this Fab? [§98.96(b)] (select all that apply)
- Greater than 300mm
  - 300mm
  - 200mm
  - 150mm

F-HTFs may be removed here.

Only appears if abatement is claimed at the facility



# Step 2d: Adding Abatement Systems (Default Method, Semiconductor Facilities)



## - FAB INFORMATION

Unique Name/Identifier	Fab 1 - Semi - Default
What does the fab manufacture?	Semiconductor
Method used to calculate f-GHG emissions	Default Emission Factors

## - ABATEMENT SYSTEM INFORMATION

Abatement System Name/Identifier\*

Enter Unique ID

### Select f-GHG and Process Type combinations for this fab

The F-GHG and Process Type/Sub-Type combinations listed below are those that were entered for this fab on the f-GHG screens. Only select those below for which DRE is being claimed. Use the "Number of Abatement Systems" column for each combination selected to report the specific number of abatement systems controlling emissions of the f-GHG for each process sub-type or process type, as applicable.

For each abatement system identifier, the process sub-type or process type being controlled is considered CBI. Additionally, the number of abatement systems controlling emissions for each process sub-type, or process type, as applicable, for each gas used in the process sub-type or process type is considered CBI. **CBI**

F-GHG   CAS No.	Process Type/Sub-Type	Number of Abatement Systems
PFC-14 (Perfluoromethane)   75-73-0	<input type="checkbox"/> Chamber cleaning - in situ plasma	
	<input checked="" type="checkbox"/> Plasma etching / Wafer cleaning	<input type="text" value="5"/>
PFC-218 (Perfluoropropane)   76-19-7	<input checked="" type="checkbox"/> Plasma etching / Wafer cleaning	<input type="text" value="2"/>
PFC-116 (Perfluoroethane)   76-16-4	<input type="checkbox"/> Plasma etching / Wafer cleaning	

Select the F-GHG and process type/sub-type for which you are claiming abatement

### Select N2O and Process Type combinations for this fab

The N2O and Process Type/Sub-Type combinations listed below. Only select those below for which DRE is being claimed.

For each abatement system identifier, the process sub-type or process type being controlled is considered CBI. Additionally, the number of abatement systems controlling emissions for each process sub-type, or process type, as applicable, for each gas used in the process sub-type or process type is considered CBI. **CBI**

F-GHG   CAS No.	Process Type/Sub-Type	Number of Abatement Systems
N2O   10024-97-2	<input checked="" type="checkbox"/> Chemical Vapor Deposition	<input type="text" value="2"/>
	<input type="checkbox"/> Other Electronics Manufacturing Processes	

Enter the number of abatement systems controlling emissions for each process type/sub-type

Click after saving to enter the basis for the DRE



# Step 2d: Adding Abatement Systems (Default Method, LCD/PV/MEMs Facilities)



**FAB INFORMATION**

Unique Name/Identifier	Fab 3 - LCD Default
What does the fab manufacture?	LCDsMEMsPVs
Method used to calculate f-GHG emissions	Default Emission Factors

**ABATEMENT SYSTEM INFORMATION**

Abatement System Name/Identifier \*

Select the F-GHG and process type/sub-type for which you are claiming abatement

Select f-GHG and Process Type combinations for this fab  
The F-GHG and Process Type/Sub-Type combinations listed below are those that were entered for this fab on the f-GHG screens. Only select those below for which DRE is being claimed. Use the "Number of Abatement Systems" column for each combination selected to report the specific number of abatement systems controlling emissions of the f-GHG for each process sub-type or process type, as applicable.

For each abatement system identifier, the process sub-type or process type being controlled is considered CBI. Additionally, the number of abatement systems controlling emissions for each process sub-type, or process type, as applicable, for each gas used in the process sub-type or process type is considered CBI. **CBI**

F-GHG   CAS No.	Process Type/Sub-Type	Number of Abatement Systems
Sulfur hexafluoride   2551-62-4	<input checked="" type="checkbox"/> Plasma etching	<input type="text" value="3"/>
Nitrogen trifluoride   7783-54-2	<input checked="" type="checkbox"/> NF3 remote chamber cleaning	<input type="text" value="2"/>

Enter the number of abatement systems controlling emissions for each process type/sub-type

Select N2O and Process Type combinations for this fab  
The N2O and Process Type/Sub-Type combinations listed below. Only select those below for which DRE is being claimed.

For each abatement system identifier, the process sub-type or process type being controlled is considered CBI. Additionally, the number of abatement systems controlling emissions for each process sub-type, or process type, as applicable, for each gas used in the process sub-type or process type is considered CBI. **CBI**

F-GHG   CAS No.	Process Type/Sub-Type	Number of Abatement Systems
N2O   10024-97-2	<input type="checkbox"/> Other Electronics Manufacturing Processes	

Identify if abatement is claimed for N2O processes

# Step 2d: Adding Abatement Systems (Stack Test Method, All Facilities)



**FAB INFORMATION**

Unique Name/Identifier: Fab 4 - LCD Stack

What does the fab manufacture?: LCDsMEMsPVs

Method used to calculate f-GHG emissions: Stack Testing Method

---

**ABATEMENT SYSTEM INFORMATION**

Abatement System Name/Identifier\*:

Select f-GHG and Process Type combinations for this fab

The F-GHG and Process Type/Sub-Type combinations listed below are those that were entered for this fab on the f-GHG screens. Only select those below for which DRE is being claimed. Use the "Number of Abatement Systems" column for each combination selected to report the specific number of abatement systems controlling emissions of the f-GHG for each process sub-type or process type, as applicable.

For each abatement system identifier, the process sub-type or process type being controlled is considered CBI. Additionally, the number of abatement systems controlling emissions for each process sub-type, or process type, as applicable, for each gas used in the process sub-type or process type is considered CBI. **CBI**

F-GHG   CAS No.	Process Type/Sub-Type	Number of Abatement Systems
Nitrogen trifluoride   7783-54-2	<input type="checkbox"/> Plasma etching	
	<input type="checkbox"/> Chamber cleaning	
	<input checked="" type="checkbox"/> NF3 remote chamber cleaning	<input type="text" value="3"/>
Sulfur hexafluoride   2551-62-4	<input type="checkbox"/> Plasma etching	
	<input checked="" type="checkbox"/> Chamber cleaning	<input type="text" value="3"/>
	<input type="checkbox"/> NF3 remote chamber cleaning	
PFC C-1418   559-40-0	<input type="checkbox"/> Plasma etching	
	<input type="checkbox"/> Chamber cleaning	
	<input type="checkbox"/> NF3 remote chamber cleaning	

For the stack test method, you must identify the F-GHG and process type for which abatement is claimed

Enter the number of abatement systems controlling emissions for each process type/sub-type

# Step 2d: Completing Subpart I Web Form – Entering Basis of DRE (All Facilities)



## Subpart I: Electronics Manufacturing (2014)

[Subpart Overview](#) » [Fab](#) » [Abatement System](#) » [DRE Information](#)

**ADD/EDIT DRE INFORMATION**  
 This page is used to enter information on the basis of the DRE value used in calculations for each F-GHG and process type combination for which you are claiming DRE on the "Abatement System" screen. If "Default DRE" is selected, you must indicate the supplier documentation that indicates the system is designed to abate F-GHG or N2O. You will also enter the appropriate certifications for the abatement system(s). Click "SAVE" to retain all information entered.

\* denotes a required field

**FAB INFORMATION**

Unique Name/Identifier	Fab 1 - Semi - Default
What does the fab manufacture?	Semiconductor
Method used to calculate f-GHG emissions	Default Emission Factors

**DRE INFORMATION BY GAS AND PROCESS TYPE**

F-GHG   CAS No.	N2O   10024-97-2
Process Type/Sub-Type	Chemical Vapor Deposition
Basis of DRE [98.96(q)(2)]	<input checked="" type="radio"/> Default DRE <input type="radio"/> Site-Specific Measured DRE
Supplier documentation that indicates that the system is designed to abate F-GHG or N2O, if using the applicable default DRE for this gas and process combination	Select <input type="text"/> <p>If there are no items in the menu, return to the Subpart Overview screen and upload the relevant file. Then, return to this screen and you should find the file(s) in the menu.</p>

The drop down field is used to select the documentation previously uploaded on the "Subpart Overview" page. This field only appears if "Default DRE" is selected.

**DRE INFORMATION BY GAS AND PROCESS TYPE**

F-GHG   CAS No.	PFC-14 (Perfluoromethane)   75-73-0
Process Type/Sub-Type	Plasma etching / Wafer cleaning
Basis of DRE [98.96(q)(2)]	<input type="radio"/> Default DRE <input checked="" type="radio"/> Site-Specific Measured DRE

**DRE INFORMATION BY GAS AND PROCESS TYPE**

F-GHG   CAS No.	PFC-218 (Perfluoropropane)   76-19-7
Process Type/Sub-Type	Plasma etching / Wafer cleaning



# Step 2d: Certifying Abatement Systems – (All Facilities)



**DRE INFORMATION BY GAS AND PROCESS TYPE**

F-GHG | CAS No. PFC-14 (Perfluoromethane) | 75-73-0

Process Type/Sub-Type Plasma etching / Wafer cleaning

Basis of DRE [98.96(q)(2)]  Default DRE  
 Site-Specific Measured DRE

---

**DRE INFORMATION BY GAS AND PROCESS TYPE**

F-GHG | CAS No. PFC-218 (Perfluoropropane) | 76-19-7

Process Type/Sub-Type Plasma etching / Wafer cleaning

Basis of DRE [98.96(q)(2)]  Default DRE  
 Site-Specific Measured DRE

---

**ABATEMENT CERTIFICATIONS**

Certification that all abatement systems at the facility have been installed, maintained, and operated in accordance with the site maintenance plan for abatement systems that is developed and maintained in your records as specified in 98.97(d)(9). [§98.96(q)]  Certified  
 Not Certified

These certifications appear here because you have indicated for one or more of the F-GHG/Process Type combinations selected above that the Basis of DRE is Default DRE.

Certification that the site maintenance plan for abatement systems for which emissions are being reported contains manufacturers recommendations and specifications for installation, operation, and maintenance for each abatement system. [§98.96(q)]  Certified  
 Not Certified

Certification that the abatement systems for which emissions are being reported and for which default DRE are being used were specifically designed for fluorinated GHG and N2O abatement, as applicable. [§98.96(q)]  Certified  
 Not Certified

All facilities with abatement must complete this certification

Facilities using the Default DREs in Table I-16 must also complete these certifications.



# Step 2d: Certifying Abatement Systems – (All Facilities)



PFC-218 (Perfluoropropane)   76-15-7	Plasma etching / Wafer cleaning	
PFC-116 (Perfluoroethane)   76-16-4	Plasma etching / Wafer cleaning	

+ ADD a F-GHG

## 2.) Fluorinated Heat transfer fluids

In this table, define all F-HTFs that must be reported for this fab. After the fab is completely defined you can use the OPEN button on the Subpart Overview to enter the related emissions information.

F-HTF	Delete
FC-77 (Blend - Perfluoro-2-butyltetrahydrofuran + C8F18) (blend)	
HT-55 (CF3(OCFCF3CF2)n-(OCF2)m-OCF3)	
HT-90 (CF3(OCFCF3CF2)n-(OCF2)m-OCF3)	

Lists all abatement system(s) entered

+ ADD or Remove F-HTFs to Report

## 3.) Abatement Systems

The number of abatement systems for each gas and process type combination, and the process types controlled by the abatement systems are considered CBI.

Abatement System Name/Identifier	Delete
ABATE 1	

+ ADD an Abatement System

## ADDITIONAL FAB INFORMATION

What Is the Diameter of the Wafers Manufactured at this Fab? [§98.96(b)] (select all that apply)

Greater than 300mm

300mm



# Step 2e: Entering Stack System Information (Stack Test Method Only)



### 3.) Abatement Systems

The number of abatement systems for each gas and process type combination, and the process types control abatement systems are considered CBI. **CBI**

Abatement System Name/Identifier
No abatement system added.
<a href="#">+ ADD an Abatement System</a>

Only appears if you are using the stack test method.

### 4.) STACK SYSTEM(S) INFORMATION

For all stack systems for which you calculate fluorinated GHG emissions according to the procedures specified in § 98.93(i)(3), certification that you have included and accounted for all abatement systems and any respective downtime in your emissions calculations under § 98.93(i)(3). [§98.96(q)]

Certified  
 Not Certified

Certification that no more than 10 percent of the total number of fluorinated GHG emitting process tools were connected or disconnected from any one stack system during any testing in this fab during the reporting year. [98.94(j)(1)(iv)]

Certified  
 Not Certified

Certification that no process tools in this fab that were in operation at the start of the test period were moved to a different stack system during the test period (i.e., during or in-between testing of individual stack systems). [98.94(j)(1)(iv)]

Certified  
 Not Certified

Certification that no point-of-use abatement systems were permanently removed from service during the test period. [98.94(j)(1)(iv)]

Certified  
 Not Certified

You must complete all certifications for the stack system(s) entered.

Click to add specific stack system details

Stack System	Status <sup>1</sup>	Delete
No stack system added.		
<a href="#">+ ADD a Stack System</a>		

# Step 2e: Entering Stack System Information (Stack Test Method Only)



## Subpart I: Electronics Manufacturing (2014)

Subpart Overview » Fab » Stack System

### ADD/EDIT STACK SYSTEM INFORMATION

This page is used to provide details about each stack system at the fab. Use the fields below to enter a unique identifier for each stack system and indicate whether stack testing was performed. Complete the required fields that appear based on whether stack testing was performed on that stack system. Click "SAVE" when your information is complete.

To add additional stack systems, click "FAB" at the bottom of the page and add additional stack systems by again selecting the "Add a Stack System" button. Do not include emergency vents or bypass stacks through which emissions are not usually vented under typical operating conditions.

\* denotes a required field

### FAB INFORMATION

Unique Name/Identifier	Fab 2 - Semi Stack Test
What does the fab manufacture?	Semiconductor
Method used to calculate f-GHG emissions	Stack Testing Method

Enter a unique stack system identifier

### STACK SYSTEM

Stack system unique name/identifier *	<input type="text" value="STACKS 1-5"/>
Stack Testing on this stack system was performed, not performed, or not required	<input type="radio"/> Stack testing was performed as per 98.93(i)(3) <input type="radio"/> Stack testing was not performed as allowed per 98.93(i)(2) <input checked="" type="radio"/> Testing was not required for the fab because the fab met the criteria to test less frequently in 98.94(j)(5)(ii).

SAVE CANCEL FAB ↑

# Step 2e: Entering Stack System Information (Stack Test Method Only)



## Subpart I: Electronics Manufacturing (2014)

[Subpart Overview](#) » [Fab](#) » [Stack System](#)

### ADD/EDIT STACK SYSTEM INFORMATION

This page is used to provide details about each stack system at the fab. Use the fields below to enter a unique identifier for each stack system and indicate whether stack testing was performed. Complete the required fields that appear based on whether stack testing was performed on that stack system. Click "SAVE" when your information is complete.

To add additional stack systems, click "FAB" at the bottom of the page and add additional stack systems by again selecting the "Add a Stack System" button. Do not include emergency vents or bypass stacks through which emissions are not usually vented under typical operating conditions.

\* denotes a required field

### FAB INFORMATION

Unique Name/Identifier	Fab 2 - Semi Stack Test
What does the fab manufacture?	Semiconductor
Method used to calculate f-GHG emissions	Stack Testing Method

### STACK SYSTEM

Stack system unique name/identifier *	<input type="text" value="STACKS 1-5"/>
Stack Testing on this stack system was performed, not performed, or not required	<input checked="" type="radio"/> Stack testing was performed as per 98.93(i)(3) <input type="radio"/> Stack testing was not performed as allowed per 98.93(i)(2) <input type="radio"/> Testing was not required for the fab because the fab met the criteria to test less frequently in 98.94(j)(5)(ii).
Date(s) of any testing conducted during the reporting year for this stack system [98.96(w)(1)]	<input type="text"/>

Up to 3 dates. mm/dd/yyyy, mm/dd/yyyy, mm/dd/yyyy

Enter dates for testing



# Step 2e: Entering Stack System Information (Stack Test Method Only)



## Subpart I: Electronics Manufacturing (2014)

[Subpart Overview](#) » [Fab](#) » [Stack System](#)

### ADD/EDIT STACK SYSTEM INFORMATION

This page is used to provide details about each stack system at the fab. Use the fields below to enter a unique identifier for each stack system and indicate whether stack testing was performed. Complete the required fields that appear based on whether stack testing was performed on that stack system. Click "SAVE" when your information is complete.

To add additional stack systems, click "FAB" at the bottom of the page and add additional stack systems by again selecting the "Add a Stack System" button. Do not include emergency vents or bypass stacks through which emissions are not usually vented under typical operating conditions.

\* denotes a required field

#### FAB INFORMATION

Unique Name/Identifier	Fab 2 - Semi Stack Test
What does the fab manufacture?	Semiconductor
Method used to calculate f-GHG emissions	Stack Testing Method

#### STACK SYSTEM

Stack system unique name/identifier*	<input type="text" value="STACKS 1-5"/>
Stack Testing on this stack system was performed, not performed, or not required	<input type="radio"/> Stack testing was performed as per 98.93(i)(3) <input checked="" type="radio"/> Stack testing was not performed as allowed per 98.93(i)(2) <input type="radio"/> Testing was not required for the fab because the fab met the criteria to test less frequently in 98.94(j)(5)(ii).
Indicate why stack testing was not performed. (Optional)	<input type="text"/>

Appears if stack testing was not performed



# Step 2e: Entering Stack System Information (Stack Test Method Only)



## -4.) STACK SYSTEM(S) INFORMATION

For all stack systems for which you calculate fluorinated GHG emissions according to the procedures specified in § 98.93(i)(3), certification that you have included and accounted for all abatement systems and any respective downtime in your emissions calculations under § 98.93 (i)(3). [§98.96(q)]

Certified  
 Not Certified

Certification that no more than 10 percent of the total number of fluorinated GHG emitting process tools were connected or disconnected from any one stack system during any testing in this fab during the reporting year. [98.94(j)(1)(iv)]

Certified  
 Not Certified

Certification that no process tools in this fab that were in operation at the start of the test period were moved to a different stack system during the test period (i.e., during or in-between testing of individual stack systems). [98.94(j)(1)(iv)]

Certified  
 Not Certified

Certification that no point-of-use abatement systems were permanently removed from service during the test period. [98.94(j)(1)(iv)]

Certified  
 Not Certified

Shows all stack systems entered

Stack System	Status <sup>1</sup>	Delete
STACK 6-7	Incomplete	
STACKS 1-5	Incomplete	
STACK 8-10	Incomplete	

+ ADD a Stack System



# Step 2f: Additional Fab Information - Semiconductor Facilities, Default EF or Stack Testing Method



## ADDITIONAL FAB INFORMATION

What Is the Diameter of the Wafers Manufactured at this Fab? [§98.96(b)]  
(select all that apply)

- Greater than 300mm
- 300mm
- 200mm
- 150mm
- Less than 150mm

This question only appears for fabs manufacturing semiconductors.

Annual Manufacturing Capacity at this Fab used in Equation I-5 [§98.96(a)]

 CBI (square meters)

Annual production for this fab in terms of substrate surface area (e.g., silicon, PV-cell, glass) [§98.96(e)]

 CBI (square meters)

Do the emissions for this fab include emissions from research and development activities, as defined in 98.6?

Yes  
 No

What is the approximate percentage of total GHG emissions, on a metric ton CO<sub>2</sub>e basis, that are attributable to research and development activities? [§98.96(x)]

What is the effective fab-wide destruction or removal efficiency value calculated using Equations I-26, I-27 and I-28, as appropriate? [§98.96(r)]

 (decimal fraction)  
If you do not have abatement, or are using the default method and are not claiming abatement, enter 0.

# Step 2f: Entering Additional Fab Information – All Facilities



What method was used for this fab to develop the apportioning factors for fluorinated GHG and N2O consumption? [§98.96(m)(1)]	Quantifiable metric
Optional description of your system and method (s) used in the fab-specific apportioning model	
Description of quantifiable metric used in engineering model to apportion gas consumption [§98.96(m)(1)]	wafer passes
Start date selected under 98.94(c)(2)(i). [§98.96(m)(2)]	12/01/2014 <a href="#">Clear Date</a>
End date selected under 98.94(c)(2)(i). [§98.96(m)(2)]	12/31/2014 <a href="#">Clear Date</a>
Certification that the gas(es) selected under 98.94(c)(2)(ii) for this fab corresponds to the largest quantity(ies) consumed, on a mass basis, of fluorinated GHG used at the fab in the reporting year which the facility is required to apportion. Note that if you compare the actual gas consumed to the modeled gas consumed for two fluorinated GHGs, you must certify that one of the fluorinated GHGs selected for comparison corresponds to the largest quantity consumed, on a mass basis, of fluorinated GHGs used at the fab that requires apportionment during the reporting year. [§98.96(m)(3)]	<input checked="" type="radio"/> Certified (based on a single gas corresponding to the largest quantity consumed) <input type="radio"/> Certified (based on an aggregate of two gases corresponding to the largest quantities consumed) <input type="radio"/> Not certified
Result of calculation comparing actual and modeled gas consumption under §98.94(c)(2)(v) (the percent difference between actual and modeled gas consumption, relative to actual gas consumption). [§98.96(m)(4)]	4 (percent)
If you are required to apportion f-GHG consumption between fabs, as required by 98.94(c)(2)(v), certification that the gas(es) you selected under §98.94(c)(2)(ii) correspond(s) to the largest quantities consumed on a mass basis, of f-GHG used at your facility during the reporting year for which you are required to apportion. [§98.96(m)(5)]	<input checked="" type="radio"/> Certified (based on a single gas corresponding to the largest quantity consumed) <input type="radio"/> Certified (based on an aggregate of two gases corresponding to the largest quantities consumed) <input type="radio"/> Not certified



SAVE CANCEL **Subpart Overview**

# Reporting Subpart I Data - Overview



## Reporting of subpart I GHG data:

✓ Step 1: Accessing the subpart I reporting module to your facility profile in e-GGRT and accessing the Web form.

✓ Step 2: Enter required facility-specific and fab-specific data into the Web form.

➔ Step 3: Enter GHG emissions data into the Web form.

- Step 4: Review and correct validation errors.
- Step 5: Generate, certify, and submit annual report.

# Step 3: Completing Subpart I Web Form – Entering Emissions for Each Fab



## Subpart I: Electronics Manufacturing (2014)

### Subpart Overview

#### OVERVIEW OF SUBPART REPORTING REQUIREMENTS

This page provides an overview of the subpart I facilities for which you are reporting. This page is divided into three sections. The first section "Abatement System Supplier Documentation" is used to append files to your annual report for DRE certifications from the suppliers for abatement systems. Click on "Add an Attachment" to upload a file from your computer. The next section is for entering detailed information for each fab at your facility by clicking on "ADD a FAB". Use the blue "OPEN" button under "Emissions" for each fab to enter the data required for each fab at your facility. The emissions summary section is for the Subpart I emissions by GHG.



Subpart I: View Validation

#### SUPPLIER DOCUMENTATION (for abatement systems)

Uploaded File Name	Attached By	Date	Delete
DRE Information.docx	Amanda Baynham	February 4, 2015	✘

+ ADD an Attachment

#### FABS

Unique Name/Identifier	Status <sup>1</sup>	Emissions	Delete
Fab 3 - LCD Default	Complete	<a href="#">OPEN</a>	✘
Fab 4 - LCD Stack	Complete	<a href="#">OPEN</a>	✘
Fab 1 - Semi - Default	Incomplete	<a href="#">OPEN</a>	✘
Fab 2 - Semi Stack Test	Complete	<a href="#">OPEN</a>	✘

+ ADD a FAB

#### EMISSIONS SUMMARY

GHG Name	CAS Number	Total Emissions (metric tons)	Rounded Total Emissions (metric tons)
FC-77 (Blend - Perfluoro-2-butyltetrahydrofuran + C8F18)	335-36-4, 307-34-6	0.02	0.02



# Step 3a: Entering Emissions for Each Fab – N<sub>2</sub>O Emissions



## Subpart I: Electronics Manufacturing (2014)

[Subpart Overview](#) » [Fab](#)

### ADD/EDIT FAB N2O EMISSIONS INFORMATION

This page is used to enter information about N2O emissions at the fab. Using the fields below, indicate the emissions of N2O for each process type.

\* denotes a required field

#### - FAB INFORMATION -

Unique Name/Identifier Fab 3 - LCD Default

What does the fab manufacture? LCDsMEMsPVs

Method used to calculate f-GHG emissions Default Emission Factors

#### - FOR CHEMICAL VAPOR DEPOSITION PROCESSES IN THIS FAB -

Chosen method of reporting N<sub>2</sub>O emissions from chemical vapor deposition as calculated in Equation I-10 [§98.96(d)]

Did not use N<sub>2</sub>O in CVD processes

If you previously indicated that you did not use N<sub>2</sub>O in CVD processes, this will be reflected on the emissions page.

#### - FOR OTHER ELECTRONICS MANUFACTURING PROCESSES IN THIS FAB -

Chosen method of reporting N<sub>2</sub>O emissions from electronic manufacturing processes as calculated in Equation I-11 [§98.96(d)]

Used default utilization factor from Table I-8

Total annual N<sub>2</sub>O emissions from electronic manufacturing processes as calculated in Equation I-11 [§98.96(c)(3)]

(metric tons)

After saving, click to proceed to next page.

SAVE

CANCEL

[Subpart Overview](#) ↑

[F-GHG Emissions](#) →

# Step 3b: Entering Emissions for Each Fab – F-GHG Emissions



**EPA** United States Environmental Protection Agency

**e-GGRT** Electronic Greenhouse Gas Reporting Tool

HOME FACILITY REGISTRATION FACILITY MANAGEMENT DATA REPORTING EPA REPORTS

Hello, Amanda Baynham | My Profile | Logout

e-GGRT Help

### Redaction Script Test Facility 2

#### Subpart I: Electronics Manufacturing (2014)

[Subpart Overview](#) » [Fab](#) » **F-GHG Emissions**

**ADD/EDIT F-GHG EMISSIONS INFORMATION**

This page is used to enter information about F-GHG emissions at the fab. Use the fields below to enter F-GHG emissions from the plasma etch/wafer clean and chamber clean process types determined either using the default emission factor method or the stack testing method. The page is pre-populated with F-GHG entered earlier, and with process types if using the default emission factor method. If a F-GHG or process type is not present, navigate to the "Fab" page using the navigation buttons at the top or use the "Subpart Overview" link, and enter that F-GHG or process type before returning here to enter emissions. Click "SAVE" before moving to another page.

\* denotes a required field

**FAB INFORMATION**

Unique Name/Identifier	Fab 1 - Semi - Default
What does the fab manufacture?	Semiconductor
Method used to calculate f-GHG emissions	Default Emission Factors

**F-GHG EMISSIONS FOR THE FAB**

Gas Name   CAS No	PFC-218 (Perfluoropropane)   76-19-7
Process Type	Plasma etching / Wafer cleaning
Calculation Method	Assumed utilization/by-product formation rates = 0
Annual Emissions of this F-GHG [98.96(c)(1)]	<input type="text" value="0.1"/> (metric ton)

Gas Name   CAS No	PFC-116 (Perfluoroethane)   76-16-4
Process Type	Plasma etching / Wafer cleaning
Calculation Method	Used default factors
Annual Emissions of this F-GHG [98.96(c)(1)]	<input type="text" value="0.06"/> (metric ton)

**SAVE** **CANCEL** [Subpart Overview](#) [← N<sub>2</sub>O Emissions](#) [F-HTF Emissions →](#)

Carefully check CAS number and chemical name when entering emissions.

Enter emissions for each gas by process type/sub-type and calculation method.

Note that process type will not be shown for fabs using the Stack Test Method

After saving, click to proceed to next page.

# Step 3c: Entering Emissions for Each Fab – F-HTF Emissions



## FAB INFORMATION

Unique Name/Identifier	Fab 3 - LCD Default
What does the fab manufacture?	LCDsMEMsPVs
Method used to calculate f-GHG emissions	Default Emission Factors

## F-HTF EMISSIONS FOR THE FAB

F-HTF	HFC-23 (CHF3) , CAS No. 75-46-7
Total Annual Emissions [§98.96(c)(4)]	<input type="text" value="0.14"/> (metric tons)
Were missing data procedures used to estimate inputs into the fluorinated heat transfer fluid mass balance equation under §98.95(b)? [§98.96(s)]	<input type="radio"/> Yes <input checked="" type="radio"/> No
F-HTF	HFC-125 (C2HF5) , CAS No. 354-33-6
Total Annual Emissions [§98.96(c)(4)]	<input type="text" value="0.04"/> (metric tons)
Were missing data procedures used to estimate inputs into the fluorinated heat transfer fluid mass balance equation under §98.95(b)? [§98.96(s)]	<input checked="" type="radio"/> Yes <input type="radio"/> No
How many times were missing data procedures followed in this reporting year? [§98.96(s)]	<input type="text" value="2"/>
What method was used to estimate the missing data? [§98.96(s)]	Arithmetic average

Enter annual emissions for each F-HTF listed.

Enter the missing data details for each F-HTF, as applicable

## MISSING DATA PROCEDURES

Once all emissions are entered, return to Subpart Overview page.



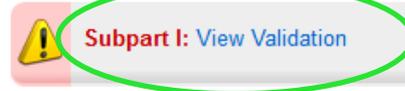
# Step 4: Data Validation Checks

## Subpart I: Electronics Manufacturing (2014)

### Subpart Overview

#### OVERVIEW OF SUBPART REPORTING REQUIREMENTS

This page provides an overview of the subpart I facilities for which you are reporting. This page is divided into three sections. The first section "Abatement System Supplier Documentation" is used to append files to your annual report for DRE certifications from the suppliers for abatement systems. Click on "Add an Attachment" to upload a file from your computer. The next section is for entering detailed information for each fab at your facility by clicking on "ADD a FAB". Use the blue "OPEN" button under "Emissions" for each fab to enter the data required for each fab at your facility. The emissions summary section is for the Subpart I emissions by GHG.



#### SUPPLIER DOCUMENTATION (for abatement systems)

Uploaded File Name	Attached By	Date	Delete
<a href="#">DRE Information.docx</a>	Amanda Baynham	February 4, 2015	✘

+ ADD an Attachment

#### FABS

Unique Name/Identifier	Status <sup>1</sup>	Emissions	Delete
Fab 3 - LCD Default	Complete	<a href="#">OPEN</a>	✘
Fab 4 - LCD Stack	Complete	<a href="#">OPEN</a>	✘
Fab 1 - Semi - Default	Incomplete	<a href="#">OPEN</a>	✘
Fab 2 - Semi Stack Test	Complete	<a href="#">OPEN</a>	✘

+ ADD a FAB

#### EMISSIONS SUMMARY

GHG Name	CAS Number	Total Emissions (metric tons)	Rounded Total Emissions (metric tons)
FC-77 (Blend - Perfluoro-2-butyltetrahydrofuran + C8F18)	335-36-4, 307-34-6	0.02	0.02

# Step 4: Data Validation Checks



## Subpart I: Electronics Manufacturing (2014)

[Subpart Overview](#) » [Validation Report](#)

### SUBPART VALIDATION REPORT

This report contains a complete set of validation messages at the subpart level. Clicking the message text will redirect you to the screen that contains the field that generated the validation message.

[Print-friendly version](#)

### FACILITY-LEVEL VALIDATION MESSAGES

Validation Type <sup>1</sup>	ID <sup>2</sup>	Message <sup>3</sup>
No facility-level validation messages found.		

### FILE-LEVEL VALIDATION MESSAGES

Validation Type <sup>1</sup>	ID <sup>2</sup>	Details	Message <sup>3</sup>
No file-level validation messages found.			

### FAB VALIDATION MESSAGES

Validation Type <sup>1</sup>	Fab	Gas	Process Type	ID <sup>2</sup>	Message <sup>3</sup>
Data Completeness	Fab 1 - Semi - Default	PFC-14 (Perfluoromethane)	Chamber cleaning - in situ plasma	I0201	<a href="#">Annual emissions for this fluorinated greenhouse gas. This data element is required.</a>
Data Completeness	Fab 1 - Semi - Default	PFC-14 (Perfluoromethane)	Plasma etching / Wafer cleaning	I0201	<a href="#">Annual emissions for this fluorinated greenhouse gas. This data element is required.</a>

[← Subpart Overview](#)

<sup>1</sup> Validation or Verification Types: e-GGRT generates a variety of validation or verification types, defined below:

- Data Completeness: data required for reporting is missing or incomplete.
- Data Quality: data is outside of the range of expected values. The value you have provided is outside the EPA estimated range for this data element. Please double check this value and revise, if necessary. If you believe it to be correct, please submit the value as is.
- Screen Error: a data value or combination of data values prevents e-GGRT from continuing to the next page. Typically, this will not appear on the Validation Report, but instead will be displayed on the data entry page at the time the error was created.

<sup>2</sup> ID: Each validation or verification message has a unique identifier. If you contact the e-GGRT Help Desk with a question about a validation message, please include this unique identifier with your request.

<sup>3</sup> The absence of a validation or verification message does not indicate that the information provided is without error.

Click on a validation message to open the appropriate page of the webform.



# Step 5: Generate, certify, and submit annual report

## e-GGRT Greenhouse Gas Data Reporting (2014)

Select Facility » [Facility](#) or [Supplier Overview](#)

### FACILITY OR SUPPLIER OVERVIEW

This page allows you to add the source and/or supplier categories for which your facility or supplier will be reporting, then to access those data reporting screens using the OPEN buttons.

After data reporting is complete, you can initiate the annual report review and submission process from this page by using the SUBMIT button (or RESUBMIT for subsequent submissions if needed).

Facility's GHG Reporting Method: Data entry via e-GGRT web-forms ([Change](#))

**!** The Annual Report has already been prepared. Any changes you make to report data will not be reflected in that version. After making changes to report data you must choose GENERATE/RESUBMIT below, then click GENERATE REPORT for those changes to be included in an updated version of the Annual Report.

### REPORT DATA

2014 Reporting Source or Supplier Category	Validation Messages?	Subpart Reporting
Subpart A—General Information	None	<a href="#">OPEN</a>
Subpart I—Electronics Manufacturing	None	<a href="#">OPEN</a>

[+](#) ADD or REMOVE Subparts

**Note:** If you have deferred prior year data to be reported with your RY2014 Annual Report, please [Click Here](#).

If all subparts are completed and Validation Messages addressed to your satisfaction, you are ready to prepare and submit an Annual Report.

### SUBMIT ANNUAL REPORT

Report	Uploaded File Name	Status	Submitted Date	Certification Date	
2014 Annual Report v1		Ready for review			<a href="#">REPORT SUBMISSION</a> <b>X</b>

[VIEW REPORTS](#) Annual Report reviewable formats (including public non-CBI versions and trend reports) for all submissions this reporting year can be accessed on the View Reports page.

CO<sub>2</sub> equivalent emissions from facility subparts C-II, SS, and TT (metric tons)

Biogenic CO<sub>2</sub> emissions from facility subparts C-II, SS, and TT (metric tons)

CO<sub>2</sub> equivalent emissions from supplier subparts LL-QQ (metric tons)

[VIEW GHG DETAILS](#)

Enter data for all applicable subparts before generating the report.



# Help with E-GGRT



Additional information on e-GGRT can be found at [www.ccdsupport.com](http://www.ccdsupport.com)

**EPA** United States Environmental Protection Agency

**e-GGRT** Electronic Greenhouse Gas Reporting Tool

/ Pages  Search

## Welcome to GHGRP Help

This site contains news, FAQs, help and other information about EPA's Greenhouse Gas Reporting Program and the electronic Greenhouse Gas Reporting Tool (e-GGRT).

**e-GGRT News**

Latest News

- e-GGRT will be down for maintenance beginning February 6th, 2015
- Preparing for RY2014 Reporting
- XML Schemas for Reporting Year 2014 Now Available
- New e-GGRT Training Webinars Scheduled for RY2014

GHG Rulemaking RSS Feed

e-GGRT RSS Feed

**Learn about e-GGRT**

Registration Instructions

- Basic User Registration
- User Profile
- Facility Registration
  - Identification of DRs, ADRs, and Agents
  - Acceptance of DR and ADR Appointment
  - Acceptance of Agent Appointment
- Facility Management
  - Changing DR and ADR
  - Changing Agents
  - Edit Facility Profile

**Help**

About GHG Reporting Program and Part 98

FAQs

Known Issues

Contact Us

# Answers to Frequently Asked Questions



Answers to common questions can be found on our FAQ site:  
<http://www.ccdsupport.com/confluence/display/faq/FAQs>

Welcome to the Greenhouse Gas Reporting Program's FAQ Site

Browse the FAQs using the search tool or click on the categories below:

 Search

**? GHGRP Rule Notices**  
Information and guidance on rules and proposals related to the GHG Reporting Program

**? GHG Data & Publication**  
Information for the general public on GHGRP data and the display of that data in the publication tool

**? e-GGRT**  
Common questions about using the electronic GHG reporting tool

**? Rule Subparts**  
Common questions and guidance specific to industrial categories covered by the program

**? XML Reporting**  
Details for reporters on using Extensible Markup Language

**? Subpart W**  
Common questions specific to Petroleum and Natural Gas Systems reporters/facilities

Alternatively, view the entire list of FAQs by clicking [here](#).

[FAQ Home](#) -- [e-GGRT Help](#) -- [GHGRP Home Page](#)

# E-GGRT Help Desk



[/ Pages](#) / [Home](#) / [Contact Us](#)

## GHGRP Help Desk Contact Information

The GHGRP Help Desk provides answers to questions about e-GGRT and, more broadly, about the Greenhouse Gas Reporting Program (GHGRP). You may contact the GHGRP Help Desk by email, web, or telephone:

 As a reminder, please do not submit sensitive or business confidential information to the helpline. Anything you send to this address **may be made** available to the public.

<b>Email</b>	<a href="mailto:GHGreporting@epa.gov">GHGreporting@epa.gov</a>
<b>Web</b>	<a href="#">Submit a question about e-GGRT or the GHGRP</a>
<b>Telephone</b>	1-877-444-1188 (toll free) 1-703-676-4400 (outside U.S.)
<b>Mailing Address</b>	<a href="#">GHGRP Help Desk Mailing Address</a>

The GHGRP Help Desk is open from 9 a.m. to 5 p.m. Eastern Time, Monday through Friday except holidays.

[e-GGRT](#) -- [Help](#) -- [FAQ](#) -- [GHGRP](#)

## Help with Subpart I



- GHG Reporting Rule Information and Help

<http://www.epa.gov/ghgreporting/reporters/index.html>

- Subpart I Information:

<http://www.epa.gov/ghgreporting/reporters/subpart/i.html>

- Register for upcoming webinars on general GHGRP updates and find copies of the slides for this and other webinars:

<http://www.epa.gov/ghgreporting/reporters/training/index.html>

Questions?



## e-GGRT Help Desk Contact Information

**Email:** [GHGreporting@epa.gov](mailto:GHGreporting@epa.gov)

**Telephone:** 1-877-444-1188 (toll free)  
1-703-676-4400 (outside U.S.)

**Submit an online form here:**

<http://www.epa.gov/ghgreporting/contactus.html>