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Subpart C - General Stationary Fuel Combustion Sources

 A printer-friendly version (pdf) (58 pp, 13,359K) of GHG reporting instructions for this subpart

Please select a help topic from the list below:

- [Using e-GGRT to Prepare Your Subpart C Report](#)
 - [Subpart C Configurations](#)
 - [Subpart C Configuration-Level Emissions Information](#)
 - [Subpart C Fuel Identification Information](#)
 - [Subpart C Fuel-Level Emissions Information](#)
 - [Configuration types, emission details and their presentation in the summary report](#)
- [Using e-GGRT to Prepare Your Subpart C \(Abbreviated\) Report](#)
- [Using Subpart C Calculation Spreadsheets](#)
 - [Table C-1 to Subpart C](#)
 - [Table C-2 to Subpart C](#)
- [Carry forward of data from previous submissions into RY2011 forms](#)
- [Subpart C Rule Guidance](#)
- [Subpart C Rule Language \(eCFR\)](#)

Additional Resources:

- [Part 98 Terms and Definitions](#)
- [Frequently Asked Questions \(FAQs\)](#)
- [Webinar Slides](#)

Using e-GGRT to Prepare Your Subpart C Report

This page provides an overview of subtopics that are central to subpart C reporting:

- [Configuration Identification Information](#)
- [Configuration-Level Emissions Information](#)
- [Fuel Identification Information](#)
- [Fuel-Level Emissions Information](#)
- [Subpart Validation Report](#)

If you previously reported for Reporting Year (RY) 2010, the Agency has carried some of your RY2010 data forward and entered it in your RY2011 forms to reduce reporting burden. It is still your responsibility to review and assure that all the information in your submission is correct, but the Agency believes that most of the data which is carried forward is unlikely to change significantly from year to year. For more information about carry forward data, please see the [Carry forward of data from previous submissions into RY2011 forms](#) help content.

The end of the page contains links you can use for more information on these topics.

Configuration Identification Information

For stationary combustion sources required to report under subpart C, e-GGRT requires you to identify which reporting option each unit or group of units will be using to report emissions. The different subpart C reporting options are referred to as "Configurations" in e-GGRT. The individual configurations are designed to match the reporting options made available by the rule in 40 CFR 98.36. As specified in part 98, each configuration has slightly different reporting requirements. Once a configuration is added, e-GGRT will allow you to enter the required reporting elements for the configuration type selected. A facility may have multiple configuration types and/or multiple configurations of any given type. A single unit may not be reported under multiple configurations.

Click image to expand

Facility ABC (2011)
Subpart C: General Stationary Fuel Combustion
 Subpart C Overview

OVERVIEW OF SUBPART C REPORTING REQUIREMENTS
 Subpart C requires affected facilities to report annual carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) emissions from each stationary combustion unit. First, use this page to identify each stationary combustion reporting configuration (reporting options listed in §98.36) and then enter emissions information required by subpart C for each configuration.

For additional information about subpart C reporting, please use the e-GGRT Help link(s) provided.

Subpart C: No Validation Messages

CONFIGURATION SUMMARY

Configuration Name or ID	Configuration Type	Status ¹	OPEN	Delete
Boiler 1	Single Unit Using Tiers 1, 2, or 3	Complete	OPEN	X
CS- Duct 2	Common Stack or Duct (CEMS)	Complete	OPEN	X
GP- South 52	Aggregation of Units	Complete	OPEN	X
GP-North 34	Aggregation of Units	Complete	OPEN	X
Unit 46	Alternative Part 75 Reporters	Complete	OPEN	X

1 A status of "Incomplete" means that one or more required data elements are incomplete. For details, refer to the Data Completeness validation messages in your Validation Report by clicking the "View Validation" link above (note: if there are no validation messages for this subpart you will not see this link).

Buttons: Add a Configuration, Facility Overview

Starting on the Subpart C Overview page, click the link titled "ADD a Configuration" below the CONFIGURATION SUMMARY table.

Click image to expand

Total Energy
Subpart C: General Stationary Fuel Combustion (2011)
 Subpart C Overview • **New Configuration**

SUBPART C REPORTING CONFIGURATIONS
 For stationary combustion sources required to report under subpart C, e-GGRT requires a facility to identify which reporting option each unit or group of units will be using to report emissions. The different subpart C reporting options are referred to as configurations in e-GGRT. The individual configurations are designed to match the reporting options made available by the rule in 40 CFR 98.36.

Once a configuration is added, e-GGRT will allow the user to enter the required reporting elements for the configuration type selected. A facility may have multiple configuration types and/or multiple configurations of any given type.

For additional information about adding and editing a configuration and the different reporting configurations available, please use the e-GGRT Help link(s) provided.

SELECT A REPORTING CONFIGURATION

Select	Reporting Configuration Type	Calculation Methodology	Rule Reference
<input type="radio"/>	Single Unit Using Tiers 1, 2, or 3	Tier 1, 2, or 3	98.36(b)
<input type="radio"/>	Single Unit Using Tier 4 (CEMS)	Tier 4	98.36(b)
<input type="radio"/>	Aggregation of Units	Tier 1, 2, or 3	98.36(c)(1)
<input type="radio"/>	Common Pipe	Tier 1, 2, or 3	98.36(c)(3)
<input type="radio"/>	Common Stack or Duct (CEMS)	Tier 4	98.36(c)(2)
<input type="radio"/>	Alternative Part 75 Reporters	98.33(a)(5)	98.36(d)(2)

Buttons: CANCEL, NEXT

The unit or group configuration types are first briefly identified below with the relevant regulatory citation, and then again in more detail:

- Configuration Type 1 - A single unit using Tiers 1, 2 or 3 to calculate emissions [98.36(b)]
- Configuration Type 2 - A single unit using Tier 4 (CEMS) to calculate emissions [98.36(b)]
- Configuration Type 3 - A group of units using the aggregation of units reporting alternative [98.36(c)(1)]
- Configuration Type 4 - A group of units using the common pipe configurations reporting alternative [98.36(c)(3)]
- Configuration Type 5 - A group of units using Tier 4 (CEMS) to calculate emissions and reporting under the monitored common stack or duct configurations reporting alternative [98.36(c)(2)]
- Configuration Type 6 – Part 75 units using the alternative CO₂ mass emissions calculation methods provided in 98.33(a)(5) [98.36(d)(2)]

Configuration Type 1 - Single Unit Using Tiers 1, 2, or 3 [98.36(b)]

The single unit reporting configuration is the most basic configuration type. Any unit may be reported individually in e-GGRT. If the unit uses Tiers 1, 2, or 3 to calculate CO₂ emissions, it must be reported as a configuration of Type 1. If the use of Tier 4 is required or elected, Configuration Type 2 or 5 must be used.

A unit under Configuration Type 1 may combust multiple fuels, and it is possible for the different fuels to be using different tiers. For example, a unit that is 500 mmBtu/hr in size may be required to use Tier 3 for coal, but only Tier 2 for natural gas or fuel oil.

Facilities with numerous units should investigate if Configuration Type 3 (aggregation of units) or Type 4 (common pipe) may be used.

Configuration Type 2 – Single Unit Using Tier 4 [98.36(b)]

Configuration Type 2 is the reporting option for single units that are either required, or elect to use Tier 4 (CEMS). CO₂ emissions will be reported for all fuels combined, but CH₄ and N₂O emissions will still need to be reported on a fuel by fuel basis.

Should a unit change methodology from Tiers 1-3 to Tier 4 during the year, the unit will need to be added as two separate configurations in e-GGRT with different configuration names.

If a single CEMS is used to monitor multiple units (multiple combustion, or one combustion and one or more process units), Configuration Type 5 should be used instead.

Configuration Type 3 – Aggregation of Units [98.36(c)(1)]

The *aggregation of units* option is a reporting configuration that allows multiple units to be reported as a single entity, provided that certain conditions are met. If this reporting option is selected, emissions from all units grouped in this configuration will be reported as combined emissions in e-GGRT.

If a facility contains two or more units, each of which has a maximum rated heat input capacity of 250 mmBtu/hr or less, you may report these units as a single reporting configuration of Type 3 in e-GGRT, provided that only Tiers 1-3 are used and the units use the same tier for any common fuels combusted. Fuels of different types may use different tiers, as permitted. There is no limit on the number of units that may be included in this configuration provided the previous criteria are met.

While the use of Tier 3 is permitted to be used in an *aggregation of units* configuration, it is generally not required for configurations of this type as Tier 3 is only required for certain units larger than 250 mmBtu/hr. Units of that size may not be included in the *aggregation of units* configuration.

Configuration Type 4 – Common Pipe [98.36(c)(3)]

The *common pipe* reporting configuration is another alternative reporting option that allows for multiple units to be reported as a single group entry.

This configuration is different from the *aggregation of units* configuration in that there is no size constraint. The *common pipe* configuration may only be used if two or more stationary combustion units at a facility combust the same type of liquid or gaseous fuel and the fuel is fed to the individual units through a common supply line or pipe.

The *common pipe* configuration may only be used if the units only combust the liquid or gaseous fuel supplied by the common pipe. Units that combust fuel other than the fuel supplied by the common pipe must be accounted for under a separate configuration. For example, a unit that burns coal and natural gas may not be included in a common pipe configuration for units that only combust natural gas. In such a situation, you may report the units that only combust natural gas as a *common pipe* configuration. To calculate emissions for the common pipe, you would subtract the quantity of diverted gas (i.e. gas combusted at a coal unit) from the quantity of gas measured for the common pipe by using company records. The diverted gas would need to be accounted for in a separate configuration (unless diverted offsite or to an exempt unit).

The tier required for the *common pipe* configuration is based on the maximum rated heat input capacity of the largest unit served by the common pipe.

Configuration Type 5 – Common Stack [98.36(c)(2)]

If multiple units vent to a common stack or duct and Tier 4 is used to calculate the CO₂ emissions for those units, the *common stack* configuration must be used. If only a single combustion unit vents to the stack and no process units are vented to the stack, then Configuration Type 2 (single unit using Tier 4) should be used.

Configuration Type 6 – Alternative Part 75 Reporters [98.36(d)(2)]

This configuration represents the alternative calculation and reporting requirements available to certain units that report heat input year-round to EPA according to part 75. Units subject to subpart D (electricity generating units that are subject to the Acid Rain Program or EGUs that are otherwise required to monitor and report to EPA CO₂ emissions year-round according to Part 75) would not be eligible to report under this option. Units subject to subpart D should report following the instructions for subpart D.

If this option is selected in place of using one of the 4 tiers, the applicable calculation methodology specified in 98.33(a)(5) must be used to calculate CO₂ emissions and the reporting requirements specified in 98.36(d)(2) replace the requirements specified in 98.36(a)-(b).

Configuration-Level Emissions Information

Once a configuration is added, the user will be prompted to input information that will serve to identify the configuration. The identification elements are listed below for each configuration type:

Configuration Types 1, 3 and 4

Note: Configuration Type 1 pictured.

[Click image to expand](#)

The screenshot shows the EPA e-GGRT web application. The top navigation bar includes links for HOME, FACILITY REGISTRATION, FACILITY MANAGEMENT, and DATA REPORTING. The main content area is titled "Subpart C: General Stationary Fuel Combustion (2011)" and includes a "CONFIGURATION LEVEL EMISSIONS" section. This section contains a "CONFIGURATION" table with fields for "Unit or Group Name/ID" and "Configuration Type". Below this is a "SORBENT EMISSIONS" section with a text box for "Annual CO₂ emissions from sorbent (metric tons)". There is also a "CO₂ FOR ALL FUELS" section with a text box for "Total annual biogenic CO₂ mass emissions (metric tons)". A right-hand panel displays summary statistics: "Annual CO₂ from Sorbent (metric tons)" and "Annual CO₂ from biomass fuels (metric tons)". At the bottom of the form are "CANCEL" and "SAVE" buttons.

For configurations of **Type 1 (single unit using Tiers 1, 2, or 3)**, subpart C requires the following additional information aggregated at the configuration-level:

- The total annual biogenic CO₂ mass emissions. This includes both CO₂ emissions from the combustion of biomass fuels and the biogenic portion of CO₂ emissions from fuels with a mixed biogenic and fossil component [98.36(b)(8)(ii)]
- The total annual CO₂ mass emissions from sorbent [98.36(b)(10)]

For configurations of **Type 3 (aggregation of units)**, subpart C requires the following additional information aggregated at the configuration-level:

- The total annual biogenic CO₂ mass emissions. This includes both CO₂ emissions from the combustion of biomass fuels and the biogenic portion of CO₂ emissions from fuels with a mixed biogenic and fossil component [98.36(c)(1)(vi)]
- The total annual CO₂ mass emissions from the combustion of fossil fuels. This includes both CO₂ emissions from all fossil fuels and the fossil portion of CO₂ emissions from fuels with a mixed biogenic and fossil component [98.36(c)(1)(vi)]
- The total annual CO₂ mass emissions from sorbent [98.36(c)(1)(x)]

For configurations of **Type 4 (non-CEMS group of units sharing common fuel supply pipe)**, subpart C requires the following additional information aggregated at the configuration-level:

- The total annual biogenic CO₂ mass emissions. This includes both CO₂ emissions from the combustion of biomass fuels and the biogenic portion of CO₂ emissions from fuels with a mixed biogenic and fossil component [98.36(c)(3)(vi)]
- The total annual CO₂ mass emissions from the combustion of fossil fuels. This includes both CO₂ emissions from all fossil fuels and the fossil portion of CO₂ emissions from fuels with a mixed biogenic and fossil component [98.36(c)(3)(vi)]

Use the text boxes to enter the required information for your configuration type.

When finished, click SAVE.

Configuration Types 2 and 5

Click image to expand

Facility ABC (2010)
Subpart C: General Stationary Fuel Combustion
 Subpart C Overview » Common Stack or Duct (CEMS) » **Configuration Level Emissions**

CONFIGURATION LEVEL EMISSIONS
 Use this page to enter the annual emissions information for this stationary combustion configuration. For additional information about the data collected on this page, please use the e-GGRT Help link(s) provided.

CONFIGURATION:
 Unit or Group Name-ID: CS-Highly
 Configuration Type: Common Stack or Duct (CEMS)
 Calculation Methodology Period: 01/01/2010 - 12/31/2010

CUMULATIVE CO₂ EMISSIONS
 Quarter 1: (metric tons)
 Quarter 2: (metric tons)
 Quarter 3: (metric tons)
 Quarter 4: (metric tons)

ANNUAL CO₂ EMISSIONS
 Total annual CO₂ mass emissions measured by the CEMS: (metric tons)
 Check this box to indicate that the emissions reported for the CEMS include emissions calculated according to 98.33(a)(4)(viii) for a slipstream that bypassed the CEMS: ☐
 Total annual biogenic CO₂ mass emissions: (metric tons)
 Total annual non-biogenic CO₂ mass emissions (includes fossil fuel, solvent, and process CO₂ emissions): (metric tons)

ADDITIONAL EMISSIONS INFORMATION
 Total number of source operating hours in the reporting year: (hours)
 The total operating hours in which a substitute data value was used in the emissions calculations for CO₂ concentration: (hours)
 The total operating hours in which a substitute data value was used in the emissions calculations for stack gas flow rate: (hours)
 The total operating hours in which a substitute data value was used in the emissions calculations for stack gas moisture content (if moisture correction is required and a continuous moisture monitor is used): (hours)

BIOGENIC CO₂ EMISSIONS
 Biogenic CO₂ emissions were estimated using the methodology described by Equations C-12, C-13, and C-14. See section 98.33(e)(2): ☐ (check if true)

CANCEL SAVE

Paperwork Reduction Act Burden Statement | Contact Us e-GGRT RV(2010)R.59 | SPC-11

For configurations of **Type 2 (single unit using Tier 4)** and **Type 5 (monitored common stack or duct configurations)**, subpart C requires the following additional information aggregated at the configuration-level:

- The cumulative CO₂ mass emissions for each quarter during the reporting year. The cumulative value is the sum of hourly emissions for the respective quarter only (for example, for the fourth quarter, the emissions will be summed for the fourth quarter only, not from all four quarters in the year). This value will include both biogenic and non-biogenic emissions [98.36(e)(2)(vi)(B)]
- The total annual biogenic CO₂ mass emissions. This includes both CO₂ emissions from the combustion of biomass fuels and the biogenic portion of CO₂ emissions from fuels with a mixed biogenic and fossil component [98.36(b)(9)(ii), 98.36(c)(2)(viii)]
- The total annual non-biogenic CO₂ mass emissions (i.e. CO₂ mass emissions from fossil fuels, sorbent use, and process emissions) [98.36(b)(9)(ii), 98.36(c)(2)(viii)]
- The total annual CO₂ mass emissions measured by the CEMS. This will include both biogenic and non-biogenic emissions [98.36(b)(9)(1)-(ii), 98.36(c)(2)(viii)]
- An indication (check box) if emissions reported for the CEMS include emissions calculated according to 98.33(a)(4)(viii) for a slipstream that bypassed the CEMS [98.33(a)(4)(viii)]
- The total number of source operating hours in the reporting year [98.36(e)(2)(vi)(A)]
- The total operating hours in which a substitute data value was used in the emissions calculations for the CO₂ concentration parameter (if an O₂ monitor is used to calculate CO₂ concentration, report missing data for the O₂ monitor here) [98.36(e)(2)(vi)(C), 98.3(c)(8)]
- The total operating hours in which a substitute data value was used in the emissions calculations for the stack gas flow rate parameter [98.36(e)(2)(vi)(C), 98.3(c)(8)]
- The total operating hours in which a substitute data value was used in the emissions calculations for the stack gas moisture content parameter (if moisture correction is required and a continuous moisture monitor is used) [98.36(e)(2)(vi)(C), 98.3(c)(8)]
- An indication (check box) of whether biogenic CO₂ mass emissions were estimated using the methodology described by Equations C-12, C-13, and C-14 (See section 98.33(e)(2))

If biogenic CO₂ emissions were estimated using the methodology described by Equations C-12, C-13, and C-14, the following additional information is required by subpart C for configurations of Type 2:

- The total annual volume of CO₂ emitted from the combustion of all fuels [98.36(e)(2)(ix)(A)]
- The total annual volume of CO₂ emitted from the combustion of all fossil fuels [98.36(e)(2)(ix)(B)]
- The total annual volume of CO₂ emitted from the combustion of all biomass fuels [98.36(e)(2)(ix)(C)]
- The total annual biogenic CO₂ mass emissions calculated using the procedures in 98.33(e)(2) [98.36(e)(2)(ix)(G)]

Use the text boxes and check box to enter the required information for your configuration type.

When finished, click SAVE.

Configuration Type 6 (year-round Part 75 heat input reporters)

Click image to expand

The screenshot shows the e-GGRT (Electronic Greenhouse Gas Reporting Tool) interface. The top navigation bar includes links for HOME, FACILITY REGISTRATION, FACILITY MANAGEMENT, and DATA REPORTING. The user is logged in as 'ABC Petroleum'. The main section is titled 'Subpart C: General Stationary Fuel Combustion (2011)' and 'Configuration-level Emissions'. The form is for 'Unit 12' and 'Alternative Part 75 Reporters'. It includes fields for 'Part 75 CO2 Methodology' (CEMS calculation method—§ 98.33(a)(5)(ii)), 'Part 75 Heat Input Method' (CEMS), and 'Calculation Methodology Period' (01/01/2011 - 12/31/2011). The 'ANNUAL CO2 EMISSIONS' section has input fields for 'Total annual CO2 mass emissions at the monitored location (include both biogenic and non-biogenic emissions)' and 'Total annual biogenic CO2 mass emissions', both in metric tons. The 'ADDITIONAL EMISSIONS INFORMATION' section has input fields for 'Total number of source operating hours in the reporting year that CO2 concentration was missing', 'Total number of source operating hours in the reporting year that stack gas flow rate was missing', and 'Total number of source operating hours in the reporting year that moisture content was missing'. A note indicates that the last field is required only if applicable. The form has 'CANCEL' and 'SAVE' buttons at the bottom.

For configurations of **Type 6 (year-round Part 75 heat input reporters)**, subpart C requires the following additional information aggregated at the configuration-level:

- The total annual biogenic CO₂ mass emissions. This includes both CO₂ emissions from the combustion of biomass fuels and the biogenic portion of CO₂ emissions from fuels with a mixed biogenic and fossil component [98.36(d)(2)(ii)(I), 98.36(d)(2)(iii)(I)]
 - Report zero for this value if the facility elects to use the option specified in 98.3(c)(12) for the 2010 reporting year (where the facility chooses not to separately report biogenic emissions from part 75 units)
- The total annual CO₂ emissions at the monitored location, as calculated by the applicable part 75 methodology. Include both biogenic and non-biogenic CO₂ in this value. [98.36(d)(2)(ii)(F), 98.36(d)(2)(iii)(F)]
- If CO₂ calculation methodology used was CEMS, the following additional elements are required:
 - The total number of source operating hours in the reporting year that the CO₂ concentration parameter was missing (if an O₂ monitor is used to calculate CO₂ concentration, report missing data for the O₂ monitor here) [98.3(c)(8)]
 - The total number of source operating hours in the reporting year that the stack gas flow rate parameter was missing [98.3(c)(8)]
 - The total number of source operating hours in the reporting year that the moisture content parameter was missing (if a continuous monitor is in use) [98.3(c)(8)]
- If CO₂ calculation methodology used was the Appendix D and G calculation method, the following additional elements are required:
 - Total number of operating hours during the year that fuel flow rate data was missing [98.3(c)(8)]
 - Total number of operating hours during the year that high heating value data was missing [98.3(c)(8)]

Additional information comparing configuration level data collected and that data's presentation in the summary report

Fuel Identification Information

For configurations of all types, subpart C requires you to identify the following for each configuration:

- The fuel types combusted during the reporting year [98.36(b)(4), 98.36(c)(1)(v), 98.36(c)(2)(iv), 98.36(c)(3)(iv), 98.36(d)(2)(ii)(A), and 98.36(d)(2)(iii)(A)]

If a configuration type is selected that uses Tiers 1, 2, or 3, you will be required to specify which equation is used to calculate CO₂ emissions. By identifying which equation is used to calculate emissions, e-GGRT is able to determine which data reporting elements are required for each fuel type.

For Configurations of Type 1 (single unit using Tiers 1, 2, or 3), Type 3 (aggregation of units), **and** Type 4 (common pipe), subpart C requires you to identify the methods used to calculate emissions for each fuel type. Include the following information for each fuel type combusted in the unit:

- Calculation methodology start date and end date, for each fuel type [98.36(b)(6)(ix), 98.36(c)(3)(viii) - (ix)]
- Calculation methodology used for the emissions calculation period specified, for each fuel type [98.36(b)(5), 98.36(c)(1)(vii),

98.36(c)(3)(v)]:

- Tier 1/Equation C-1: Annual fuel combusted, default heating value, and default CO₂ emission factor
 - Tier 1/Equation C-1a: Annual natural gas usage from billing records (therms) and default CO₂ emission factor
 - Tier 1/Equation C-1b: Annual natural gas usage from billing records (mmBtu) and default CO₂ emission factor
 - Tier 2/Equation C-2a: Annual fuel combusted, measured heating value, and default CO₂ emission factor
 - Tier 2/Equation C-2c: Steam generation, ratio of maximum rated heat input capacity to design rated steam output capacity, and default CO₂ emission factor (for MSW and solid fuels listed in Table C-1))
 - Tier 3/Equation C-3: Annual mass of solid fuel combusted and average carbon content of the solid fuel
 - Tier 3/Equation C-4: Annual mass of liquid fuel combusted and average carbon content of the liquid fuel
 - Tier 3/Equation C-5: Annual volume of gaseous fuel combusted, average carbon content of the gaseous fuel, and average molecular weight of the gaseous fuel
- The user should refer to 98.33(b) to determine which Tier is required for each fuel type at the configuration.

Fuel-Level Emissions Information

Once the fuel types and CO₂ calculation method are specified, e-GGRT will prompt the user for fuel specific emissions information. Although units using Tier 4 and alternative part 75 methods are not generally required to calculate fuel specific CO₂ mass emissions, such units are required to report fuel specific CH₄ and N₂O mass emissions. Fuel specific missing data information is reported under this section.

The text below describes how to enter subpart C Stationary Fuel Combustion Sources fuel-level emissions information for each configuration type. The process to edit fuel information for an existing configuration type is essentially similar.

Click image to expand

Click image to expand

Subpart C: General Stationary Fuel Combustion (2011)
Subpart C Overview

OVERVIEW OF SUBPART C REPORTING REQUIREMENTS
Subpart C requires affected facilities to report annual carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) emissions from each stationary combustion unit. First, use this page to identify each stationary combustion reporting configuration (reporting options listed in §98.36) and then enter emissions information required by subpart C for each configuration.
For additional information about subpart C reporting, please use the e-GGRT Help link(s) provided.

CONFIGURATION SUMMARY

Configuration Name or ID	Configuration Type	Status ¹	Delete
12 Single Unit Test	Single Unit Using Tiers 1, 2, or 3	Incomplete	OPEN

[Add a Configuration](#)
[Facility Overview](#)

¹ A status of "Incomplete" means that one or more required data elements are incomplete. For details, refer to the Data Completeness validation messages in your Validation Report by clicking the "View Validation" link above (note: if there are no validation messages for this subpart you will not see this link).

123456789101112131415161718192021222324252627282930313233343536373839404142434445464748495051525354555657585960616263646566676869707172737475767778798081828384858687888990919293949596979899100

Starting on the Subpart C Overview page, find the configuration type for which you would like to enter emissions information in the CONFIGURATION SUMMARY table and click OPEN.

Click image to expand

Subpart C: General Stationary Fuel Combustion (2011)
 Subpart C Overview • Single Unit Using Tiers 1, 2, or 3 • **Configuration Summary**

CONFIGURATION SUMMARY
 For each stationary combustion configuration that uses Tiers 1, 2, or 3, subpart C requires both the reporting of fuel-specific emissions information and the reporting of emissions information aggregated at the configuration-level.

While both Fuel-Specific and Configuration-Level emissions are required in all cases, there is no order requirement on which must be entered first. If using the optional calculation spreadsheets, it is recommended that the user enter Fuel-Specific Emissions information first. Links to the spreadsheets are provided on each Fuel-Specific Emissions page.

To be able to enter the Fuel-Specific Emissions pages, the user must first select the relevant fuel (one at a time), and then the corresponding CO₂ calculation methodology. Once a fuel is added the user may open the page for a specific fuel type to enter the required fuel-specific emissions information.

For additional information about subpart C reporting, please use the e-GGRT Help link(s) provided.

CONFIGURATION INFORMATION

Configuration Type	Single Unit Using Tiers 1, 2, or 3
Unit Name/ID	Single Unit Test
Description	testing
Unit Type	PCWD (Pulverized coal, wall-fired, dry bottom)
Maximum Rated Heat Input Capacity	3500 (mmBtu/hr)

[Edit this Configuration Information](#)

CONFIGURATION LEVEL EMISSIONS INFORMATION

Total Biogenic CO ₂ Emissions (metric tons)	Total CO ₂ Emissions from Sorbent Usage (metric tons)	Status ¹
		Incomplete OPEN

FUEL-SPECIFIC EMISSIONS INFORMATION (for fuels combusted at this reporting configuration)

Fuel	Calculation Period	Methodology	Status ¹	Delete
No fuels present				

[ADD a Fuel](#)

[Subpart C Overview](#)

¹ A status of "Incomplete" means that one or more required data elements are incomplete. For details, refer to the Data Completeness validation messages in your Validation Report by clicking the "View Validation" link on the overview page. (Note: if there are no validation messages for this subpart you will not see this link.)

To enter emissions information by fuel type, find the fuel type for which you would like to enter fuel emissions data in the FUEL-SPECIFIC EMISSIONS INFORMATION table and click OPEN.

The data entry screen will vary depending on the calculation methodology (tier and equation).

Tier 1 (Equation C-1, C-1a, or C-1b)

Click image to expand

Subpart C: General Stationary Fuel Combustion (2011)
 Subpart C Overview • Single Unit Using Tiers 1, 2, or 3 • **Fuel specific Emissions**

FUEL-SPECIFIC EMISSIONS
 Use this page to enter the annual greenhouse gas emissions information for this fuel. The user is required to enter CO₂, CH₄, N₂O, sampling frequency and missing data information (as applicable) for each fuel type. For additional information about the data collected on this page, please use the e-GGRT Help link(s) provided.

CONFIGURATION-FUEL PERIOD

Unit or Group Name/ID	Test
Configuration Type	Single Unit Using Tiers 1, 2, or 3
Fuel (Fuel Type)	Natural Gas (Weighted U.S. Average) (Natural Gas)
Reporting Period	01/01/2011 - 12/31/2011

EQUATION C-1 SUMMARY AND RESULT

$$CO_2 = 1 \times 10^{-3} \times Fuel \times HHV \times EF$$

Hover over an element in the equation above to reveal a definition of that element.

Annual CO₂ emissions from combustion of the specified fuel (include both biogenic and non-biogenic emissions) (metric tons)
[Use Equation C-1/C-8 spreadsheet to calculate](#)

EQUATION C-8 SUMMARY AND RESULTS

$$CH_4 \text{ or } N_2O = 1 \times 10^{-3} \times Fuel \times HHV \times EF$$

Hover over an element in the equation above to reveal a definition of that element.

Annual CH₄ emissions from combustion of the specified fuel (metric tons)
[Use Equation C-1/C-8 spreadsheet to calculate](#)

Annual N₂O emissions from combustion of the specified fuel (metric tons)
[Use Equation C-1/C-8 spreadsheet to calculate](#)

CO₂ EQUIVALENT EMISSIONS

CO₂ equivalent value for Annual CH₄ emissions (metric tons)

CO₂ equivalent value for Annual N₂O emissions (metric tons)

[CANCEL](#) [SAVE](#)

For each fuel type (including biomass fuel(s)) for which you have elected to use a **Tier 1 (Equation C-1, C-1a, or C-1b)** methodology, subpart C requires you to report the following information by fuel type:

- The total annual CO₂ mass emissions derived from Equation C-1, Equation C-1a, or Equation C-1b in metric tons CO₂ (this value will include both non-biogenic and biogenic CO₂ as applicable) [98.36(b)(8)(i), 98.36(c)(1)(vi), 98.36(c)(3)(vii)]

- The total annual CH₄ mass emissions derived from Equation C-8, Equation C-8a, or Equation C-8b in metric tons CH₄ and in metric tons CO₂e (for Table C-2 fuels only). Note that e-GGRT will automatically calculate the CO₂e data value [98.36(b)(8)(i), 98.36(c)(1)(vi), 98.36(c)(3)(vii)]
- The total annual N₂O mass emissions derived from Equation C-8, Equation C-8a, or Equation C-8b in metric tons N₂O and in metric tons CO₂e (for Table C-2 fuels only). Note that e-GGRT will automatically calculate the CO₂e data value [98.36(b)(8)(i), 98.36(c)(1)(vi), 98.36(c)(3)(vii)]

Use the red-bordered text boxes to enter the required emissions information.

To calculate the emissions, you have the option of using your own resources or alternatively you may use the following tool and set of instructions:

- Download the spreadsheet tool by clicking the link below one of the red-bordered text boxes labeled “Use Equation C-x/C-y spreadsheet to calculate” (where x indicates the specific Tier 1 equation used to calculate CO₂ emissions and y the specific Tier 1 equation used to calculate CH₄ and N₂O emissions in the spreadsheet)
- Fill in the spreadsheet completely using the instructions provided in the tool
- After completing the spreadsheet, copy the values calculated by the spreadsheet to the red-bordered text boxes on this page

When finished, click SAVE.

Tier 2 (Equations C-2a and C-2b)

Click image to expand

The screenshot shows the EPA e-GGRT interface for Facility ABC (2010). The main section is 'Subpart C: General Stationary Fuel Combustion'. It includes a 'FUEL SPECIFIC EMISSIONS' section with input fields for 'Annual CO₂ emissions from combustion of the specified fuel' (5000), 'Annual CH₄ emissions from combustion of the specified fuel' (1), and 'Annual N₂O emissions from combustion of the specified fuel' (1). Below this is the 'EQUATION C-2a SUMMARY AND RESULT' section, which shows the calculation for CO₂ emissions: $CO_2 = 1 \times 10^{-3} \times \text{Fuel} \times HHV \times EF$. The result is 5000 metric tons. The 'EQUATION C-9a SUMMARY AND RESULTS' section shows the calculation for CH₄ and N₂O emissions: $CH_4 \text{ or } N_2O = 1 \times 10^{-3} \times HHV \times EF \times \text{Fuel}$. The results are 1 metric tons for CH₄ and 1 metric tons for N₂O. The 'CO₂ EQUIVALENT EMISSIONS' section shows the calculation for CO₂ equivalent value for Annual CH₄ emissions (21 metric tons) and Annual N₂O emissions (310 metric tons). The 'HHV SUBSTITUTE DATA INFORMATION' section shows a frequency of 'Weekly' and a list of months for which HHV values are calculated: January, February, March, April, May, June, July, August, September, October, November, December. The interface includes a 'CANCEL' button and a 'SAVE' button.

For each fuel type (including biomass fuel(s)) for which you have elected to use the **Tier 2 (Equation C-2a)** methodology, subpart C requires you to report the following information by fuel type:

- The total annual CO₂ mass emissions derived from Equation C-2a in metric tons CO₂ (this value will include both non-biogenic and biogenic CO₂ as applicable) [98.36(b)(8)(i), 98.36(c)(1)(vi), 98.36(c)(3)(vii)]
- The total annual CH₄ mass emissions derived from Equation C-9a in metric tons CH₄ and in metric tons CO₂e (for Table C-2 fuels only). Note that e-GGRT will automatically calculate the CO₂e data value [98.36(b)(8)(i), 98.36(c)(1)(vi), 98.36(c)(3)(vii)]
- The total annual N₂O mass emissions derived from Equation C-9a in metric tons N₂O and in metric tons CO₂e (for Table C-2 fuels only). Note that e-GGRT will automatically calculate the CO₂e data value [98.36(b)(8)(i), 98.36(c)(1)(vi), 98.36(c)(3)(vii)]
- Identification of each month for which HHVs were calculated using one or more substitute data values [98.36(e)(2)(ii)(C)]
- The frequency of the HHV determinations [98.36(e)(2)(ii)(B)]
 - Hourly

- Daily
- Weekly
- Monthly
- Semiannually
- Quarterly
- Once per fuel lot
- Upon addition of oil to the storage tank
- Other (specify)

Use the red-bordered text boxes to enter the required emissions information.

To calculate the emissions you have the option of using your own resources or alternatively you may use the following tool and set of instructions:

- Download the spreadsheet tool by clicking the link below one of the red-bordered text boxes labeled “Use Equation C-2a/C-9a spreadsheet to calculate”
- Fill in the spreadsheet completely using the instructions provided in the tool
- After completing the spreadsheet, copy the values calculated by the spreadsheet to the red-bordered text boxes on this page

Use the check boxes, plain text box, and drop-down menu to enter the remaining required emissions information.

When finished, click SAVE.

Tier 2 (Equation C-2c)

Click image to expand

The screenshot shows the EPA e-GGRT web application interface for Subpart C: General Stationary Fuel Combustion. The form is titled "General Stationary Fuel Combustion Sources 1 (2010)" and "Subpart C: General Stationary Fuel Combustion". It includes a "FUEL-SPECIFIC EMISSIONS" section with input fields for Annual CO₂, Annual CH₄, and Annual N₂O emissions in metric tons. The "CONFIGURATION-FUEL-PERIOD" section includes fields for Unit or Group Name, Configuration Type, Fuel (Fuel Type), and Reporting Period. The "EQUATION C-4 SUMMARY AND RESULT" section shows the calculation for CO₂ emissions: $CO_2 = \frac{44}{12} \times Fuel \times CC \times 0.001$. The "EQUATION C-8 SUMMARY AND RESULTS" section shows the calculation for CH₄ or N₂O emissions: $CH_4 \text{ or } N_2O = 1 \times 10^{-3} \times Fuel \times HHV \times EF$. The "CO₂ EQUIVALENT EMISSIONS" section shows the calculation for CO₂ equivalent value for Annual CH₄ emissions and CO₂ equivalent value for Annual N₂O emissions. The "CARBON CONTENT SUBSTITUTE DATA INFORMATION" section includes fields for Total number of valid carbon content determinations, Total number of carbon content substitute data values, Frequency of carbon content determinations, and Total number of operating hours in the reporting year for which missing data substitution was used for fuel usage.

For each fuel type (including biomass fuel(s)) for which you have elected to use the **Tier 2 (Equation C-2c)** methodology, subpart C requires you to report the following information by fuel type:

- The total annual CO₂ mass emissions derived from Equation C-2c in metric tons CO₂ (this value will include both non-biogenic and biogenic CO₂ as applicable) [98.36(b)(8)(i), 98.36(c)(1)(vi), 98.36(c)(3)(vii)]
- The total annual CH₄ mass emissions derived from Equation C-9b in metric tons CH₄ and in metric tons CO₂e (for Table C-2 fuels only). Note that e-GGRT will automatically calculate the CO₂e data value [98.36(b)(8)(i), 98.36(c)(1)(vi), 98.36(c)(3)(vii)]
- The total annual N₂O mass emissions derived from Equation C-9b in metric tons N₂O and in metric tons CO₂e (for Table C-2 fuels only). Note that e-GGRT will automatically calculate the CO₂e data value [98.36(b)(8)(i), 98.36(c)(1)(vi), 98.36(c)(3)(vii)]

Use the red-bordered text boxes to enter the required emissions information.

To calculate the emissions you have the option of using your own resources or alternatively you may use the following tool and set of instructions:

- Download the spreadsheet tool by clicking the link below one of the red-bordered text boxes labeled “Use Equation C-2c/C-9b spreadsheet to calculate”
- Fill in the spreadsheet completely using the instructions provided in the tool
- After completing the spreadsheet, copy the values calculated by the spreadsheet to the red-bordered text boxes on this page

Tier 3 (Equation C-3, C-4, or C-5)

Note: Equation C-5 pictured, Equations C-3 and C-4 will not include the MOLECULAR WEIGHT INFORMATION section

Click image to expand

The screenshot displays the EPA e-GGRT interface for Subpart C: General Stationary Fuel Combustion. The top navigation bar includes links for HOME, FACILITY REGISTRATION, FACILITY MANAGEMENT, and DATA REPORTING. The main content area is titled "General Stationary Fuel Combustion Sources 1 (2010)" and "Subpart C: General Stationary Fuel Combustion". It provides instructions for entering annual greenhouse gas emissions information. The interface includes several input fields for "FUEL-SPECIFIC EMISSIONS" (Annual CO2, CH4, and N2O in metric tons) and "CONFIGURATION-FUEL-PERIOD" (Unit or Group Name/ID, Configuration Type, Fuel (Fuel Type), and Reporting Period). Below these are sections for "EQUATION C-4 SUMMARY AND RESULT" (CO2 emissions), "EQUATION C-8 SUMMARY AND RESULTS" (CH4 and N2O emissions), "CO2 EQUIVALENT EMISSIONS", and "CARBON CONTENT SUBSTITUTE DATA INFORMATION". The bottom of the interface features a "CANCEL" button and a "SAVE" button.

For each fuel type (including biomass fuel(s)) for which you have elected to use a **Tier 3 (Equation C-3, C-4, or C-5)** methodology, subpart C requires you to report the following information by fuel type:

- The total annual CO₂ mass emissions derived from Equation C-3 for solid fuels, Equation C-4 for liquid fuels, or Equation C-5 for gaseous fuels in metric tons CO₂ (this value will include both non-biogenic and biogenic CO₂ as applicable) [98.36(b)(8)(i), 98.36(c)(1)(vi), 98.36(c)(3)(vii)]
- The total annual CH₄ mass emissions derived from Equation C-8 in metric tons CH₄ and in metric tons CO₂e (for Table C-2 fuels only). Note that e-GGRT will automatically calculate the CO₂e data value [98.36(b)(8)(i), 98.36(c)(1)(vi), 98.36(c)(3)(vii)]
- The total annual N₂O mass emissions derived from Equation C-8 in metric tons N₂O and in metric tons CO₂e (for Table C-2 fuels only). Note that e-GGRT will automatically calculate the CO₂e data value [98.36(b)(8)(i), 98.36(c)(1)(vi), 98.36(c)(3)(vii)]
- The total number of valid carbon content determinations [98.36(e)(2)(iv)(D)]
- The total number of carbon content substitute data values [98.36(e)(2)(iv)(E)]
- The frequency of carbon content determinations [98.36(e)(2)(iv)(B)]
 - Hourly
 - Daily
 - Weekly
 - Monthly
 - Semiannually
 - Quarterly
 - Once per fuel lot
 - Upon addition of oil to the storage tank
 - Other (specify)
- The total number of operating hours in the reporting year for which missing data substitution was used for fuel usage [98.3(c)(8)]

Use the red-bordered text boxes to enter the required emissions information.

To calculate the emissions you have the option of using your own resources or alternatively you may use the following tool and set of instructions:

- Download the spreadsheet tool by clicking the link below one of the red-bordered text boxes labeled “Use Tier 3 spreadsheet to calculate”
- Fill in the spreadsheet completely using the instructions provided in the tool
- After completing the spreadsheet, copy the values calculated by the spreadsheet to the red-bordered text boxes on this page

For each gaseous fuel at each configuration for which you have elected to use the **Tier 3 (Equation C-5)** methodology, subpart C requires you to report the following additional information:

- Total number of valid molecular weight determinations [98.36(e)(2)(iv)(D)]
- Total number of molecular weight substitute data values [98.36(e)(2)(iv)(E)]
- Frequency of molecular weight determinations [98.36(e)(2)(iv)(B)]
 - Hourly
 - Daily
 - Weekly
 - Monthly
 - Semiannually
 - Quarterly
 - Other (specify)

When finished, click SAVE.

Tier 4 (CEMS)

Click image to expand

The screenshot shows the EPA e-GGRT web application interface for Subpart C: General Stationary Fuel Combustion. The page is titled "General Stationary Fuel Combustion Sources 1 (2010)" and "Subpart C: General Stationary Fuel Combustion". It includes a navigation bar with links like HOME, FACILITY REGISTRATION, FACILITY MANAGEMENT, and DATA REPORTING. The main content area is divided into sections for "FUEL SPECIFIC CH₄ AND N₂O EMISSIONS" and "CO₂ EQUIVALENT EMISSIONS". The "FUEL SPECIFIC CH₄ AND N₂O EMISSIONS" section shows input fields for "Annual CH₄ for CH₄ (metric tons)" with a value of 11.86 and "Annual CO₂e for N₂O (metric tons)" with a value of 17.51. The "CO₂ EQUIVALENT EMISSIONS" section shows input fields for "CO₂ equivalent value for Annual CH₄ emissions" with a value of 11.8655 (metric tons) and "CO₂ equivalent value for Annual N₂O emissions" with a value of 17.5855 (metric tons). Both values are in red-bordered boxes with a link to "Use Equation C-10 spreadsheet to calculate". The configuration details include "Unit or Group Name: CS-61", "Configuration Type: Alternative Part 75 Reporters", "Part 75 Methodology: CEMS calculation method—98.33(a)(5)(ii)", "Part 75 Heat Input Method: CEMS", and "Fuel (Fuel Type): Natural Gas (Weighted U.S. Average) (Natural Gas)".

When a **Tier 4 (CEMS)** configuration is selected, you are required to report the following information for each fuel type listed in Table C-2 (including biomass fuel(s)):

- The total annual CH₄ mass emissions derived from Equation C-10 in metric tons CH₄ and in metric tons CO₂e. Note that e-GGRT will automatically calculate the CO₂e data value [98.36(b)(9)(iii), 98.36(c)(2)(ix)]
- The total annual N₂O mass emissions derived from Equation C-10 in metric tons N₂O and in metric tons CO₂e. Note that e-GGRT will automatically calculate the CO₂e data value [98.36(b)(9)(iii), 98.36(c)(2)(ix)]

Use the red-bordered text boxes to enter the required emissions information.

To calculate the emissions you have the option of using your own resources or alternatively you may use the following tool and set of instructions:

- Download the spreadsheet tool by clicking the link below one of the red-bordered text boxes labeled “Use Tier 4 spreadsheet to calculate”
- Fill in the spreadsheet completely using the instructions provided in the tool
- After completing the spreadsheet, copy the values calculated by the spreadsheet to the red-bordered text boxes on this page

When finished, click SAVE.

Year-Round Part 75 Heat Input Reporters

Click image to expand

For configurations using the alternative CO₂ mass emissions calculation methods provided in **98.33(a)(5) (Year-round Part 75 heat input reporters)**, subpart C requires the following information for each fuel type listed in Table C-2 (including biomass fuel(s)) except as otherwise provided in 98.33(c)(4)(ii)(D)):

- The total annual CH₄ mass emissions derived from Equation C-10 in metric tons CO₂e value is required to be reported for this element [98.36(d)(2)(ii)(H), 98.36(d)(2)(iii)(H)]
- The total annual N₂O mass emissions derived from Equation C-10 in metric tons CO₂e value is required to be reported for this element [98.36(d)(2)(ii)(H), 98.36(d)(2)(iii)(H)]

Subpart Validation Report

You can use the Validation Report to assist with the completeness and quality of your reporting data.

You should use the Validation Report to check your work. The Validation Report performs two types of checks:

- Data Completeness: Data that are required for reporting are missing or incomplete.
- Data Quality: Data are outside of the expected range of values.

You may view the Validation Report at any time.



Note that the Validation Report is intended to assist users in entering data, but it is not an indication that the reporter has entered all necessary information, nor is it an indication that the reporter is in compliance with part 98. Furthermore a negative finding on the validation report is not a guarantee that a data element was entered incorrectly.

[Back to Top](#)

See Also

[Screen Errors](#)
[Subpart C Configurations](#)
[Subpart C Configuration-Level Emissions Information](#)
[Subpart C Fuel Identification Information](#)
[Subpart C Fuel-Level Emissions Information](#)
[Subpart Validation Report](#)

Subpart C Configurations

This topic provides a step-by-step description of how to add a subpart C Stationary Fuel Combustion Sources configuration for a facility.

For stationary combustion sources required to report under subpart C, e-GGRT requires you to identify which reporting option each unit or group of units will be using to report emissions. The different subpart C reporting options are referred to as “Configurations” in e-GGRT. The individual configurations are designed to match the reporting options made available by the rule in 40 CFR 98.36. As specified in part 98, each configuration has slightly different reporting requirements. Once a configuration is added, e-GGRT will allow you to enter the required reporting elements for the configuration type selected. A facility may have multiple configuration types and/or multiple configurations of any given type. A single unit may not be reported under multiple configurations.

Click image to expand

Facility ABC (2011)
Subpart C: General Stationary Fuel Combustion
 Subpart C Overview

OVERVIEW OF SUBPART C REPORTING REQUIREMENTS
 Subpart C requires affected facilities to report annual carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) emissions from each stationary combustion unit. First, use this page to identify each stationary combustion reporting configuration (reporting options listed in §98.36) and then enter emissions information required by subpart C for each configuration.

For additional information about subpart C reporting, please use the e-GGRT Help link(s) provided.

CONFIGURATION SUMMARY

Configuration Name or ID	Configuration Type	Status ¹	Delete
Boiler 1	Single Unit Using Tiers 1, 2, or 3	Complete	OPEN
CS-Duct 2	Common Stack or Duct (CEMS)	Complete	OPEN
GP-South 32	Aggregation of Units	Complete	OPEN
GP-North 34	Aggregation of Units	Complete	OPEN
Unit 45	Alternative Part 75 Reporters	Complete	OPEN

[Add a Configuration](#)
[Facility Overview](#)

¹ A status of "Incomplete" means that one or more required data elements are incomplete. For details, refer to the Data Completeness validation messages in your Validation Report by clicking the "View Validation" link above (Note: if there are no validation messages for this subpart you will not see this link).

Starting on the Subpart C Overview page, click the link titled "ADD a Configuration" below the CONFIGURATION SUMMARY table.

Click image to expand

Total Energy
Subpart C: General Stationary Fuel Combustion (2011)
 Subpart C Overview [New Configuration](#)

SUBPART C REPORTING CONFIGURATIONS
 For stationary combustion sources required to report under subpart C, e-GGRT requires a facility to identify which reporting option each unit or group of units will be using to report emissions. The different subpart C reporting options are referred to as configurations in e-GGRT. The individual configurations are designed to match the reporting options made available by the rule in 40 CFR 98.36.

Once a configuration is added, e-GGRT will allow the user to enter the required reporting elements for the configuration type selected. A facility may have multiple configuration types and/or multiple configurations of any given type.

For additional information about adding and editing a configuration and the different reporting configurations available, please use the e-GGRT Help link(s) provided.

SELECT A REPORTING CONFIGURATION

Select	Reporting Configuration Type	Calculation Methodology	Rule Reference
<input type="radio"/>	Single Unit Using Tiers 1, 2, or 3	Tier 1, 2, or 3	98.36(b)
<input type="radio"/>	Single Unit Using Tier 4 (CEMS)	Tier 4	98.36(b)
<input type="radio"/>	Aggregation of Units	Tier 1, 2, or 3	98.36(c)(1)
<input type="radio"/>	Common Pipe	Tier 1, 2, or 3	98.36(c)(3)
<input type="radio"/>	Common Stack or Duct (CEMS)	Tier 4	98.36(c)(2)
<input type="radio"/>	Alternative Part 75 Reporters	98.33(a)(5)	98.36(d)(2)

[CANCEL](#) [NEXT](#)

The unit or group configuration types are first briefly identified below with the relevant regulatory citation, and then again in more detail:

- Configuration Type 1 - A single unit using Tiers 1, 2 or 3 to calculate emissions [98.36(b)]
- Configuration Type 2 - A single unit using Tier 4 (CEMS) to calculate emissions [98.36(b)]
- Configuration Type 3 - A group of units using the aggregation of units reporting alternative [98.36(c)(1)]
- Configuration Type 4 - A group of units using the common pipe configurations reporting alternative [98.36(c)(3)]
- Configuration Type 5 - A group of units using Tier 4 (CEMS) to calculate emissions and reporting under the monitored common stack or duct configurations reporting alternative [98.36(c)(2)]
- Configuration Type 6 – Part 75 units using the alternative CO₂ mass emissions calculation methods provided in 98.33(a)(5) [98.36(d)(2)]

Configuration Type 1 - Single Unit Using Tiers 1, 2, or 3 [98.36(b)]

The single unit reporting configuration is the most basic configuration type. Any unit may be reported individually in e-GGRT. If the unit uses Tiers 1, 2, or 3 to calculate CO₂ emissions, it must be reported as a configuration of Type 1. If the use of Tier 4 is required or elected, Configuration Type 2 or 5 must be used.

A unit under Configuration Type 1 may combust multiple fuels, and it is possible for the different fuels to be using different tiers. For example, a unit that is 500 mmBtu/hr in size may be required to use Tier 3 for coal, but only Tier 2 for natural gas or fuel oil.

Facilities with numerous units should investigate if Configuration Type 3 (aggregation of units) or Type 4 (common pipe) may be used.

Configuration Type 2 – Single Unit Using Tier 4 [98.36(b)]

Configuration Type 2 is the reporting option for single units that are either required, or elect to use Tier 4 (CEMS). CO₂ emissions will be reported for all fuels combined, but CH₄ and N₂O emissions will still need to be reported on a fuel by fuel basis.

Should a unit change methodology from Tiers 1-3 to Tier 4 during the year, the unit will need to be added as two separate configurations in e-GGRT with different configuration names.

If a single CEMS is used to monitor multiple units (multiple combustion, or one combustion and one or more process units), Configuration Type 5 should be used instead.

Configuration Type 3 – Aggregation of Units [98.36(c)(1)]

The *aggregation of units* option is a reporting configuration that allows multiple units to be reported as a single entity, provided that certain conditions are met. If this reporting option is selected, emissions from all units grouped in this configuration will be reported as combined emissions in e-GGRT.

If a facility contains two or more units, each of which has a maximum rated heat input capacity of 250 mmBtu/hr or less, you may report these units as a single reporting configuration of Type 3 in e-GGRT, provided that only Tiers 1-3 are used and the units use the same tier for any common fuels combusted. Fuels of different types may use different tiers, as permitted. There is no limit on the number of units that may be included in this configuration provided the previous criteria are met.

While the use of Tier 3 is permitted to be used in an *aggregation of units* configuration, it is generally not required for configurations of this type as Tier 3 is only required for certain units larger than 250 mmBtu/hr. Units of that size may not be included in the *aggregation of units* configuration.

Configuration Type 4 – Common Pipe [98.36(c)(3)]

The *common pipe* reporting configuration is another alternative reporting option that allows for multiple units to be reported as a single group entry.

This configuration is different from the *aggregation of units* configuration in that there is no size constraint. The *common pipe* configuration may only be used if two or more stationary combustion units at a facility combust the same type of liquid or gaseous fuel and the fuel is fed to the individual units through a common supply line or pipe.

The *common pipe* configuration may only be used if the units only combust the liquid or gaseous fuel supplied by the common pipe. Units that combust fuel other than the fuel supplied by the common pipe must be accounted for under a separate configuration. For example, a unit that burns coal and natural gas may not be included in a common pipe configuration for units that only combust natural gas. In such a situation, you may report the units that only combust natural gas as a *common pipe* configuration. To calculate emissions for the common pipe, you would subtract the quantity of diverted gas (i.e. gas combusted at a coal unit) from the quantity of gas measured for the common pipe by using company records. The diverted gas would need to be accounted for in a separate configuration (unless diverted offsite or to an exempt unit).

The tier required for the *common pipe* configuration is based on the maximum rated heat input capacity of the largest unit served by the common pipe.

Configuration Type 5 – Common Stack [98.36(c)(2)]

If multiple units vent to a common stack or duct and Tier 4 is used to calculate the CO₂ emissions for those units, the *common stack* configuration must be used. If only a single combustion unit vents to the stack and no process units are vented to the stack, then Configuration Type 2 (single unit using Tier 4) should be used.

Configuration Type 6 – Alternative Part 75 Reporters [98.36(d)(2)]

This configuration represents the alternative calculation and reporting requirements available to certain units that report heat input year-round to EPA according to part 75. Units subject to subpart D (electricity generating units that are subject to the Acid Rain Program or EGUs that are otherwise required to monitor and report to EPA CO₂ emissions year-round according to Part 75) would not be eligible to report under this option. Units subject to subpart D should report following the instructions for subpart D.

If this option is selected in place of using one of the 4 tiers, the applicable calculation methodology specified in 98.33(a)(5) must be used to calculate CO₂ emissions and the reporting requirements specified in 98.36(d)(2) replace the requirements specified in 98.36(a)-(b).

Use the radio buttons to select a configuration type.

When finished, click NEXT.

The next screen will vary slightly depending on the configuration type selected.

Click image to expand

United States Environmental Protection Agency

e-GGRT Electronic Greenhouse Gas Reporting Tool

HOME FACILITY REGISTRATION FACILITY MANAGEMENT DATA REPORTING

e-GGRT Help

Using e-GGRT for Subpart C Reporting

General Stationary Fuel Combustion Sources 1 (2010)

Subpart C: General Stationary Fuel Combustion

Subpart C Overview • Single Unit Using Tiers 1, 2, or 3 • **Edit Configuration Information**

CONFIGURATION INFORMATION

For stationary combustion sources required to report under subpart C, e-GGRT requires a facility to identify which reporting option each unit or group of units will be using to report emissions. The different subpart C reporting options are referred to as configurations in e-GGRT. The individual configurations are designed to match the reporting options made available by the rule in 40 CFR 98.36.

Once a configuration is added, e-GGRT will allow the user to enter the required reporting elements for the configuration type selected. A facility may have multiple configuration types and multiple configurations of any given type.

For additional information about adding and editing a configuration and the different reporting configurations available, please use the e-GGRT Help links provided.

* denotes a required field

Configuration Type: Single Unit Using Tiers 1, 2, or 3

Unit Name/ID*: Unit 11 (40 characters maximum)

Description (optional): CC Turbine

Unit Type*: CC (Turbine, combined cycle)

Maximum Rated Heat Input Capacity*: 300

Unit of Measure*: mmBtu/hr

CANCEL SAVE

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e-GGRT R(2010) R.44 | SP-C-08

Once a configuration is added, you will be prompted to input information that will serve to identify the configuration. The identification elements are listed below for each configuration type:

For configurations of **Type 1 (single unit using Tiers 1, 2, or 3)**, subpart C requires the following identification information for each configuration:

- A unique unit name or identifier (e.g., a unit ID number) [98.36(b)(1)]
- An optional description or label [optional]
- A code representing the type of unit [98.36(b)(2)]
 - If the unit type is not provided in the given pick list, the user should select the type “OCS (Other combustion source)” and specify an appropriate unit type in the free text field
- The value of the maximum rated heat input capacity of the unit in mmBtu/hr (boilers and process heaters must use mmBtu/hr, if mmBtu/hr is not applicable for other unit types, use another relevant unit of measure) [98.36(b)(3)]

For configurations of **Type 2 (single unit using Tier 4)**, subpart C requires the following identification information for each configuration:

- A unique unit name or identifier (e.g., a unit ID number) [98.36(b)(1)]
- An optional description or label [optional]
- A code representing the type of unit [98.36(b)(2)]
- The value of the maximum rated heat input capacity of the unit in mmBtu/hr (boilers and process heaters must use mmBtu/hr, if mmBtu/hr is not applicable for other unit types, use another relevant unit of measure) [98.36(b)(3)]
- The methodology start date and end date, for the unit [98.36(b)(6)-(7)]

For configurations of **Type 3 (aggregation of units)**, subpart C requires the following identification information for each configuration:

- A unique name or identifier that begins with the prefix “GP” [98.36(c)(1)(i)]
- An optional description or label [optional]
- The highest maximum rated heat input capacity of any unit in the group in mmBtu/hr [98.36(c)(1)(iv)]

For configurations of **Type 4 (common pipe configurations)**, subpart C requires the following identification information for each configuration:

- A unique name or identifier that begins with the prefix “CP” [98.36(c)(3)(i)]
- An optional description or label [optional]
- The highest maximum rated heat input capacity of any unit served by the common pipe in mmBtu/hr [98.36(c)(3)(iii)]

For configurations of **Type 5 (monitored common stack or duct configurations)**, subpart C requires the following identification information for each configuration:

- A unique name or identifier that begins with the prefix “CS” [98.36(c)(2)(i)]
- An optional description or label [optional]
- The number of units sharing the common stack [98.36(c)(2)(ii)]
- The combined maximum rated heat input capacity of the units sharing the common stack in mmBtu/hr [98.36(c)(2)(iii)]
- The methodology start date and end date, for the configuration [98.36(c)(2)(vi)-(vii)]

For configurations of **Type 6 (year-round Part 75 heat input reporters)**, subpart C requires the following identification information for each configuration:

- Unit, stack, or pipe ID numbers: use exact same unit, common stack, common pipe, or multiple stack identification numbers that represent the monitored locations (e.g., 1, 2, CS001, MS1A, CP001, etc.) that are reported under 40 CFR 75.64 [98.36(d)(2)(i)]
- An optional description or label [optional]
- The Part 75 methodology used to calculate the CO₂ mass emissions (Appendix D and G calculation method, Low Mass Emissions calculation method in 40 CFR 75.19, or CEMS calculation method) [98.36(d)(2)(ii)(B), 98.36(d)(2)(iii)(B)]
- An indication of the Part 75 heat input method used (Appendix D method, Low Mass Emissions calculation method in 40 CFR 75.19, or CEMS calculation method) [98.36(d)(2)(ii)(E), 98.36(d)(2)(iii)(E)]
- The methodology start date and end date [98.36(d)(2)(ii)(C)-(D)]

Use the text boxes and drop-down menus to enter the required information for the configuration type selected.

When finished, click SAVE.

Click image to expand

Facility ABC (2011)
Subpart C: General Stationary Fuel Combustion
[Subpart C Overview](#)

OVERVIEW OF SUBPART C REPORTING REQUIREMENTS
Subpart C requires affected facilities to report annual carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) emissions from each stationary combustion unit. First, use this page to identify each stationary combustion reporting configuration (reporting options listed in §98.36) and then enter emissions information required by subpart C for each configuration.
For additional information about subpart C reporting, please use the e-GGRT Help link(s) provided.

EPA has finalized a rule that defers the deadline for reporting data elements used as inputs to emission equations for direct emitters. See 76 FR 53057 (published August 25, 2011). In accordance with the rule, e-GGRT is not currently collecting data used as inputs to emission equations.

Subpart C: No Validation Messages

CONFIGURATION SUMMARY

Configuration Name or ID	Configuration Type	Status ¹	Delete
Boiler 1	Single Unit Using Tiers 1, 2, or 3	Complete	OPEN
CS- Duct 2	Common Stack or Duct (CEMS)	Complete	OPEN
GP- South 32	Aggregation of Units	Complete	OPEN
GP-North 34	Aggregation of Units	Complete	OPEN
Unit 46	Alternative Part 75 Reporters	Complete	OPEN

[Add a Configuration](#)
[Facility Overview](#)

¹ A status of "Incomplete" means that one or more required data elements are incomplete. For details, refer to the Data Completeness validation messages in your Validation Report by clicking the "View Validation" link above (note: if there are no validation messages for this subpart you will not see this link).

Paperwork Reduction Act Burden Statement | Contact Us e-GGRT RY2011 R.11 | SPC-01

To edit an existing configuration, click on the edit icon or the Configuration Name or ID link in the first column of the CONFIGURATION SUMMARY table.

To delete an existing configuration, click on the delete icon in the last column of the CONFIGURATION SUMMARY table.

[Back to Top](#)

See Also

Screen Errors

[Using e-GGRT to Prepare Your Subpart C Report](#)

[Subpart C Configuration-Level Emissions Information](#)

[Subpart C Fuel Identification Information](#)

[Subpart C Fuel-Level Emissions Information](#)

[Subpart Validation Report](#)

Subpart C Configuration-Level Emissions Information

This section of the reporting instructions specifies the requirements for reporting emissions information that is aggregated at the configuration-level. Configuration-level emissions will include the emissions from all fuels combusted in a given configuration. Users are required to report both configuration-level and fuel-specific information for all configuration types. As with the identification information, each configuration has unique reporting requirements for emissions information.

The text below describes how to enter subpart C General Stationary Fuel Combustion Sources configuration-level emissions information. The process to edit an existing configuration type is essentially similar.

Click image to expand

ABC Petroleum
Subpart C: General Stationary Fuel Combustion (2011)
[Subpart C Overview](#)

OVERVIEW OF SUBPART C REPORTING REQUIREMENTS
Subpart C requires affected facilities to report annual carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) emissions from each stationary combustion unit. First, use this page to identify each stationary combustion reporting configuration (reporting options listed in §98.36) and then enter emissions information required by subpart C for each configuration.
For additional information about subpart C reporting, please use the e-GGRT Help link(s) provided.

EPA has finalized a rule that defers the deadline for reporting data elements used as inputs to emission equations for direct emitters. See 76 FR 53057 (published August 25, 2011). In accordance with the rule, e-GGRT is not currently collecting data used as inputs to emission equations.

Subpart C: View Validation

CONFIGURATION SUMMARY

Configuration Name or ID	Configuration Type	Status ¹	Delete
Single Unit Test	Single Unit Using Tiers 1, 2, or 3	Incomplete	OPEN

[Add a Configuration](#)
[Facility Overview](#)

¹ A status of "Incomplete" means that one or more required data elements are incomplete. For details, refer to the Data Completeness validation messages in your Validation Report by clicking the "View Validation" link above (note: if there are no validation messages for this subpart you will not see this link).

Paperwork Reduction Act Burden Statement | Contact Us e-GGRT RY2011 R.12 | SPC-01

Starting on the Subpart C Overview page, find the configuration type for which you would like to enter emissions information in the CONFIGURATION SUMMARY table and click OPEN.

Click image to expand

ABC Petroleum
Subpart C: General Stationary Fuel Combustion (2011)
[Subpart C Overview](#) • [Single Unit Using Tiers 1, 2, or 3](#) • [Configuration Summary](#)

CONFIGURATION SUMMARY
 For each stationary combustion configuration that uses Tiers 1, 2, or 3, subpart C requires both the reporting of fuel-specific emissions information and the reporting of emissions information aggregated at the configuration-level.

While both Fuel-Specific and Configuration-Level emissions are required in all cases, there is no order requirement on which must be entered first. If using the optional calculation spreadsheets, it is recommended that the user enter Fuel-Specific Emissions information first. Links to the spreadsheets are provided on each Fuel-Specific Emissions page.

To be able to enter the Fuel-Specific Emissions pages, the user must first select the relevant fuel (one at a time), and then the corresponding CO₂ calculation methodology. Once a fuel is added the user may open the page for a specific fuel type to enter the required fuel-specific emissions information.

For additional information about subpart C reporting, please use the e-GGRT Help link(s) provided.

CONFIGURATION INFORMATION

Configuration Type	Single Unit Using Tiers 1, 2, or 3
Unit Name/ID	Single Unit Test
Description	testing
Unit Type	PCWD (Pulverized coal, walk-fired, dry bottom)
Maximum Rated Heat Input Capacity	3600 (mmBtu/hr)

[Edit this Configuration Information](#)

CONFIGURATION-LEVEL EMISSIONS INFORMATION

Total Biogenic CO ₂ Emissions (metric tons)	Total CO ₂ Emissions from Sorbent Usage (metric tons)	Status ¹
		Incomplete OPEN

FUEL-SPECIFIC EMISSIONS INFORMATION (for fuels combusted at this reporting configuration)

Fuel	Calculation Period	Methodology	Status ¹	Delete
No fuels present				

[ADD a Fuel](#)

[Subpart C Overview](#)

¹ A status of "Incomplete" means that one or more required data elements are incomplete. For details, refer to the Data Completeness validation messages in your Validation Report by clicking the "View Validation" link on the overview page. (Note: if there are no validation messages for this subpart you will not see this link.)

To edit a specific configuration, click the "Edit this Configuration Information" link above the CONFIGURATION-LEVEL EMISSIONS INFORMATION table.

Click image to expand

General Stationary Fuel Combustion Sources 1 (2010)
Subpart C: General Stationary Fuel Combustion
[Subpart C Overview](#) • [Single Unit Using Tiers 1, 2, or 3](#) • [Edit Configuration Information](#)

CONFIGURATION INFORMATION
 For stationary combustion sources required to report under subpart C, e-GGRT requires a facility to identify which reporting option each unit or group of units will be using to report emissions. The different subpart C reporting options are referred to as configurations in e-GGRT. The individual configurations are designed to match the reporting options made available by the rule in 40 CFR 98.35.

Once a configuration is added, e-GGRT will allow the user to enter the required reporting elements for the configuration type selected. A facility may have multiple configuration types and multiple configurations of any given type.

For additional information about adding and editing a configuration and the different reporting configurations available, please use the e-GGRT Help link(s) provided. * denotes a required field

Configuration Type Single Unit Using Tiers 1, 2, or 3

Unit Name/ID * (40 characters maximum)

Description (optional)

Unit Type *

Maximum Rated Heat Input Capacity *

Unit of Measure *

[CANCEL](#) [SAVE](#)

Use the text boxes and drop-down menus to update the entered information.

When finished, click SAVE.

Click image to expand

Subpart C: General Stationary Fuel Combustion (2011)
 Subpart C Overview • Single Unit Using Tiers 1, 2, or 3 • **Configuration Summary**

CONFIGURATION SUMMARY
 For each stationary combustion configuration that uses Tiers 1, 2, or 3, subpart C requires both the reporting of fuel-specific emissions information and the reporting of emissions information aggregated at the configuration-level.

While both Fuel-Specific and Configuration-Level emissions are required in all cases, there is no order requirement on which must be entered first. If using the optional calculation spreadsheets, it is recommended that the user enter Fuel-Specific Emissions information first. Links to the spreadsheets are provided on each Fuel-Specific Emissions page.

To be able to enter the Fuel-Specific Emissions pages, the user must first select the relevant fuel (one at a time), and then the corresponding CO₂ calculation methodology. Once a fuel is added the user may open the page for a specific fuel type to enter the required fuel-specific emissions information.

For additional information about subpart C reporting, please use the e-GGRT Help link(s) provided.

CONFIGURATION INFORMATION

Configuration Type	Single Unit Using Tiers 1, 2, or 3
Unit Name/ID	Single Unit Test
Description	testing
Unit Type	PCWD (Pulverized coal, wall-fired, dry bottom)
Maximum Rated Heat Input Capacity	3500 (mmBtu/hr)

[Edit this Configuration Information](#)

CONFIGURATION LEVEL EMISSIONS INFORMATION

Total Biogenic CO ₂ Emissions (metric tons)	Total CO ₂ Emissions from Sorbent Usage (metric tons)	Status ¹
		Incomplete OPEN

FUEL-SPECIFIC EMISSIONS INFORMATION (for fuels combusted at this reporting configuration)

Fuel	Calculation Period	Methodology	Status ¹	Delete
No fuels present				

[ADD a Fuel](#)

[Subpart C Overview](#)

¹ A status of "Incomplete" means that one or more required data elements are incomplete. For details, refer to the Data Completeness validation messages in your Validation Report by clicking the "View Validation" link on the overview page. (Note: if there are no validation messages for this subpart you will not see this link.)

To enter emissions information for this configuration, find the CONFIGURATION EMISSIONS INFORMATION table and click EMISSIONS.

The data entry screen will vary depending on the configuration type.

Configuration Types 1, 3 and 4

Note: Configuration Type 1 pictured.

Click image to expand

Subpart C: General Stationary Fuel Combustion (2011)
 Subpart C Overview • Single Unit Using Tiers 1, 2, or 3 • **Configuration level Emissions**

CONFIGURATION LEVEL EMISSIONS
 Use this page to enter the annual greenhouse gas emissions information for this stationary combustion configuration. For additional information about the data collected on this page, please use the e-GGRT Help link(s) provided.

CONFIGURATION INFORMATION

Unit or Group Name/ID	Single Unit Test
Configuration Type	Single Unit Using Tiers 1, 2, or 3

SORBENT EMISSIONS

Annual CO ₂ emissions from sorbent	(metric tons)
---	---------------

CO₂ FOR ALL FUELS

Total annual biogenic CO ₂ mass emissions	(metric tons)
--	---------------

[CANCEL](#) [SAVE](#)

For configurations of **Type 1 (single unit using Tiers 1, 2, or 3)**, subpart C requires the following additional information aggregated at the configuration-level:

- The total annual biogenic CO₂ mass emissions. This includes both CO₂ emissions from the combustion of biomass fuels and the biogenic portion of CO₂ emissions from fuels with a mixed biogenic and fossil component [98.36(b)(8)(ii)]
- The total annual CO₂ mass emissions from sorbent [98.36(b)(10)]

For configurations of **Type 3 (aggregation of units)**, subpart C requires the following additional information aggregated at the configuration-level:

- The total annual biogenic CO₂ mass emissions. This includes both CO₂ emissions from the combustion of biomass fuels and the biogenic portion of CO₂ emissions from fuels with a mixed biogenic and fossil component [98.36(c)(1)(vi)]
- The total annual CO₂ mass emissions from the combustion of fossil fuels. This includes both CO₂ emissions from all fossil fuels and the fossil portion of CO₂ emissions from fuels with a mixed biogenic and fossil component [98.36(c)(1)(vi)]
- The total annual CO₂ mass emissions from sorbent [98.36(c)(1)(x)]

For configurations of **Type 4 (non-CEMS group of units sharing common fuel supply pipe)**, subpart C requires the following additional information aggregated at the configuration-level:

- The total annual biogenic CO₂ mass emissions. This includes both CO₂ emissions from the combustion of biomass fuels and the biogenic portion of CO₂ emissions from fuels with a mixed biogenic and fossil component [98.36(c)(3)(vi)]
- The total annual CO₂ mass emissions from the combustion of fossil fuels. This includes both CO₂ emissions from all fossil fuels and the fossil portion of CO₂ emissions from fuels with a mixed biogenic and fossil component [98.36(c)(3)(vi)]

Use the text boxes to enter the required information for your configuration type.

When finished, click SAVE.

Configuration Types 2 and 5

Click image to expand

The screenshot shows the EPA e-GGRT (Electronic Greenhouse Gas Reporting Tool) interface. The top navigation bar includes 'HOME', 'FACILITY REGISTRATION', 'FACILITY MANAGEMENT', and 'DATA REPORTING'. The main content area is titled 'Facility ABC (2010)' and 'Subpart C: General Stationary Fuel Combustion'. It includes a sidebar with 'e-GGRT Help' and a main form area with the following sections:

- CONFIGURATION LEVEL EMISSIONS:** Instructions to enter annual emissions information.
- CONFIGURATION:** Fields for Unit or Group Name/ID (CS-1kggh), Configuration Type (Common Stack or Duct (CEMS)), and Calculation Methodology Period (01/01/2010 - 12/31/2010).
- CUMULATIVE CO₂ EMISSIONS:** Four input fields for Quarter 1, Quarter 2, Quarter 3, and Quarter 4, each labeled '(metric tons)'.
- ANNUAL CO₂ EMISSIONS:**
 - Total annual CO₂ mass emissions measured by the CEMS (input field, '(metric tons)').
 - Check this box to indicate that the emissions reported for the CEMS include emissions calculated according to 98.33(a)(4)(viii) for a slipstream that bypassed the CEMS (checkbox).
 - Total annual biogenic CO₂ mass emissions (input field, '(metric tons)').
 - Total annual non-biogenic CO₂ mass emissions (input field, '(metric tons)').
- ADDITIONAL EMISSIONS INFORMATION:**
 - Total number of source operating hours in the reporting year (input field, '(hours)').
 - The total operating hours in which a substitute data value was used in the emissions calculations for CO₂ concentration (input field, '(hours)').
 - The total operating hours in which a substitute data value was used in the emissions calculations for stack gas flow rate (input field, '(hours)').
 - The total operating hours in which a substitute data value was used in the emissions calculations for stack gas moisture content (if moisture correction is required and a continuous moisture monitor is used) (input field, '(hours)').
- BIOGENIC CO₂ EMISSIONS:**
 - Biogenic CO₂ emissions were estimated using the methodology described by Equations C-12, C-13, and C-14. See section 98.33(a)(2) (checkbox, 'check if true').

At the bottom of the form are 'CANCEL' and 'SAVE' buttons. The footer includes 'Paperwork Reduction Act Burden Statement | Contact Us' and 'e-GGRT/2010 R.59 | SPC-11'.

For configurations of **Type 2 (single unit using Tier 4)** and **Type 5 (monitored common stack or duct configurations)**, subpart C requires the following additional information aggregated at the configuration-level:

- The cumulative CO₂ mass emissions for each quarter during the reporting year. The cumulative value is the sum of hourly emissions for the respective quarter only (for example, for the fourth quarter, the emissions will be summed for the fourth quarter only, not from all four quarters in the year). This value will include both biogenic and non-biogenic emissions [98.36(e)(2)(vi)(B)]
- The total annual biogenic CO₂ mass emissions. This includes both CO₂ emissions from the combustion of biomass fuels and the biogenic portion of CO₂ emissions from fuels with a mixed biogenic and fossil component [98.36(b)(9)(ii), 98.36(c)(2)(viii)]
- The total annual non-biogenic CO₂ mass emissions (i.e. CO₂ mass emissions from fossil fuels, sorbent use, and process emissions) [98.36(b)(9)(ii), 98.36(c)(2)(viii)]
- The total annual CO₂ mass emissions measured by the CEMS. This will include both biogenic and non-biogenic emissions [98.36(b)(9)(1)-(ii), 98.36(c)(2)(viii)]
- An indication (check box) if emissions reported for the CEMS include emissions calculated according to 98.33(a)(4)(viii) for a slipstream that bypassed the CEMS [98.33(a)(4)(viii)]
- The total number of source operating hours in the reporting year [98.36(e)(2)(vi)(A)]
- The total operating hours in which a substitute data value was used in the emissions calculations for the CO₂ concentration parameter (if an O₂ monitor is used to calculate CO₂ concentration, report missing data for the O₂ monitor here) [98.36(e)(2)(vi)(C), 98.3(c)(8)]
- The total operating hours in which a substitute data value was used in the emissions calculations for the stack gas flow rate parameter

- [98.36(e)(2)(vi)(C), 98.3(c)(8)]
- The total operating hours in which a substitute data value was used in the emissions calculations for the stack gas moisture content parameter (if moisture correction is required and a continuous moisture monitor is used) [98.36(e)(2)(vi)(C), 98.3(c)(8)]
- An indication (check box) of whether biogenic CO₂ mass emissions were estimated using the methodology described by Equations C-12, C-13, and C-14 (See section 98.33(e)(2))

If biogenic CO₂ emissions were estimated using the methodology described by Equations C-12, C-13, and C-14, the following additional information is required by subpart C for configurations of Type 2:

- The total annual volume of CO₂ emitted from the combustion of all fuels [98.36(e)(2)(ix)(A)]
- The total annual volume of CO₂ emitted from the combustion of all fossil fuels [98.36(e)(2)(ix)(B)]
- The total annual volume of CO₂ emitted from the combustion of all biomass fuels [98.36(e)(2)(ix)(C)]
- The total annual biogenic CO₂ mass emissions calculated using the procedures in 98.33(e)(2) [98.36(e)(2)(ix)(G)]

Use the text boxes and check box to enter the required information for your configuration type.

When finished, click SAVE.

Configuration Type 6 (year-round Part 75 heat input reporters)

Click image to expand

For configurations of **Type 6 (year-round Part 75 heat input reporters)**, subpart C requires the following additional information aggregated at the configuration-level:

- The total annual biogenic CO₂ mass emissions. This includes both CO₂ emissions from the combustion of biomass fuels and the biogenic portion of CO₂ emissions from fuels with a mixed biogenic and fossil component [98.36(d)(2)(ii)(I), 98.36(d)(2)(iii)(I)]
 - Report zero for this value if the facility elects to use the option specified in 98.3(c)(12) for the 2010 reporting year (where the facility chooses not to separately report biogenic emissions from part 75 units)
- The total annual CO₂ emissions at the monitored location, as calculated by the applicable part 75 methodology. Include both biogenic and non-biogenic CO₂ in this value. [98.36(d)(2)(ii)(F), 98.36(d)(2)(iii)(F)]
- If CO₂ calculation methodology used was CEMS, the following additional elements are required:
 - The total number of source operating hours in the reporting year that the CO₂ concentration parameter was missing (if an O₂ monitor is used to calculate CO₂ concentration, report missing data for the O₂ monitor here) [98.3(c)(8)]
 - The total number of source operating hours in the reporting year that the stack gas flow rate parameter was missing [98.3(c)(8)]
 - The total number of source operating hours in the reporting year that the moisture content parameter was missing (if a continuous monitor is in use) [98.3(c)(8)]
- If CO₂ calculation methodology used was the Appendix D and G calculation method, the following additional elements are required:
 - Total number of operating hours during the year that fuel flow rate data was missing [98.3(c)(8)]
 - Total number of operating hours during the year that high heating value data was missing [98.3(c)(8)]

Use the text boxes to enter the required information for your configuration type.

When finished, click SAVE.

[Back to Top](#)

See Also

Screen Errors

[Using e-GGRT to Prepare Your Subpart C Report](#)
[Subpart C Configurations](#)
[Subpart C Fuel Identification Information](#)
[Subpart C Fuel-Level Emissions Information](#)
[Subpart Validation Report](#)

Subpart C Fuel Identification Information

The text below describes how to enter subpart C Stationary Fuel Combustion Sources fuel identification information for each configuration type. The process to edit fuel information for an existing configuration type is essentially similar.

Click image to expand

Subpart C: General Stationary Fuel Combustion (2011)
[Subpart C Overview](#)

OVERVIEW OF SUBPART C REPORTING REQUIREMENTS
Subpart C requires affected facilities to report annual carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) emissions from each stationary combustion unit. First, use this page to identify each stationary combustion reporting configuration (reporting options listed in §98.30) and then enter emissions information required by subpart C for each configuration.
For additional information about subpart C reporting, please use the e-GGRT Help link(s) provided.

CONFIGURATION SUMMARY

Configuration Name or ID	Configuration Type	Status ¹	Delete
Single Unit Test	Single Unit Using Tiers 1, 2, or 3	Incomplete	GO

[Add a Configuration](#)
[Facility Overview](#)

¹ A status of "Incomplete" means that one or more required data elements are incomplete. For details, refer to the Data Completeness validation messages in your Validation Report by clicking the "View Validation" link above (note: if there are no validation messages for this subpart you will not see this link).

Starting on the Subpart C Overview page, find the configuration type for which you would like to enter emissions information in the CONFIGURATION-LEVEL SUMMARY table and click GO.

Click image to expand

Subpart C: General Stationary Fuel Combustion (2011)
[Subpart C Overview](#) • [Single Unit Using Tiers 1, 2, or 3](#) • [Configuration Summary](#)

CONFIGURATION SUMMARY
For each stationary combustion configuration that uses Tiers 1, 2, or 3, subpart C requires both the reporting of fuel-specific emissions information and the reporting of emissions information aggregated at the configuration-level.
While both Fuel-Specific and Configuration-Level emissions are required in all cases, there is no order requirement on which must be entered first. If using the optional calculation spreadsheets, it is recommended that the user enter Fuel-Specific Emissions information first. Links to the spreadsheets are provided on each Fuel-Specific Emissions page.
To be able to enter the Fuel-Specific Emissions pages, the user must first select the relevant fuel (one at a time), and then the corresponding CO₂ calculation methodology. Once a fuel is added the user may open the page for a specific fuel type to enter the required fuel-specific emissions information.
For additional information about subpart C reporting, please use the e-GGRT Help link(s) provided.

CONFIGURATION INFORMATION

Configuration Type
Single Unit Using Tiers 1, 2, or 3

Unit Name/ID Single Unit Test

Description testing

Unit Type PCWD (Pulverized coal, wall-fired, dry bottom)

Maximum Rated Heat Input Capacity 3500 (mmBtu/hr)

[Edit this Configuration Information](#)

CONFIGURATION-LEVEL EMISSIONS INFORMATION

Total Biogenic CO ₂ Emissions (metric tons)	Total CO ₂ Emissions from Sorbent Usage (metric tons)	Status ¹
		Incomplete

[GO](#)

FUEL IDENTIFICATION INFORMATION (for fuels combusted at this reporting configuration)

Fuel	Calculation Period	Methodology	Status ¹	Delete
No fuels present				

[ADD a Fuel](#)
[Subpart C Overview](#)

¹ A status of "Incomplete" means that one or more required data elements are incomplete. For details, refer to the Data Completeness validation messages in your Validation Report by clicking the "View Validation" link on the overview page. (Note: if there are no validation messages for this subpart you will not see this link).

To add a fuel type for this configuration, click the "ADD a Fuel" link below the FUEL EMISSIONS INFORMATION table.

Click image to expand

ADD A FUEL

Subpart C requires the identification of all fuels combusted in each reporting configuration. Use this page to add a fuel combusted in this reporting configuration. Repeat this process for each type of fuel combusted at this configuration over the course of the reporting year.

If the fuel you wish to add is not a fuel type listed in Table C-1, click "ADD an Other Fuel or Blend" to add a new fuel type.

If the calculation methodology for a given fuel type changed during the year, multiple entries should be made for the fuel type to represent the discrete calculation methodology periods. However, only one calculation methodology may be used at any point in time for a specific fuel type under a given configuration. Different fuel types might be allowed to use different calculation methodologies for a given configuration.

For additional information about reporting fuel information, please use the e-GGRT Help link(s) provided.

COAL AND COKE [HIDE](#)

- ☐ Mixed (Commercial sector)
- ☐ Mixed (Industrial sector)
- ☐ Mixed (Industrial sector)
- ☐ Mixed (Electric Power sector)
- ☐ Anthracite
- ☐ Bituminous
- ☐ Subbituminous
- ☐ Lignite
- ☐ Coke

NATURAL GAS [HIDE](#)

- ☐ Natural Gas (Weighted U.S. Average)

⚠ If a fuel is not found among those listed, you can add it to the other fuels and blends list below.

OTHER FUELS AND BLENDS [HIDE](#)

- ☐ No other fuels or blends present.
- [+ ADD an Other Fuel or Blend](#)

PETROLEUM PRODUCTS [SHOW](#)

OTHER FUELS - SOLID [SHOW](#)

OTHER FUELS - GASEOUS [SHOW](#)

BIOMASS FUELS - SOLID [SHOW](#)

BIOMASS FUELS - GASEOUS [SHOW](#)

BIOMASS FUELS - LIQUID [SHOW](#)

[CANCEL](#) [SAVE](#)

For configurations of all types, subpart C requires you to identify the following for each configuration:

- The fuel types combusted during the reporting year [98.36(b)(4), 98.36(c)(1)(v), 98.36(c)(2)(iv), 98.36(c)(3)(iv), 98.36(d)(2)(ii)(A), and 98.36(d)(2)(iii)(A)]

If a configuration type is selected that uses Tiers 1, 2, or 3, you will be required to specify which equation is used to calculate CO₂ emissions. By identifying which equation is used to calculate emissions, e-GGRT is able to determine which data reporting elements are required for each fuel type.

For Configurations of Type 1 (single unit using Tiers 1, 2, or 3), Type 3 (aggregation of units), **and** Type 4 (common pipe), subpart C requires you to identify the methods used to calculate emissions for each fuel type. Include the following information for each fuel type combusted in the unit:

- Calculation methodology start date and end date, for each fuel type [98.36(b)(6)(ix), 98.36(c)(3)(viii) - (ix)]
- Calculation methodology used for the emissions calculation period specified, for each fuel type [98.36(b)(5), 98.36(c)(1)(vii), 98.36(c)(3)(v)]:
 - Tier 1/Equation C-1: Annual fuel combusted, default heating value, and default CO₂ emission factor
 - Tier 1/Equation C-1a: Annual natural gas usage from billing records (therms) and default CO₂ emission factor
 - Tier 1/Equation C-1b: Annual natural gas usage from billing records (mmBtu) and default CO₂ emission factor
 - Tier 2/Equation C-2a: Annual fuel combusted, measured heating value, and default CO₂ emission factor
 - Tier 2/Equation C-2c: Steam generation, ratio of maximum rated heat input capacity to design rated steam output capacity, and default CO₂ emission factor (for MSW and solid fuels listed in Table C-1))
 - Tier 3/Equation C-3: Annual mass of solid fuel combusted and average carbon content of the solid fuel
 - Tier 3/Equation C-4: Annual mass of liquid fuel combusted and average carbon content of the liquid fuel
 - Tier 3/Equation C-5: Annual volume of gaseous fuel combusted, average carbon content of the gaseous fuel, and average molecular weight of the gaseous fuel
- The user should refer to 98.33(b) to determine which Tier is required for each fuel type at the configuration.

Use the radio buttons to select a fuel type for this unit or group.

When finished, click SAVE.

To add a fuel type that is not listed, click "ADD an Other Fuel or Blend."

Click image to expand

United States Environmental Protection Agency

e-GGRT
Electronic Greenhouse Gas Reporting Tool

HOME FACILITY REGISTRATION FACILITY MANAGEMENT DATA REPORTING

General Stationary Fuel Combustion Sources 1 (2010)
Subpart C: General Stationary Fuel Combustion
Subpart C Overview • Single Unit Using Tiers 1, 2, or 3 • **Add Fuel**

DEFINE A NEW FUEL
Use this page to define a new type of fuel. The fuel type should be defined as an "other" fuel type if it is a fuel not listed in Table C-1 and if the fuel does not contain a mixture of any fuels listed in Table C-1. The fuel should be defined as a "blend" if the fuel is a mixture of one or more fuels listed in Table C-1 and the exact composition of the blended fuel is not known. In addition to fuels listed in Table C-1, blended fuels may contain fuel types not listed in Table C-1.
For additional information about reporting fuel information, please use the e-GGRT Help link(s) provided. * denotes a required field

FUEL INFORMATION

Fuel Name *

Fuel Type *

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Use the text box and drop-down menu to enter the fuel name and fuel type.

When finished, click SAVE.

Click image to expand

United States Environmental Protection Agency

e-GGRT
Electronic Greenhouse Gas Reporting Tool

HOME FACILITY REGISTRATION FACILITY MANAGEMENT DATA REPORTING

Facility ABC (2010)
Subpart C: General Stationary Fuel Combustion
Subpart C Overview • Single Unit Using Tiers 1, 2, or 3 • **Calculation Methodology**

DEFINE A CALCULATION PERIOD AND METHODOLOGY
Use this page to define the CO₂ calculation methodology used for this fuel type and the period in which this methodology was used. For additional information about reporting the calculation methodology and period for a specific fuel, please use the e-GGRT Help link(s) provided. * denotes a required field

CONFIGURATION

Unit or Group Name

Configuration Type

EMISSIONS CALCULATION PERIOD

Fuel (Fuel Type)

Calculation Methodology Start *

Date
Enter the date for which this calculation methodology was first used to comply with Part 98. If this methodology was in use prior to January 1, 2010 select January 1, 2010 as the start date. If the facility switched to this methodology during 2010, enter the date on which the methodology change occurred.

Calculation Methodology End *

Date
If no change in calculation methodology occurred during 2010, select December 31, 2010 as the end date. If a change in calculation methodology occurred, enter the date on which this methodology was last used.

CALCULATION METHODOLOGY

Indicate your calculation methodology for this fuel, for the Emissions Calculation Period specified

☐ Tier 1 (Equation C-1) - Annual fuel combusted, default heating value, and default CO₂ emission factor

☐ Tier 2 (Equation C-2a) - Annual fuel combusted, measured heating value, and default CO₂ emission factor

For use with any type of fuel listed in Table C-1, except for municipal solid waste (MSW)

☒ Tier 3 (Equation C-4) - Annual mass of liquid fuel combusted and average carbon content of the liquid fuel

For use with liquid fuels

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Use the text boxes and radio buttons to enter the required information.

When finished, click SAVE.

[Back to Top](#)

See Also

Screen Errors
[Using e-GGRT to Prepare Your Subpart C Report](#)
[Subpart C Configurations](#)
[Subpart C Configuration-Level Emissions Information](#)
[Subpart C Fuel-Level Emissions Information](#)
[Subpart Validation Report](#)

Subpart C Fuel-Level Emissions Information

Once the fuel types and CO₂ calculation method are specified, e-GGRT will prompt the user for fuel specific emissions information. Although units using Tier 4 and alternative part 75 methods are not generally required to calculate fuel specific CO₂ mass emissions, such units are required to

report fuel specific CH₄ and N₂O mass emissions. Fuel specific missing data information is reported under this section.

The text below describes how to enter subpart C Stationary Fuel Combustion Sources fuel-level emissions information for each configuration type. The process to edit fuel information for an existing configuration type is essentially similar.

Click image to expand

Click image to expand

United States Environmental Protection Agency

HOME FACILITY REGISTRATION FACILITY MANAGEMENT DATA REPORTING

e-GGRT Help

Using e-GGRT for Subpart C reporting

ABC Petroleum

Subpart C: General Stationary Fuel Combustion (2011)

[Subpart C Overview](#)

OVERVIEW OF SUBPART C REPORTING REQUIREMENTS

Subpart C requires affected facilities to report annual carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) emissions from each stationary combustion unit. First, use this page to identify each stationary combustion reporting configuration (reporting options listed in §60.36) and then enter emissions information required by subpart C for each configuration.

For additional information about subpart C reporting, please use the e-GGRT Help link(s) provided.

EPA has finalized a rule that defers the deadline for reporting data elements used as inputs to emission equations for direct emitters. See 76 FR 63057 (published August 25, 2011). In accordance with the rule, e-GGRT is not currently collecting data used as inputs to emission equations.

Subpart C: View Validation

CONFIGURATION SUMMARY

Configuration Name or ID	Configuration Type	Status ¹	Delete
Single Unit Test	Single Unit Using Tiers 1, 2, or 3	Incomplete	OPEN

[Add a Configuration](#)

[Facility Overview](#)

¹ A status of "Incomplete" means that one or more required data elements are incomplete. For details, refer to the Data Completeness validation messages in your Validation Report by clicking the "View Validation" link above (note: if there are no validation messages for this subpart you will not see this link).

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e-GGRT RY2011 R.12 | SPO-01

Starting on the Subpart C Overview page, find the configuration type for which you would like to enter emissions information in the CONFIGURATION SUMMARY table and click OPEN.

Click image to expand

Click image to expand

United States Environmental Protection Agency

HOME FACILITY REGISTRATION FACILITY MANAGEMENT DATA REPORTING

e-GGRT Help

Using e-GGRT for Subpart C reporting

ABC Petroleum

Subpart C: General Stationary Fuel Combustion (2011)

[Subpart C Overview](#) - Single Unit Using Tiers 1, 2, or 3 - [Configuration Summary](#)

CONFIGURATION SUMMARY

For each stationary combustion configuration that uses Tiers 1, 2, or 3, subpart C requires both the reporting of fuel-specific emissions information and the reporting of emissions information aggregated at the configuration-level.

While both Fuel-Specific and Configuration-Level emissions are required in all cases, there is no order requirement on which must be entered first. If using the optional calculation spreadsheets, it is recommended that the user enter Fuel-Specific Emissions information first. Links to the spreadsheets are provided on each Fuel-Specific Emissions page.

To be able to enter the Fuel-Specific Emissions pages, the user must first select the relevant fuel (one at a time), and then the corresponding CO₂ calculation methodology. Once a fuel is added the user may open the page for a specific fuel type to enter the required fuel-specific emissions information.

For additional information about subpart C reporting, please use the e-GGRT Help link(s) provided.

CONFIGURATION INFORMATION

Configuration Type	Single Unit Using Tiers 1, 2, or 3
Unit Name/ID	Single Unit Test
Description	testing
Unit Type	PCWD (Pulverized coal, wall-fired, dry bottom)
Maximum Rated Heat Input Capacity	3500 (mmBtu/hr)

[Edit this Configuration Information](#)

CONFIGURATION-LEVEL EMISSIONS INFORMATION

Total Biogenic CO ₂ Emissions (metric tons)	Total CO ₂ Emissions from Sorbent Usage (metric tons)	Status ¹
		Incomplete

[OPEN](#)

FUEL-SPECIFIC EMISSIONS INFORMATION (for fuels combusted at this reporting configuration)

Fuel	Calculation Period	Methodology	Status ¹	Delete
No fuels present				

[ADD a Fuel](#)

[Subpart C Overview](#)

¹ A status of "Incomplete" means that one or more required data elements are incomplete. For details, refer to the Data Completeness validation messages in your Validation Report by clicking the "View Validation" link on the overview page. (Note: if there are no validation messages for this subpart you will not see this link).

Paperwork Reduction Act Burden Statement | Contact Us

e-GGRT RY2011 R.12 | SPO-01

To enter emissions information by fuel type, find the fuel type for which you would like to enter fuel emissions data in the FUEL-SPECIFIC EMISSIONS INFORMATION table and click OPEN.

The data entry screen will vary depending on the calculation methodology (tier and equation).

Tier 1 (Equation C-1, C-1a, or C-1b)

Click image to expand

For each fuel type (including biomass fuel(s)) for which you have elected to use a **Tier 1 (Equation C-1, C-1a, or C-1b)** methodology, subpart C requires you to report the following information by fuel type:

- The total annual CO₂ mass emissions derived from Equation C-1, Equation C-1a, or Equation C-1b in metric tons CO₂ (this value will include both non-biogenic and biogenic CO₂ as applicable) [98.36(b)(8)(i), 98.36(c)(1)(vi), 98.36(c)(3)(vii)]
- The total annual CH₄ mass emissions derived from Equation C-8, Equation C-8a, or Equation C-8b in metric tons CH₄ and in metric tons CO₂e (for Table C-2 fuels only). Note that e-GGRT will automatically calculate the CO₂e data value [98.36(b)(8)(i), 98.36(c)(1)(vi), 98.36(c)(3)(vii)]
- The total annual N₂O mass emissions derived from Equation C-8, Equation C-8a, or Equation C-8b in metric tons N₂O and in metric tons CO₂e (for Table C-2 fuels only). Note that e-GGRT will automatically calculate the CO₂e data value [98.36(b)(8)(i), 98.36(c)(1)(vi), 98.36(c)(3)(vii)]

Use the red-bordered text boxes to enter the required emissions information.

To calculate the emissions, you have the option of using your own resources or alternatively you may use the following tool and set of instructions:

- Download the spreadsheet tool by clicking the link below one of the red-bordered text boxes labeled “Use Equation C-x/C-y spreadsheet to calculate” (where x indicates the specific Tier 1 equation used to calculate CO₂ emissions and y the specific Tier 1 equation used to calculate CH₄ and N₂O emissions in the spreadsheet)
- Fill in the spreadsheet completely using the instructions provided in the tool
- After completing the spreadsheet, copy the values calculated by the spreadsheet to the red-bordered text boxes on this page

When finished, click SAVE.

Tier 2 (Equations C-2a and C-2b)

Click image to expand

Facility ABC (2010)
Subpart C: General Stationary Fuel Combustion
 Subject C Overview • Single Unit Using Tiers 1, 2, or 3 • **Fuel-specific Emissions**

FUEL-SPECIFIC EMISSIONS
 Use this page to enter the annual greenhouse gas emissions information for this fuel. The user is required to enter CO₂, CH₄, N₂O, sampling frequency and missing data information (as applicable) for each fuel type. For additional information about the data collected on this page, please use the e-GGRT Help link(s) provided.

CONFIGURATION-FUEL PERIOD
 Unit or Group Name-ID: Boiler 1
 Configuration Type: Single Unit Using Tiers 1, 2, or 3
 Fuel (Fuel Type): Natural Gas (Weighted U.S. Average) (Natural Gas)
 Reporting Period: 01/01/2010 - 12/31/2010

EQUATION C-2a SUMMARY AND RESULT

$$CO_2 = 1 \times 10^{-3} \times \text{Fuel} \times HHV \times EF$$
 Hover over an element in the equation above to reveal a definition of that element.
 Annual CO₂ emissions from combustion of the specified fuel: 5000 (metric tons)
 Use Equation C-2a/C-9a spreadsheet to calculate

EQUATION C-9a SUMMARY AND RESULTS

$$CH_4 \text{ or } N_2O = 1 \times 10^{-3} \times HHV \times EF \times \text{Fuel}$$
 Hover over an element in the equation above to reveal a definition of that element.
 Annual CH₄ emissions from combustion of the specified fuel: 1 (metric tons)
 Use Equation C-2a/C-9a spreadsheet to calculate
 Annual N₂O emissions from combustion of the specified fuel: 1 (metric tons)
 Use Equation C-2a/C-9a spreadsheet to calculate

CO₂ EQUIVALENT EMISSIONS
 CO₂ equivalent value for Annual CH₄ emissions: 21 (metric tons)
 Use Equation C-2a/C-9a spreadsheet to calculate
 CO₂ equivalent value for Annual N₂O emissions: 310 (metric tons)
 Use Equation C-2a/C-9a spreadsheet to calculate

HHV SUBSTITUTE DATA INFORMATION
 Identify each month for which the monthly HHV value is calculated using one or more substitute data values:
☒ January ☐ February ☐ March
☐ April ☐ May ☐ June
☐ July ☒ August ☐ September
☐ October ☐ November ☐ December
 Frequency of HHV determinations: Weekly

SAVE **CANCEL**

For each fuel type (including biomass fuel(s)) for which you have elected to use the **Tier 2 (Equation C-2a)** methodology, subpart C requires you to report the following information by fuel type:

- The total annual CO₂ mass emissions derived from Equation C-2a in metric tons CO₂ (this value will include both non-biogenic and biogenic CO₂ as applicable) [98.36(b)(8)(i), 98.36(c)(1)(vi), 98.36(c)(3)(vii)]
- The total annual CH₄ mass emissions derived from Equation C-9a in metric tons CH₄ and in metric tons CO₂e (for Table C-2 fuels only). Note that e-GGRT will automatically calculate the CO₂e data value [98.36(b)(8)(i), 98.36(c)(1)(vi), 98.36(c)(3)(vii)]
- The total annual N₂O mass emissions derived from Equation C-9a in metric tons N₂O and in metric tons CO₂e (for Table C-2 fuels only). Note that e-GGRT will automatically calculate the CO₂e data value [98.36(b)(8)(i), 98.36(c)(1)(vi), 98.36(c)(3)(vii)]
- Identification of each month for which HHVs were calculated using one or more substitute data values [98.36(e)(2)(ii)(C)]
- The frequency of the HHV determinations [98.36(e)(2)(ii)(B)]
 - Hourly
 - Daily
 - Weekly
 - Monthly
 - Semiannually
 - Quarterly
 - Once per fuel lot
 - Upon addition of oil to the storage tank
 - Other (specify)

Use the red-bordered text boxes to enter the required emissions information.

To calculate the emissions you have the option of using your own resources or alternatively you may use the following tool and set of instructions:

- Download the spreadsheet tool by clicking the link below one of the red-bordered text boxes labeled “Use Equation C-2a/C-9a spreadsheet to calculate”
- Fill in the spreadsheet completely using the instructions provided in the tool
- After completing the spreadsheet, copy the values calculated by the spreadsheet to the red-bordered text boxes on this page

Use the check boxes, plain text box, and drop-down menu to enter the remaining required emissions information.

When finished, click SAVE.

Tier 2 (Equation C-2c)

Click image to expand

General Stationary Fuel Combustion Sources 1 (2010)
Subpart C: General Stationary Fuel Combustion
 Subpart C Overview • Single Unit Using Tiers 1, 2, or 3 • **Fuel specific Emissions**

FUEL-SPECIFIC EMISSIONS
 Use this page to enter the annual greenhouse gas emissions information for this fuel. The user is required to enter CO₂, CH₄, N₂O, sampling frequency and missing data information (as applicable) for each fuel type. For additional information about the data collected on this page, please use the e-GGRT Help link(s) provided.

CONFIGURATION-FUEL-PERIOD

Unit or Group Name/ID	Unit 71
Configuration Type	Single Unit Using Tiers 1, 2, or 3
Fuel (Fuel Type)	Other - liq (Other (liquid))
Reporting Period	01/01/2010 - 12/31/2010

EQUATION C-4 SUMMARY AND RESULT

$$\text{CO}_2 = \frac{44}{12} \times \text{Fuel} \times \text{CC} \times 0.001$$

Hover over an element in the equation above to reveal a definition of that element.

Annual CO₂ emissions from combustion of the specified fuel: (metric tons)
 Use Equation C-4/C-6 spreadsheet to calculate

EQUATION C-9 SUMMARY AND RESULTS

$$\text{CH}_4 \text{ or } \text{N}_2\text{O} = 1 \times 10^{-3} \times \text{Fuel} \times \text{Hf} \times \text{EF}$$

Hover over an element in the equation above to reveal a definition of that element.

Annual CH₄ emissions from combustion of the specified fuel: (metric tons)
 Use Equation C-4/C-6 spreadsheet to calculate

Annual N₂O emissions from combustion of the specified fuel: (metric tons)
 Use Equation C-4/C-6 spreadsheet to calculate

CO₂ EQUIVALENT EMISSIONS

CO₂ equivalent value for Annual CH₄ emissions: (metric tons)
 Use Equation C-4/C-6 spreadsheet to calculate

CO₂ equivalent value for Annual N₂O emissions: (metric tons)
 Use Equation C-4/C-6 spreadsheet to calculate

CARBON CONTENT SUBSTITUTE DATA INFORMATION

Total number of valid carbon content determinations	<input type="text" value="4"/>
Total number of carbon content substitute data values	<input type="text" value="0"/>
Frequency of carbon content determinations	Quarterly
Total number of operating hours in the reporting year for which missing data substitution was used for fuel usage	<input type="text" value="100"/>

For each fuel type (including biomass fuel(s)) for which you have elected to use the **Tier 2 (Equation C-2c)** methodology, subpart C requires you to report the following information by fuel type:

- The total annual CO₂ mass emissions derived from Equation C-2c in metric tons CO₂ (this value will include both non-biogenic and biogenic CO₂ as applicable) [98.36(b)(8)(i), 98.36(c)(1)(vi), 98.36(c)(3)(vii)]
- The total annual CH₄ mass emissions derived from Equation C-9b in metric tons CH₄ and in metric tons CO₂e (for Table C-2 fuels only). Note that e-GGRT will automatically calculate the CO₂e data value [98.36(b)(8)(i), 98.36(c)(1)(vi), 98.36(c)(3)(vii)]
- The total annual N₂O mass emissions derived from Equation C-9b in metric tons N₂O and in metric tons CO₂e (for Table C-2 fuels only). Note that e-GGRT will automatically calculate the CO₂e data value [98.36(b)(8)(i), 98.36(c)(1)(vi), 98.36(c)(3)(vii)]

Use the red-bordered text boxes to enter the required emissions information.

To calculate the emissions you have the option of using your own resources or alternatively you may use the following tool and set of instructions:

- Download the spreadsheet tool by clicking the link below one of the red-bordered text boxes labeled “Use Equation C-2c/C-9b spreadsheet to calculate”
- Fill in the spreadsheet completely using the instructions provided in the tool
- After completing the spreadsheet, copy the values calculated by the spreadsheet to the red-bordered text boxes on this page

Tier 3 (Equation C-3, C-4, or C-5)

Note: Equation C-5 pictured, Equations C-3 and C-4 will not include the MOLECULAR WEIGHT INFORMATION section

Click image to expand

For each fuel type (including biomass fuel(s)) for which you have elected to use a **Tier 3 (Equation C-3, C-4, or C-5)** methodology, subpart C requires you to report the following information by fuel type:

- The total annual CO₂ mass emissions derived from Equation C-3 for solid fuels, Equation C-4 for liquid fuels, or Equation C-5 for gaseous fuels in metric tons CO₂ (this value will include both non-biogenic and biogenic CO₂ as applicable) [98.36(b)(8)(i), 98.36(c)(1)(vi), 98.36(c)(3)(vii)]
- The total annual CH₄ mass emissions derived from Equation C-8 in metric tons CH₄ and in metric tons CO₂e (for Table C-2 fuels only). Note that e-GGRT will automatically calculate the CO₂e data value [98.36(b)(8)(i), 98.36(c)(1)(vi), 98.36(c)(3)(vii)]
- The total annual N₂O mass emissions derived from Equation C-8 in metric tons N₂O and in metric tons CO₂e (for Table C-2 fuels only). Note that e-GGRT will automatically calculate the CO₂e data value [98.36(b)(8)(i), 98.36(c)(1)(vi), 98.36(c)(3)(vii)]
- The total number of valid carbon content determinations [98.36(e)(2)(iv)(D)]
- The total number of carbon content substitute data values [98.36(e)(2)(iv)(E)]
- The frequency of carbon content determinations [98.36(e)(2)(iv)(B)]
 - Hourly
 - Daily
 - Weekly
 - Monthly
 - Semiannually
 - Quarterly
 - Once per fuel lot
 - Upon addition of oil to the storage tank
 - Other (specify)
- The total number of operating hours in the reporting year for which missing data substitution was used for fuel usage [98.3(c)(8)]

Use the red-bordered text boxes to enter the required emissions information.

To calculate the emissions you have the option of using your own resources or alternatively you may use the following tool and set of instructions:

- Download the spreadsheet tool by clicking the link below one of the red-bordered text boxes labeled “Use Tier 3 spreadsheet to calculate”
- Fill in the spreadsheet completely using the instructions provided in the tool
- After completing the spreadsheet, copy the values calculated by the spreadsheet to the red-bordered text boxes on this page

For each gaseous fuel at each configuration for which you have elected to use the **Tier 3 (Equation C-5)** methodology, subpart C requires you to report the following additional information:

- Total number of valid molecular weight determinations [98.36(e)(2)(iv)(D)]
- Total number of molecular weight substitute data values [98.36(e)(2)(iv)(E)]
- Frequency of molecular weight determinations [98.36(e)(2)(iv)(B)]
 - Hourly
 - Daily
 - Weekly
 - Monthly
 - Semiannually
 - Quarterly
 - Other (specify)

When finished, click SAVE.

Tier 4 (CEMS)

Click image to expand

The screenshot shows the EPA e-GGRT interface for Subpart C: General Stationary Fuel Combustion. It includes a configuration section with fields for Unit or Group Name/ID, Configuration Type, Part 75 Methodology, Part 75 Heat Input Method, and Fuel (Fuel Type). Below this is the 'FUEL SPECIFIC CH₄ AND N₂O EMISSIONS' section with input fields for Annual CO₂e for CH₄ (11.86) and Annual CO₂e for N₂O (17.51). The 'CO₂ EQUIVALENT EMISSIONS' section has input fields for Annual CH₄ emissions (11.8585) and Annual N₂O emissions (17.5055). Red arrows point from the 'Use Equation C-10 spreadsheet to calculate' links to the input fields.

When a **Tier 4 (CEMS)** configuration is selected, you are required to report the following information for each fuel type listed in Table C-2 (including biomass fuel(s)):

- The total annual CH₄ mass emissions derived from Equation C-10 in metric tons CH₄ and in metric tons CO₂e. Note that e-GGRT will automatically calculate the CO₂e data value [98.36(b)(9)(iii), 98.36(c)(2)(ix)]
- The total annual N₂O mass emissions derived from Equation C-10 in metric tons N₂O and in metric tons CO₂e. Note that e-GGRT will automatically calculate the CO₂e data value [98.36(b)(9)(iii), 98.36(c)(2)(ix)]

Use the red-bordered text boxes to enter the required emissions information.

To calculate the emissions you have the option of using your own resources or alternatively you may use the following tool and set of instructions:

- Download the spreadsheet tool by clicking the link below one of the red-bordered text boxes labeled “Use Tier 4 spreadsheet to calculate”
- Fill in the spreadsheet completely using the instructions provided in the tool
- After completing the spreadsheet, copy the values calculated by the spreadsheet to the red-bordered text boxes on this page

When finished, click SAVE.

Year-Round Part 75 Heat Input Reporters

Click image to expand

For configurations using the alternative CO₂ mass emissions calculation methods provided in **98.33(a)(5) (Year-round Part 75 heat input reporters)**, subpart C requires the following information for each fuel type listed in Table C-2 (including biomass fuel(s)) except as otherwise provided in 98.33(c)(4)(ii)(D)):

- The total annual CH₄ mass emissions derived from Equation C-10 in metric tons CO₂e value is required to be reported for this element [98.36(d)(2)(ii)(H), 98.36(d)(2)(iii)(H)]
- The total annual N₂O mass emissions derived from Equation C-10 in metric tons CO₂e value is required to be reported for this element [98.36(d)(2)(ii)(H), 98.36(d)(2)(iii)(H)]

Use the red-bordered text boxes to enter the required emissions information.

To calculate the emissions you have the option of using your own resources or alternatively you may use the following tool and set of instructions:

- Download the spreadsheet tool by clicking the link below one of the red-bordered text boxes labeled “Use Tier 4 spreadsheet to calculate”
- Fill in the spreadsheet completely using the instructions provided in the tool
- After completing the spreadsheet, copy the values calculated by the spreadsheet to the red-bordered text boxes on this page

When finished, click SAVE.

[Back to Top](#)

See Also

Screen Errors

[Using e-GGRT to Prepare Your Subpart C Report](#)

[Subpart C Configurations](#)

[Subpart C Configuration-Level Emissions Information](#)


[Subpart C Fuel Identification Information](#)

[Subpart Validation Report](#)

Configuration types, emission details and their presentation in the summary report

For data reported at the configuration level, the rule requires different data elements to be collected for different configurations. For example, the rule does not require the reporting of annual fossil fuel based CO₂ Emissions for single units using tier 1, tier 2, or tier 3 but does require it for aggregation of units and common pipe configurations. Similarly, annual CO₂ emissions from sorbent is required for single units using tier 1, tier 2, or tier 3 and for aggregations of units but is not collected for common pipe configurations. These data collection pattern are summarized for each configuration option in Subpart C in the table below.

These data collection variations also have an impact in the way data is presented in summary report which is available after generating a submission. As many users have noted that the summary report includes data display areas which are not always populated with data. All units have the Emissions Detail data elements displayed (i.e., Annual CO₂ emissions from sorbent, Total annual biogenic CO₂ mass emissions, and

Total annual CO₂ mass emissions from fossil fuels) even if these data items are blank because that data was not collected. The  in table below highlights the configurations for which the summary report presents a data element title and a blank in the emissions detail area.

Configuration types, Emission Numbers and their Presentation in the Summary Report

	Single Unit (T1/2/3)	Aggregation of Units	Common Pipe	Single Unit (T4/CEMS)	Common Stack / Duct (CEMS)	Alt Part 75 Method
Annual CO ₂ emissions from sorbent	★	★	✖	✖	✖	✖
Total annual biogenic CO ₂ mass emissions	★	★	★	★	★	★
Total annual CO ₂ mass emissions from fossil fuels	✖	★	★	✖	✖	✖
Total annual non-biogenic CO ₂ mass emissions (includes fossil fuel, sorbent, and process CO ₂ emissions)				★	★	

Legend:

- ★ where e-GGRT collects these data and these data, where provided by the user, are shown in the emission details area of summary report
- ★ where e-GGRT collects these data and these data, where provided by the user, are shown in the Tier 4 Details area of summary report but not in the emissions details area
- ✖ where e-GGRT, on the basis of the rule, does not collect these data but also displays a empty data cell in the emission details area of the summary report

Using e-GGRT to Prepare Your Subpart C (Abbreviated) Report



The subpart C abbreviated reporting option is available only for the 2010 reporting year to any facility that meets the conditions of 40 CFR 98.2(a)(3). These are the facilities that are reporting emissions for only subpart C, and not for any other subpart during the 2010 reporting year. The subpart C abbreviated reporting form consists of facility level and not unit level emissions reporting. Subpart C abbreviated reporting will only be available for the 2010 reporting year. Beginning with the 2011 reporting year, all facilities (including first time reporters) must use the full subpart C reporting module.

The text below describes how to enter Subpart C (Abbreviated) Stationary Fuel Combustion Sources emissions information for the complete subpart.

Adding or Updating Emissions Information

Subpart C (Abbreviated) requires you to report the following emissions information:

- Annual Biogenic CO₂ emissions for the complete subpart (in metric tons of CO₂)
- Annual Non-Biogenic CO₂ emissions for the complete subpart (in metric tons of CO₂)
- Annual CH₄ emissions for the complete subpart (in metric tons of CH₄)
- Annual N₂O emissions for the complete subpart (in metric tons of N₂O)

For assistance in calculating CO₂ emissions, access the calculation spreadsheets for this subpart by clicking one of the links located below the red emissions data entry boxes titled "Use Subpart C spreadsheets to calculate," then follow the provided instructions.

When finished entering the required emissions information, click SAVE.

If you do not have all the data, you can enter some now, save it, then finish it later.

After you save the data on this page, the next time you open the page, the calculator on the top of the page will display the emissions for informational purposes only.

See Also

[Using e-GGRT to Prepare Your Subpart C Report](#)
[Using Subpart C Calculation Spreadsheets](#)

Using Subpart C Calculation Spreadsheets



These optional spreadsheets are provided to assist reporters in calculating emissions and in keeping records of these calculations.

Reporters are required to keep records of these calculations under 40 CFR 98.3(g) and additional subpart-specific provisions, but are not required to use these spreadsheets or to submit any spreadsheets to EPA.

Spreadsheets may include inputs to emission equations, reporting of which EPA has deferred (See 76 FR 53057, published August 25, 2011, <http://www.gpo.gov/fdsys/pkg/FR-2011-08-25/pdf/2011-21727.pdf>).

Overview

This help page provides guidance for working with the supplemental subpart C calculation spreadsheets. The guidance provides step-by-step instructions for the following tasks:

- Selecting the Appropriate Calculation Spreadsheet
- Downloading a Calculation Spreadsheet
- General Information on Using a Calculation Spreadsheet
- Using the Equation C-1, C-8 Calculation Spreadsheet
- Using the Equation C-1a, C-8a Calculation Spreadsheet
- Using the Equation C-1b, C-8b Calculation Spreadsheet
- Using the Equation C-2a, C-2b, C-9a Calculation Spreadsheet
- Using the Equation C-2c, C-9b Calculation Spreadsheet
- Using the Equation C-3, C-8 Calculation Spreadsheet
- Using the Equation C-4, C-8 Calculation Spreadsheet
- Using the Equation C-5, C-8 Calculation Spreadsheet
- Using the Equation C-10 Calculation Spreadsheet
- Using the Equation C-11 Calculation Spreadsheet

Specific information on each of the calculation spreadsheets is provided below:

Calculation Spreadsheet (click to download)	Instructions (click to view)
Equation C-1, C-8 Calculation Spreadsheet.xls	C-1, C-8 Help
Equation C-1a, C-8a Calculation Spreadsheet.xls	C-1a, C-8a Help
Equation C-1b, C-8b Calculation Spreadsheet.xls	C-1b, C-8b Help
Equation C-2a, C-2b, C-9a Calculation Spreadsheet.xls	C-2a, C-2b, C-9a Help
Equation C-2c, C-9b Calculation Spreadsheet.xls	C-2c, C-9b Help
Equation C-3, C-8 Calculation Spreadsheet.xls	C-3, C-8 Help
Equation C-4, C-8 Calculation Spreadsheet.xls	C-4, C-8 Help
Equation C-5, C-8 Calculation Spreadsheet.xls	C-5, C-8 Help
Equation C-10 Calculation Spreadsheet.xls	C-10 Help
Equation C-11 Calculation Spreadsheet.xls	C-11 Help

Selecting the Appropriate Calculation Spreadsheet

To calculate emissions for stationary combustion units reporting under subpart C, users may use the spreadsheets described in the table below. The equations for calculating CO₂ mass emissions and CH₄/N₂O mass emissions are combined onto one spreadsheet as appropriate. The table below describes the equation inputs, outputs, and the Tier and e-GGRT configuration types in which each equation may apply. Note that some Tiers and Configurations only allow the use of a given equation for certain situations. Ultimately, the user should refer to 40 CFR 98.33(b) to determine which Tier is allowed and to 40 CFR 98.33(a) to determine which equation within a Tier is appropriate. If a configuration combusts multiple fuel types, it is possible that different tiers and different equations may be used for that given configuration. The spreadsheets are designed to account for one type of fuel, so each additional fuel combusted in a configuration will need a new spreadsheet.

Calculation Spreadsheet	Tier	Basis for Calculations	Configuration Types	Output(s)
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Equation C-1, C-8 Calculation Spreadsheet.xls	1	EF, Fuel Use, Default HHV	1, 3, 4	CO ₂ CH ₄ N ₂ O
Equation C-1a, C-8a Calculation Spreadsheet.xls	1	EF, Natural Gas Billing Records	1, 3, 4	CO ₂ CH ₄ N ₂ O
Equation C-1b, C-8b Calculation Spreadsheet.xls	1	EF, Natural Gas Billing Records	1, 3, 4	CO ₂ CH ₄ N ₂ O
Equation C-2a, C-2b, C-9a Calculation Spreadsheet.xls	2	EF, Fuel Use, Measured HHV	1, 3, 4	CO ₂ CH ₄ N ₂ O
Equation C-2c, C-9b Calculation Spreadsheet.xls	2	EF, Steam Use, Boiler Max Rated Heat Input Capacity	1, 3, 4	CO ₂ CH ₄ N ₂ O
Equation C-3, C-8 Calculation Spreadsheet.xls	3	Fuel Use, Measured Fuel Carbon Content	1, 3, 4	CO ₂ CH ₄ N ₂ O
Equation C-4, C-8 Calculation Spreadsheet.xls	3	Fuel Use, Measured Fuel Carbon Content	1, 3, 4	CO ₂ CH ₄ N ₂ O
Equation C-5, C-8 Calculation Spreadsheet.xls	3	Fuel Use, Measured Fuel Carbon Content	1, 3, 4	CO ₂ CH ₄ N ₂ O
Equation C-10 Calculation Spreadsheet.xls	4	EF, Heat Input from Combustion	2, 5, 6	CH ₄ N ₂ O
Equation C-11 Calculation Spreadsheet.xls	N/A	Sorbent Use, Normalized moles CO ₂ Released upon Capture, Molecular Weight CO ₂ , Molecular Weight of Sorbent	1, 3	CO ₂

Tier 1 Calculation Methodology

To calculate annual CO₂, CH₄, and N₂O mass emissions for each type of fuel using Tier 1 in each reporting configuration, use Equation C-1, C-8 Calculation Spreadsheet, Equation C-1a, C-8a Calculation Spreadsheet (natural gas billed in therms only), or Equation C-1b, C-8b Calculation Spreadsheet (natural gas billed in mmBtu only).

Equation C-1, C-8 Calculation Spreadsheet

Use this spreadsheet to calculate the annual CO₂, CH₄, and N₂O mass emissions for a stationary fuel combustion configuration that uses the Equation C-1, Tier 1 calculation methodology for any given fuel. Use Equation C-1 on this spreadsheet **except** when natural gas billing records are used to quantify fuel usage and gas consumption is expressed in units of therms or million Btu. In that case, use Equation C-1a or C-1b, as applicable. This spreadsheet performs the calculation using Equations C-1 and C-8, which are provided below:

(Equation C-1)	$CO_2 = 1 \times 10^{-3} * Fuel * HHV * EF$
(Equation C-8)	$CH_4 \text{ or } N_2O = 1 \times 10^{-3} * Fuel * HHV * EF$

Equation C-1a, C-8a Calculation Spreadsheet

Use this spreadsheet to calculate the annual CO₂, CH₄, and N₂O emissions from natural gas usage for a configuration that fires natural gas and only if billing records are used to quantify fuel usage and gas consumption is expressed in units of **therms**. This spreadsheet performs the calculations using Equations C-1a and C-8a, which are provided below:

(Equation C-1a)	$CO_2 = 1 \times 10^{-3} [0.1 * Gas * EF]$
(Equation C-8a)	$CH_4 \text{ or } N_2O = 1 \times 10^{-3} * Fuel * 0.1 * EF$

Equations C-1b, C-8b Calculation Spreadsheet

Use the spreadsheet below to calculate the annual CO₂, CH₄, and N₂O emissions from natural gas usage for a configuration that fires natural gas and only if billing records are used to quantify fuel usage and gas consumption is expressed in units of **mmBtu**. This spreadsheet performs the calculations using Equations C-1b and C-8b, which are provided below.

(Equation C-1b)	$CO_2 = 1 \times 10^{-3} * Gas * EF$
(Equation C-8b)	$CH_4 \text{ or } N_2O = 1 \times 10^{-3} * Fuel * EF$

Tier 2 Calculation Methodology

To calculate annual CO₂, CH₄, and N₂O mass emissions for each type of fuel in each reporting configuration, use Equation C-2a, C-2b, C-9a Calculation Spreadsheet or Equation C-2c, C-9b Calculation Spreadsheet.

Equation C-2a, C-2b, C-9a Calculation Spreadsheet

Use this spreadsheet to calculate the annual CO₂, CH₄, and N₂O mass emissions for a stationary fuel combustion configuration that uses the Tier 2 calculation methodology. This spreadsheet performs the calculation using Equations C-2a, C-2b, and C-9a, which are provided below (although included, Equation C-2b is not always required, see 40 CFR 98.33(a)(2)(ii)):

(Equation C-2a)	$CO_2 = 1 \times 10^{-3} * Fuel * HHV * EF$
-----------------	---

(Equation C-2b)	$(HHV)_{annual} = \frac{\sum_{i=1}^n (HHV)_i * (Fuel)_i}{\sum_{i=1}^n (Fuel)_i}$
(Equation C-9a)	$CH_4 \text{ or } N_2O = 1 \times 10^{-3} * HHV * EF * Fuel$

Equation C-2c, C-9b Calculation Spreadsheet

Use this spreadsheet to calculate the annual CO₂, CH₄, and N₂O emissions for a stationary fuel combustion configuration that uses the Equation C-2c, Tier 2 calculation methodology. This worksheet should be used for MSW when the use of Tier 2 is allowed or (optionally) for solid fuels using Tier 2 that generate steam. This spreadsheet performs the calculations using Equations C-2c and C-9b, which are provided below:

(Equation C-2c)	$CO_2 = 1 \times 10^{-3} \text{ Steam} * B * EF$
(Equation C-9b)	$CH_4 \text{ or } N_2O = 1 \times 10^{-3} \text{ Steam} * B * EF$

Tier 3 Calculation Methodology

To calculate the annual CO₂, CH₄, and N₂O mass emissions for each type of fuel using Tier 3 in each type of reporting configuration, use Equation C-3, C-8 Calculation Spreadsheet, Equation C-4, C-8 Calculation Spreadsheet, or Equation C-5, C-8 Calculation Spreadsheet.

Equation C-3, C-8 Calculation Spreadsheet

Use the spreadsheet below to calculate the annual CO₂, CH₄, and N₂O mass emissions for solid fuels using Tier 3 Calculation methodology at each configuration. This spreadsheet performs the calculation using Equations C-3 and C-8, which are provided below:

(Equation C-3)	$CO_2 = \frac{44}{12} * Fuel * CC * 0.91$
(Equation C-8)	$CH_4 \text{ or } N_2O = 1 \times 10^{-3} * Fuel * HHV * EF$

Equation C-4, C-8 Calculation Spreadsheet

Use the spreadsheet below to calculate the annual CO₂, CH₄, and N₂O mass emissions for liquid fuels using the Tier 3 calculation methodology

at each configuration. This spreadsheet performs the calculations using Equations C-4 and C-8, which are provided below:

(Equation C-4)	$CO_2 = \frac{44}{12} * Fuel * CC * 0.001$
(Equation C-8)	$CH_4 \text{ or } N_2O = 1 \times 10^{-3} * Fuel * HHV * EF$

Equations C--5, C-8 Calculation Spreadsheet

Use the spreadsheet below to calculate the annual CO₂, CH₄, and N₂O mass emissions for gaseous fuels using the Tier 3 calculation methodology at each configuration. This spreadsheet performs the calculations using Equations C-5 and C-8, which are provided below:

(Equation C-5)	$CO_2 = \frac{44}{12} * Fuel * CC * \frac{MW}{MVC} * 0.001$
(Equation C-8)	$CH_4 \text{ or } N_2O = 1 \times 10^{-3} * Fuel * HHV * EF$

Tier 4 Calculation Methodology

To calculate the annual CH₄, and N₂O mass emissions for each type of fuel in each reporting configuration, use Equation C--10 Calculation Spreadsheet.

In addition to units reporting under Tier 4, this spreadsheet may also be used by units using the alternative reporting option in 40 CFR 98.33(a)(5) and by units reporting under subpart D. This spreadsheet performs the calculation using Equation C-10, which is provided below. The provided spreadsheets do not assist the user in calculating CO₂ emissions for units using CEMS.

(Equation C-10)	$CH_4 \text{ or } N_2O = 0.001 * (HI)_A * EF$
-----------------	---

Annual CO₂ Mass Emissions from Sorbent Use

When a unit is a fluidized bed boiler, is equipped with a wet flue gas desulfurization system, or uses other acid gas emission controls with sorbent injection to remove acid gases, and if the chemical reaction between the acid gas and the sorbent produces CO₂ emissions, use Equation C-11 to calculate the CO₂ emissions from the sorbent, except when those CO₂ emissions are monitored by CEMS. Reporting of CO₂ mass emissions from sorbent is only required for Configuration Types 1 and 3. To calculate CO₂ mass emissions from sorbent use for each reporting configuration, use Equation C-11 Calculation Spreadsheet. This spreadsheet performs the calculation using Equation C-11, which is provided below.

(Equation C-11)

$$CO_2 = 0.91 * S * R * \left(\frac{MW_{CO_2}}{MW_S} \right)$$

Downloading a Calculation Spreadsheet

Calculation spreadsheets for subpart C may be downloaded by clicking one of the links in the first column of the table below. Users may also jump to instructions for each calculation spreadsheet by clicking one of the links in the second column.

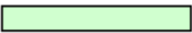



Calculation Spreadsheet (click to download)	Instructions (click to view)
Equation C-1, C-8 Calculation Spreadsheet.xls	C-1, C-8 Help
Equation C-1a, C-8a Calculation Spreadsheet.xls	C-1a, C-8a Help
Equation C-1b, C-8b Calculation Spreadsheet.xls	C-1b, C-8b Help
Equation C-2a, C-2b, C-9a Calculation Spreadsheet.xls	C-2a, C-2b, C-9a Help
Equation C-2c, C-9b Calculation Spreadsheet.xls	C-2c, C-9b Help
Equation C-3, C-8 Calculation Spreadsheet.xls	C-3, C-8 Help
Equation C-4, C-8 Calculation Spreadsheet.xls	C-4, C-8 Help
Equation C-5, C-8 Calculation Spreadsheet.xls	C-5, C-8 Help
Equation C-10 Calculation Spreadsheet.xls	C-10 Help
Equation C-11 Calculation Spreadsheet.xls	C-11 Help

Using a Calculation Spreadsheet to Make Calculations

The guidance provided in this section applies to each of the calculation spreadsheets for subpart C. Additional guidance is provided for each individual calculation spreadsheet in the sections below.

Color coding

The calculation spreadsheets contain green input cells, gray informational cells, and red-bordered results cells filled with yellow or white. Users should use green input cells to enter all data specific to their facility, unit, or process. Gray informational cells contain parameter names, column and row headings, equation constants and subtotals. Calculation results are displayed in red-bordered results cells filled with yellow or white. For red-bordered, yellow-filled results cells, the values in these cells should be entered in the appropriate and separate calculation spreadsheet (as directed below cell) where additional calculations will be made. For red-bordered, white filled results cells, the values in these cells should be entered in e-GGRT for the appropriate process units. All cells that are not green input cells are locked and cannot be modified.

	Green input cell (data entry)
	Gray informational cells (locked)
	Red-bordered, yellow-filled results cells (enter in appropriate and separate calculation spreadsheet)
	Red-bordered, white filled results cells (enter in e-GGRT)

Stop and Warning Messages

The calculation spreadsheets will display a stop message if the user enters a value that is invalid or a warning message if the user enters a value outside the EPA estimated range for a particular data element. For invalid data entries, the stop messages will not allow a user to proceed and the user must reenter valid data before moving forward. For data entries that are outside the EPA estimated range for a particular data element, the

warning messages will allow a user to proceed if the user deems the entered value to be accurate.

Multiple Configuration Types and Multiple Fuels

Users with multiple configuration types and multiple fuels should use separate calculation spreadsheets for each configuration type and for each fuel. Users should not aggregate data for multiple configuration types or fuels when using these calculation spreadsheets.

Using the Equation C-1, C-8 Calculation Spreadsheet

Use this spreadsheet to calculate the annual CO₂, CH₄, and N₂O mass emissions for a stationary fuel combustion configuration that uses the Equation C-1, Tier 1 calculation methodology for any given fuel. Use Equation C-1 on this spreadsheet except when natural gas billing records are used to quantify fuel usage and gas consumption is expressed in units of therms or million Btu. In that case, use Equation C-1a or C-1b, as applicable. Use a separate spreadsheet for each configuration and for each fuel. The Equation C-1, C-8 Calculation Spreadsheet performs the calculations using Equations C-1 and C-8 provided below.

(Equation C-1)	$CO_2 = 1 \times 10^{-3} * Fuel * HHV * EF$
(Equation C-8)	$CH_4 \text{ or } N_2O = 1 \times 10^{-3} * Fuel * HHV * EF$

Begin by entering the facility name, your name, the configuration identifier, reporting period, and any additional comments in the green input cells of the general information table located immediately below the equation in the calculation spreadsheet. This is for your records.

Facility Name:	
Reporter Name:	
Unit or Group Name/ ID:	
Configuration Type:	
Fuel/ Fuel Type:	
Reporting Period:	
Comments:	
Unit Type:	General Stationary Fuel Combustion

Next, enter the requested information in the green input cells in the Fuel Input Data table.

Fuel Input Data

[Fuel] = Mass or volume of fuel combusted per year, from company records as defined in §98.6 (express mass in short tons for solid fuel, volume in standard cubic feet for gaseous fuel, and volume in gallons for liquid fuel)	
[HHV] = Default High heat value of the fuel, from Table C-1 (mmBtu/mass or mmBtu/volume)	

The calculation spreadsheet will calculate the annual CO₂, CH₄, and N₂O emissions from fuel combustion. The calculation spreadsheet will also convert CH₄ and N₂O emissions to units of carbon dioxide equivalent (CO₂e). The calculated values will be displayed in red-bordered cells at the bottom of the spreadsheet. These values should be entered in e-GGRT for this fuel and configuration type combination.

Annual CO₂ Mass Emissions For the Specific Fuel Type (metric tons) from Equation C-1

[EF] = Fuel-Specific Default CO ₂ Emission Factor, from Table C-1 (kg CO ₂ /mmBtu)	
[CO ₂] = Annual CO ₂ emissions from combustion of the specified fuel (metric tons)	0.00

Enter this value in e-GGRT

Annual CH₄ Mass Emissions For the Specific Fuel Type (metric tons) from Equation C-8

[EF] = Fuel-Specific Default Emission Factor for CH ₄ , from Table C-2 (kg CH ₄ /mmBtu)	
[CH ₄] = Annual CH ₄ emissions from combustion of the specified fuel (metric tons)	0.00

Enter this value in e-GGRT

Annual N₂O Mass Emissions For the Specific Fuel Type (metric tons) from Equation C-8

[EF] = Fuel-Specific Default Emission Factor for N ₂ O, from Table C-2 (kg N ₂ O/mmBtu)	
[N ₂ O] = Annual N ₂ O emissions from combustion of the specified fuel (metric tons)	0.00

Enter this value in e-GGRT

Annual CH₄ Mass Emissions For the Specific Fuel Type Converted to Carbon Dioxide Equivalent (metric tons CO₂e)

[GWP _{CH₄}] = Global Warming Potential for CH ₄	21
[CH ₄] = Annual CH ₄ emissions from combustion of the specified fuel (metric tons CO ₂ e)	0.00

Enter this value in e-GGRT

Annual N₂O Mass Emissions For the Specific Fuel Type Converted to Carbon Dioxide Equivalent (metric tons CO₂e)

[GWP _{N₂O}] = Global Warming Potential for N ₂ O	310
[N ₂ O] = Annual N ₂ O emissions from combustion of the specified fuel (metric tons CO ₂ e)	0.00

Enter this value in e-GGRT

Using the Equation C-1a, C-8a Calculation Spreadsheet

Use this spreadsheet to calculate the annual CO₂, CH₄, and N₂O emissions from natural gas usage for a configuration that fires natural gas and if billing records are used to quantify fuel usage and gas consumption is expressed in units of therms. Use a separate spreadsheet for each configuration and for each fuel. The Equation C-1a, C-8a Calculation Spreadsheet performs the calculations using Equations C-1a and C-8a provided below.

(Equation C-1a)

$$CO_2 = 1 \times 10^{-3} [0.1 * Gas * EF]$$

(Equation C-8a)

$$CH_4 \text{ or } N_2O = 1 \times 10^{-3} * Fuel * 0.1 * EF$$

Begin by entering the facility name, your name, the configuration identifier, reporting period, and any additional comments in the green input cells of the general information table located immediately below the equation in the calculation spreadsheet. This is for your records.

Facility Name:	
Reporter Name:	
Unit or Group Name/ ID:	
Configuration Type:	
Fuel/ Fuel Type:	
Reporting Period:	
Comments:	
Unit Type:	General Stationary Fuel Combustion

Next, enter the requested information in the green input cells in the Fuel Input Data table.

Fuel Input Data

[Gas] or [Fuel] = Annual natural gas usage, from billing records (therms)	
[0.1] - Conversion Factor from therms to mmBtu (constant)	0.1
[1 x 10 ⁻³] = Conversion Factor from kg to metric tons (constant)	0.001

The calculation spreadsheet will calculate the annual CO₂, CH₄, and N₂O emissions from fuel combustion. The calculation spreadsheet will also convert CH₄ and N₂O emissions to units of carbon dioxide equivalent (CO₂e). The calculated values will be displayed in red-bordered cells at the bottom of the spreadsheet. These values should be entered in e-GGRT for this fuel and configuration type combination.

Annual CO₂ Mass Emissions For the Specific Fuel Type (metric tons) from Equation C-1a

[EF] = Fuel-Specific Default CO ₂ Emission Factor for natural gas, from Table C-1 (kg CO ₂ /mmBTU)	53.02
[CO ₂] = Annual CO ₂ emissions from natural gas combustion (metric tons)	0.00

Enter this value in e-GGRT

Annual CH₄ Mass Emissions For the Specific Fuel Type (metric tons) from Equation C-8a

[EF] = Fuel-Specific Default CH ₄ Emission Factor for natural gas, from Table C-2 (kg CH ₄ /mmBTU)	0.001
[CH ₄] = Annual CH ₄ emissions from combustion of natural gas (metric tons)	0.00

Enter this value in e-GGRT

Annual N₂O Mass Emissions For the Specific Fuel Type (metric tons) from Equation C-8a

[EF] = Fuel-Specific Default N ₂ O Emission Factor for natural gas, from Table C-2 (kg N ₂ O/mmBTU)	0.0001
[N ₂ O] = Annual N ₂ O emissions from combustion of natural gas (metric tons)	0.00

Enter this value in e-GGRT

Annual CH₄ Mass Emissions For the Specific Fuel Type Converted to Carbon Dioxide Equivalent (metric tons CO₂e)

[GWP _{CH₄}] = Global Warming Potential for CH ₄	21
[CH ₄] = Annual CH ₄ emissions from combustion of the specified fuel (metric tons CO ₂ e)	0.00

Enter this value in e-GGRT

Annual N₂O Mass Emissions For the Specific Fuel Type Converted to Carbon Dioxide Equivalent (metric tons CO₂e)

[GWP _{N₂O}] = Global Warming Potential for N ₂ O	310
[N ₂ O] = Annual N ₂ O emissions from combustion of the specified fuel (metric tons CO ₂ e)	0.00

Enter this value in e-GGRT

Using the Equation C-1b, C-8b Calculation Spreadsheet

Use this spreadsheet to calculate the annual CO₂, CH₄, and N₂O emissions from natural gas usage for a configuration that fires natural gas and if billing records are used to quantify fuel usage and gas consumption is expressed in units of mmBtu. Use a separate spreadsheet for each configuration and for each fuel. The Equation C-1b, C-8b Calculation Spreadsheet performs the calculations using Equations C-1b and C-8b provided below.

(Equation C-1b)	$CO_2 = 1 \times 10^{-3} * Gas * EF$
(Equation C-8b)	$CH_4 \text{ or } N_2O = 1 \times 10^{-3} * Fuel * EF$

Begin by entering the facility name, your name, the configuration identifier, reporting period, and any additional comments in the green input cells of the general information table located immediately below the equation in the calculation spreadsheet. This is for your records.

Facility Name:	
Reporter Name:	
Unit or Group Name/ ID:	
Configuration Type:	
Fuel/ Fuel Type:	
Reporting Period:	
Comments:	
Unit Type:	General Stationary Fuel Combustion

Next, enter the requested information in the green input cells in the Fuel Input Data table.

Fuel Input Data

[Gas] or [Fuel] = Annual natural gas usage from billing records (mmBtu)	
[1 x 10 ⁻³] = Conversion Factor from kg to metric tons (constant)	0.001

The calculation spreadsheet will calculate the annual CO₂, CH₄, and N₂O emissions from fuel combustion. The calculation spreadsheet will also convert CH₄ and N₂O emissions to units of carbon dioxide equivalent (CO₂e). The calculated values will be displayed in red-bordered cells at the bottom of the spreadsheet. These values should be entered in e-GGRT for this fuel and configuration type combination.

Annual CO₂ Mass Emissions For the Specific Fuel Type (metric tons) from Equation C-1b

[EF] = Fuel-Specific Default CO ₂ Emission Factor for natural gas, from Table C-1 (kg CO ₂ /mmBtu)	53.02
[CO ₂] = Annual CO ₂ emissions from natural gas combustion (metric tons)	0.00

Enter this value in e-GGRT

Annual CH₄ Mass Emissions For the Specific Fuel Type (metric tons) from Equation C-8b

[EF] = Fuel-Specific Default Emission Factor for CH ₄ , from Table C-2 (kg CH ₄ /mmBtu)	0.001
[CH ₄] = Annual CH ₄ emissions from natural gas combustion (metric tons)	0.00

Enter this value in e-GGRT

Annual N₂O Mass Emissions For the Specific Fuel Type (metric tons) from Equation C-8b

[EF] = Fuel-Specific Default Emission Factor for N ₂ O, from Table C-2 (kg N ₂ O/mmBtu)	0.0001
[N ₂ O] = Annual N ₂ O emissions from natural gas combustion (metric tons)	0.00

Enter this value in e-GGRT

Annual CH₄ Mass Emissions For the Specific Fuel Type Converted to Carbon Dioxide Equivalent (metric tons CO₂e)

[GWP _{CH₄}] = Global Warming Potential for CH ₄	21
[CH ₄] = Annual CH ₄ emissions from combustion of the specified fuel (metric tons CO ₂ e)	0.00

Enter this value in e-GGRT

Annual N₂O Mass Emissions For the Specific Fuel Type Converted to Carbon Dioxide Equivalent (metric tons CO₂e)

[GWP _{N₂O}] = Global Warming Potential for N ₂ O	310
[N ₂ O] = Annual N ₂ O emissions from combustion of the specified fuel (metric tons CO ₂ e)	0.00

Enter this value in e-GGRT

Using the Equation C-2a, C-2b, C-9a Calculation Spreadsheet

Use this spreadsheet to calculate the annual CO₂, CH₄, and N₂O mass emissions for a stationary fuel combustion configuration that uses the Equation C-2a, Tier 2 calculation methodology. This spreadsheet performs the calculation using Equations C-2a, C-2b, and C-9a, which are provided below (although included, Equation C-2b is not always required, see 40 CFR 98.33(a)(2)(ii)). Use a separate spreadsheet for each configuration and for each fuel. The Equation C-2a, C-2b, C-9a Calculation Spreadsheet performs the calculations using Equations C-2a, C-2b, and C-9a provided below.

(Equation C-2a)

$$CO_2 = 1 \times 10^{-3} * Fuel * HHV * EF$$

(Equation C-2b)

$$(HHV)_{annual} = \frac{\sum_{i=1}^n (HHV)_i * (Fuel)_i}{\sum_{i=1}^n (Fuel)_i}$$

(Equation C-9a)

$$CH_4 \text{ or } N_2O = 1 \times 10^{-3} * HHV * EF * Fuel$$

Begin by entering the facility name, your name, the configuration identifier, reporting period, and any additional comments in the green input cells of the general information table located immediately below the equation in the calculation spreadsheet. This is for your records.

Facility Name:	
Reporter Name:	
Unit or Group Name/ ID:	
Configuration Type:	
Fuel/ Fuel Type:	
Reporting Period:	
Comments:	
Unit Type:	General Stationary Fuel Combustion

Next, enter the requested information in the green input cells in the Input for Weighted Annual Average HHV (only if required or elected) table.

Input for Weighted Annual Average HHV (only if required or elected)

	[Fuel] = Mass or volume of the fuel combusted, for the month, from company records (express mass in short tons for solid fuel, volume in standard cubic feet for gaseous fuel, and volume in gallons for liquid fuel)	[HHV] = Measured high heat value of the fuel, for the month, which may be the arithmetic average of multiple determinations (mmBtu/mass or mmBtu/volume)
Month		
January		
February		
March		
April		
May		
June		
July		
August		
September		
October		
November		
December		

The calculation spreadsheet will calculate the weighted annual average high heat value of the fuel (HHV_{annual}). The calculated value will be displayed in a red-bordered cell with yellow fill above the Fuel Input Data table. This value should be entered in the Fuel Input Data table (shown below) along with the mass or volume of fuel combusted during the reporting year. Alternatively, you may enter an annual average HHV consistent with Section 98.33(a)(2)(ii).

Weighted Annual Average HHV from Equation C-2b

[HHV _{annual}] = Weighted annual average high heat value of the fuel (mmBtu per mass or volume).	
--	--

Use this value as input for Equations C-2a and C-9a, if appropriate

Next, enter the requested information in the green input cells in the Fuel Input Data table.

Fuel Input Data

[Fuel] = Mass or volume of the fuel combusted during the year, from company records as defined in §98.6 (express mass in short tons for solid fuel, volume in standard cubic feet for gaseous fuel, and volume in gallons for liquid fuel)	
[HHV] = Annual average high heat value of the fuel (mmBtu/ mass or mmBtu/ volume). The average HHV shall be calculated according to the requirements of paragraph (a)(2)(ii) of this section.	
[1 x 10 ⁻³] = Conversion Factor from kg to metric tons (constant)	0.001

Use the weighted annual average HHV calculated above or annual average HHV consistent with Section 98.333(a)(2)(ii).

The calculation spreadsheet will calculate the annual CO₂, CH₄, and N₂O emissions from fuel combustion. The calculation spreadsheet will also convert CH₄ and N₂O emissions to units of carbon dioxide equivalent (CO₂e). The calculated values will be displayed in red-bordered cells with white fill at the bottom of the spreadsheet. These values should be entered in e-GGRT for this fuel and configuration type combination.

Annual CO₂ Mass Emissions For the Specific Fuel Type (metric tons) from Equation C-2a

[EF] = Fuel-Specific Default CO ₂ Emission Factor, from Table C-1 (kg CO ₂ /mmBtu)	
[CO ₂] = Annual CO ₂ mass emissions for a specific fuel type (metric tons)	0.00

Enter this value in e-GGRT

Annual CH₄ Mass Emissions For the Specific Fuel Type (metric tons) from Equation C-9a

[EF] = Fuel-Specific Default CH ₄ Emission Factor, from Table C-2 (kg CH ₄ /mmBtu)	
[CH ₄] = Annual CH ₄ emissions from combustion of the specified fuel (metric tons)	0.00

Enter this value in e-GGRT

Annual N₂O Mass Emissions For the Specific Fuel Type (metric tons) from Equation C-9a

[EF] = Fuel-Specific Default N ₂ O Emission Factor, from Table C-2 (kg N ₂ O/mmBtu)	
[N ₂ O] = Annual N ₂ O emissions from the combustion of a particular type of fuel (metric tons)	0.00

Enter this value in e-GGRT

Annual CH₄ Mass Emissions For the Specific Fuel Type Converted to Carbon Dioxide Equivalent (metric tons CO₂e)

[GWP _{CH4}] = Global Warming Potential for CH ₄	21
[CH ₄] = Annual CH ₄ emissions from the combustion of a particular type of fuel (metric tons CO ₂ e)	0.00

Enter this value in e-GGRT

Annual N₂O Mass Emissions For the Specific Fuel Type Converted to Carbon Dioxide Equivalent (metric tons CO₂e)

[GWP _{N2O}] = Global Warming Potential for N ₂ O	310
[N ₂ O] = Annual N ₂ O emissions from combustion of the specified fuel (metric tons CO ₂ e)	0.00

Enter this value in e-GGRT

Using the Equation C-2c, C-9b Calculation Spreadsheet

Use this spreadsheet to calculate the annual CO₂, CH₄, and N₂O emissions for a stationary fuel combustion configuration that uses the Equation C-2c, Tier 2 calculation methodology. This spreadsheet should be used for MSW when the use of Tier 2 is allowed or (optionally) for solid fuels using Tier 2 in units that generate steam. Use a separate spreadsheet for each configuration and for each fuel. The Equation C-2c, C-9b Calculation Spreadsheet performs the calculations using Equations C-2c and C-9b provided below.

(Equation C-2c)	$\text{CO}_2 = 1 \times 10^{-3} \text{ Steam} * B * EF$
(Equation C-9b)	$\text{CH}_4 \text{ or N}_2\text{O} = 1 \times 10^{-3} \text{ Steam} * B * EF$

Begin by entering the facility name, your name, the configuration identifier, reporting period, and any additional comments in the green input cells of the general information table located immediately below the equation in the calculation spreadsheet. This is for your records.

Facility Name:	
Reporter Name:	
Unit or Group Name/ ID:	
Configuration Type:	
Fuel/ Fuel Type:	
Reporting Period:	
Comments:	
Unit Type:	General Stationary Fuel Combustion

Next, enter the requested information in the green input cells in the Fuel Input Data table.

Fuel Input Data

[Steam] = Total mass of steam generated by MSW or solid fuel combustion during the reporting year (lb steam)	
[B] = Ratio of the boiler's maximum rated heat input capacity to its design rated steam output capacity (mmBtu/lb steam)	
[1 x 10 ⁻³] = Conversion Factor from kg to metric tons (constant)	0.001

The calculation spreadsheet will calculate the annual CO₂, CH₄, and N₂O emissions from fuel combustion. The calculation spreadsheet will also convert CH₄ and N₂O emissions to units of carbon dioxide equivalent (CO₂e). The calculated values will be displayed in red-bordered cells at the bottom of the spreadsheet. These values should be entered in e-GGRT for this fuel and configuration type combination.

Annual CO₂ Mass Emissions For the Specific Fuel Type (metric tons) from Equation C-2c

[EF] = Fuel-Specific Default CO ₂ Emission Factor, from Table C-1 (kg CO ₂ /mmBtu)	
[CO ₂] = Annual CO ₂ mass emissions from MSW or solid fuel combustion (metric tons)	0.00

Enter this value in e-GGRT

Annual CH₄ Mass Emissions For the Specific Fuel Type (metric tons) from Equation C-9b

[EF] = Fuel-Specific Default CH ₄ Emission Factor, from Table C-2 (kg CH ₄ /mmBtu)	
[CH ₄] = Annual CH ₄ emissions from combustion of the specified solid fuel (metric tons)	0.00

Enter this value in e-GGRT

Annual N₂O Mass Emissions For the Specific Fuel Type (metric tons) from Equation C-9b

[EF] = Fuel-Specific Default N ₂ O Emission Factor, from Table C-2 (kg N ₂ O/mmBtu)	
[N ₂ O] = Annual N ₂ O emissions from combustion of the specified solid fuel (metric tons)	0.00

Enter this value in e-GGRT

Annual CH₄ Mass Emissions For the Specific Fuel Type Converted to Carbon Dioxide Equivalent (metric tons CO₂e)

[GWP _{CH₄}] = Global Warming Potential for CH ₄	21
[CH ₄] = Annual CH ₄ emissions from combustion of the specified fuel (metric tons CO ₂ e)	0.00

Enter this value in e-GGRT

Annual N₂O Mass Emissions For the Specific Fuel Type Converted to Carbon Dioxide Equivalent (metric tons CO₂e)

[GWP _{N₂O}] = Global Warming Potential for N ₂ O	310
[N ₂ O] = Annual N ₂ O emissions from combustion of the specified fuel (metric tons CO ₂ e)	0.00

Enter this value in e-GGRT

Using the Equation C-3, C-8 Calculation Spreadsheet

Use this spreadsheet to calculate the annual CO₂, CH₄, and N₂O mass emissions for solid fuels using Tier 3 Calculation methodology at each configuration. Use a separate spreadsheet for each configuration and for each fuel. The Equation C-3, C-8 Calculation Spreadsheet performs the calculations using Equations C-3 and C-8 provided below.

(Equation C-3)	$CO_2 = \frac{44}{12} * Fuel * CC * 0.91$
(Equation C-8)	$CH_4 \text{ or } N_2O = 1 \times 10^{-3} * Fuel * HHV * EF$

Begin by entering the facility name, your name, the configuration identifier, reporting period, and any additional comments in the green input cells of the general information table located immediately below the equation in the calculation spreadsheet. This is for your records.

Facility Name:	
Reporter Name:	
Unit or Group Name/ ID:	
Configuration Type:	
Fuel/ Fuel Type:	
Reporting Period:	
Comments:	
Unit Type:	General Stationary Fuel Combustion

Next, enter the requested information in the green input cells in the Fuel Input Data table.

Fuel Input Data

[Fuel] = Annual mass of the solid fuel combusted, from company records as defined in §98.6 (short tons)	
[CC] = Annual average carbon content of the solid fuel (percent by weight, expressed as a decimal fraction, e.g., 95% = 0.95). The annual average carbon content shall be determined using the same procedures as specified for HHV in paragraph (a)(2)(ii) of this section	
[HHV] = Default high heat value of the fuel from Table C-1 of this subpart; alternatively, for Tier 3, if actual HHV data are available for the reporting year, you may average these data using the procedures specified in paragraph (a)(2)(ii) of this section, and use the average value in Equation C-8 (mmBtu per mass or volume)	

The calculation spreadsheet will calculate the annual CO₂, CH₄, and N₂O emissions from fuel combustion. The calculation spreadsheet will also convert CH₄ and N₂O emissions to units of carbon dioxide equivalent (CO₂e). The calculated values will be displayed in red-bordered cells at the bottom of the spreadsheet. These values should be entered in e-GGRT for this fuel and configuration type combination.

Annual CO₂ Mass Emissions For the Specific Fuel Type (metric tons) from Equation C-3

[CO ₂] = Annual CO ₂ mass emissions from combustion of the specific solid fuel (metric tons)	0.00
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Enter this value in e-GGRT

Annual CH₄ Mass Emissions For the Specific Fuel Type (metric tons) from Equation C-8

[EF] = Fuel-Specific Default Emission Factor for CH ₄ , from Table C-2 (kg CH ₄ /mmBtu)	
[CH ₄] = Annual CH ₄ emissions from combustion of the specified fuel (metric tons)	0.00

Enter this value in e-GGRT

Annual N₂O Mass Emissions For the Specific Fuel Type (metric tons) from Equation C-8

[EF] = Fuel-Specific Default Emission Factor for N ₂ O, from Table C-2 (kg N ₂ O/mmBtu)	
[N ₂ O] = Annual N ₂ O emissions from combustion of the specified fuel (metric tons)	0.00

Enter this value in e-GGRT

Annual CH₄ Mass Emissions For the Specific Fuel Type Converted to Carbon Dioxide Equivalent (metric tons CO₂e)

[GWP _{CH₄}] = Global Warming Potential for CH ₄	21
[CH ₄] = Annual CH ₄ emissions from combustion of the specified fuel (metric tons CO ₂ e)	0.00

Enter this value in e-GGRT

Annual N₂O Mass Emissions For the Specific Fuel Type Converted to Carbon Dioxide Equivalent (metric tons CO₂e)

[GWP _{N₂O}] = Global Warming Potential for N ₂ O	310
[N ₂ O] = Annual N ₂ O emissions from combustion of the specified fuel (metric tons CO ₂ e)	0.00

Enter this value in e-GGRT

Using the Equation C-4, C-8 Calculation Spreadsheet

Use this spreadsheet to calculate the annual CO₂, CH₄, and N₂O mass emissions for liquid fuels using the Tier 3 calculation methodology at each configuration. Use a separate spreadsheet for each configuration and for each fuel. The Equation C-4, C-8 Calculation Spreadsheet performs the calculations using Equations C-4 and C-8 provided below.

(Equation C-4)	$CO_2 = \frac{44}{12} * Fuel * CC * 0.001$
(Equation C-8)	$CH_4 \text{ or } N_2O = 1 \times 10^{-3} * Fuel * HHV * EF$

Begin by entering the facility name, your name, the configuration identifier, reporting period, and any additional comments in the green input cells of the general information table located immediately below the equation in the calculation spreadsheet. This is for your records.

Facility Name:	
Reporter Name:	
Unit or Group Name/ ID:	
Configuration Type:	
Fuel/ Fuel Type:	
Reporting Period:	
Comments:	
Unit Type:	General Stationary Fuel Combustion

Next, enter the requested information in the green input cells in the Fuel Input Data table.

Fuel Input Data

[Fuel] = Annual volume of the liquid fuel combusted (gallons). The volume of fuel combusted must be measured directly, using fuel flow meters calibrated according to §98.3(i). Fuel billing meters may be used for this purpose. Tank drop measurements may also be used.	
[CC] = Annual average carbon content of the liquid fuel (kg C per gallon of fuel). The annual average carbon content shall be determined using the same procedures as specified for HHV in paragraph (a)(2)(ii) of this section	
[HHV] = Default high heat value of the fuel from Table C-1 of this subpart; alternatively, for Tier 3, if actual HHV data are available for the reporting year, you may average these data using the procedures specified in paragraph (a)(2)(ii) of this section, and use the average value in Equation C-8 (mmBtu per mass or volume)	

The calculation spreadsheet will calculate the annual CO₂, CH₄, and N₂O emissions from fuel combustion. The calculation spreadsheet will also convert CH₄ and N₂O emissions to units of carbon dioxide equivalent (CO₂e). The calculated values will be displayed in red-bordered cells at the bottom of the spreadsheet. These values should be entered in e-GGRT for this fuel and configuration type combination.

Annual CO₂ Mass Emissions For the Specific Fuel Type (metric tons) from Equation C-4

[CO ₂] = Annual CO ₂ mass emissions from combustion of the specific liquid fuel (metric tons)	0.00
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Enter this value in e-GGRT

Annual CH₄ Mass Emissions For the Specific Fuel Type (metric tons) from Equation C-8

[EF] = Fuel-Specific Default Emission Factor for CH ₄ , from Table C-2 (kg CH ₄ /mmBtu)	
[CH ₄] = Annual CH ₄ emissions from combustion of the specified fuel (metric tons)	0.00

Enter this value in e-GGRT

Annual N₂O Mass Emissions For the Specific Fuel Type (metric tons) from Equation C-8

[EF] = Fuel-Specific Default Emission Factor for N ₂ O, from Table C-2 (kg N ₂ O/mmBtu)	
[N ₂ O] = Annual N ₂ O emissions from combustion of the specified fuel (metric tons)	0.00

Enter this value in e-GGRT

Annual CH₄ Mass Emissions For the Specific Fuel Type Converted to Carbon Dioxide Equivalent (metric tons CO₂e)

[GWP _{CH₄}] = Global Warming Potential for CH ₄	21
[CH ₄] = Annual CH ₄ emissions from combustion of the specified fuel (metric tons CO ₂ e)	0.00

Enter this value in e-GGRT

Annual N₂O Mass Emissions For the Specific Fuel Type Converted to Carbon Dioxide Equivalent (metric tons CO₂e)

[GWP _{N₂O}] = Global Warming Potential for N ₂ O	310
[N ₂ O] = Annual N ₂ O emissions from combustion of the specified fuel (metric tons CO ₂ e)	0.00

Enter this value in e-GGRT

Using the Equation C-5, C-8 Calculation Spreadsheet

Use this spreadsheet to calculate the annual CO₂, CH₄, and N₂O mass emissions for gaseous fuels using the Tier 3 calculation methodology at each configuration. Use a separate spreadsheet for each configuration and for each fuel. The Equation C-5, C-8 Calculation Spreadsheet performs the calculations using Equations C-5 and C-8 provided below.

(Equation C-5)	$CO_2 = \frac{44}{12} * Fuel * CC * \frac{MW}{MVC} * 0.001$
(Equation C-8)	$CH_4 \text{ or } N_2O = 1 \times 10^{-3} * Fuel * HHV * EF$

Begin by entering the facility name, your name, the configuration identifier, reporting period, and any additional comments in the green input cells of the general information table located immediately below the equation in the calculation spreadsheet. This is for your records.

Facility Name:	
Reporter Name:	
Unit or Group Name/ ID:	
Configuration Type:	
Fuel/ Fuel Type:	
Reporting Period:	
Comments:	
Unit Type:	General Stationary Fuel Combustion

Next, enter the requested information in the green input cells in the Fuel Input Data table.

Fuel Input Data

[Fuel] = Annual volume of the gaseous fuel combusted (scf). The volume of fuel combusted must be measured directly, using fuel flow meters calibrated according to §98.3(i). Fuel billing meters may be used for this purpose	
[CC] = Annual average carbon content of the gaseous fuel (kg C per kg of fuel). The annual average carbon content shall be determined using the same procedures as specified for HHV in paragraph (a)(2)(ii) of this section	
[HHV] = Default high heat value of the fuel from Table C-1 of this subpart; alternatively, for Tier 3, if actual HHV data are available for the reporting year, you may average these data using the procedures specified in paragraph (a)(2)(ii) of this section, and use the average value in Equation C-8 (mmBtu per mass or volume)	
[MW] = Annual average molecular weight of the gaseous fuel (kg/kg-mole). The annual average molecular weight shall be determined using the same procedures as specified for HHV in paragraph (a)(2)(ii) of this section	
[MVC] = Molar Volume Conversion Factor, as defined in §98.6.. Use 849.5 scf per kg mole if you select 68 °F as standard temperature and 836.6 scf per kg mole if you select 60 °F as standard temperature	

The calculation spreadsheet will calculate the annual CO₂, CH₄, and N₂O emissions from fuel combustion. The calculation spreadsheet will also convert CH₄ and N₂O emissions to units of carbon dioxide equivalent (CO₂e). The calculated values will be displayed in red-bordered cells at the bottom of the spreadsheet. These values should be entered in e-GGRT for this fuel and configuration type combination.

Annual CO₂ Mass Emissions For the Specific Fuel Type (metric tons) from Equation C-5

[CO ₂] = Annual CO ₂ mass emissions from combustion of the specific gaseous fuel (metric tons)	
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Enter this value in e-GGRT

Annual CH₄ Mass Emissions For the Specific Fuel Type (metric tons) from Equation C-8

[EF] = Fuel-Specific Default Emission Factor for CH ₄ , from Table C-2 (kg CH ₄ /mmBtu)	
[CH ₄] = Annual CH ₄ emissions from combustion of the specified fuel (metric tons)	

Enter this value in e-GGRT

Annual N₂O Mass Emissions For the Specific Fuel Type (metric tons) from Equation C-8

[EF] = Fuel-Specific Default Emission Factor for N ₂ O, from Table C-2 (kg N ₂ O/mmBtu)	
[N ₂ O] = Annual N ₂ O emissions from combustion of the specified fuel (metric tons)	

Enter this value in e-GGRT

Annual CH₄ Mass Emissions For the Specific Fuel Type Converted to Carbon Dioxide Equivalent (metric tons CO₂e)

[GWP _{CH₄}] = Global Warming Potential for CH ₄	21
[CH ₄] = Annual CH ₄ emissions from combustion of the specified fuel (metric tons CO ₂ e)	

Enter this value in e-GGRT

Annual N₂O Mass Emissions For the Specific Fuel Type Converted to Carbon Dioxide Equivalent (metric tons CO₂e)

[GWP _{N₂O}] = Global Warming Potential for N ₂ O	310
[N ₂ O] = Annual N ₂ O emissions from combustion of the specified fuel (metric tons CO ₂ e)	

Enter this value in e-GGRT

Using the Equation C-10 Calculation Spreadsheet

Use the Equation C-10 Calculation Spreadsheet to calculate annual CH₄ and N₂O emissions using an emission factor and the annual heat input from a fuel combusted in units that use Tier 4 (CEMS, Configuration Types 2 and 5) or units that report under 40 CFR Part 75 (Configuration Type 6). Use a separate spreadsheet for each configuration and for each fuel. The Equation C-10 Calculation Spreadsheet performs the calculations using Equation C-10 provided below.

(Equation C-10)

$$\text{CH}_4 \text{ or N}_2\text{O} = 0.001 * (\text{HI})_A * \text{EF}$$

Begin by entering the facility name, your name, the configuration identifier, reporting period, and any additional comments in the green input cells of the general information table located immediately below the equation in the calculation spreadsheet. This is for your records.

Facility Name:	
Reporter Name:	
Unit or Group Name/ ID:	
Configuration Type:	
Fuel/ Fuel Type:	
Reporting Period:	
Comments:	
Unit Type:	General Stationary Fuel Combustion

Next, enter the requested information in the green input cells in the Fuel Input Data table.

Fuel Input Data

[HI _A] = Cumulative annual heat input from combustion of the fuel (mmBtu)	
---	--

The calculation spreadsheet will calculate the annual CH₄ and N₂O emissions from fuel combustion. The calculated values will be displayed in red-bordered cells near the bottom of the spreadsheet.



Note: These values should be entered in e-GGRT if this is NOT a "part 75 unit" (i.e. a unit that is subject to subpart D or a unit that uses the methods in part 75 to quantify CO₂ mass emissions in accordance with §98.33(a)(5)).

Annual CH₄ Mass Emissions For the Specific Fuel Type (metric tons) from Equation C-10

[EF] = Fuel-Specific Default Emission Factor for CH ₄ , from Table C-2 (kg CH ₄ /mmBtu)	
[CH ₄] = Annual CH ₄ emissions from combustion of the specified fuel (metric tons)	0.00

Enter this value in e-GGRT if this is **NOT** a "part 75 unit" (i.e. a unit that is subject to subpart D or a unit that uses the methods in part 75 to quantify CO₂ mass emissions in accordance with §98.33(a)(5)). For part 75 units, enter only CO₂e in e-GGRT (calculated below).

Annual N₂O Mass Emissions For the Specific Fuel Type (metric tons) from Equation C-10

[EF] = Fuel-Specific Default Emission Factor for N ₂ O, from Table C-2 (kg N ₂ O/mmBtu)	
[N ₂ O] = Annual N ₂ O emissions from combustion of the specified fuel (metric tons)	0.000

Enter this value in e-GGRT if this is **NOT** a "part 75 unit" (i.e. a unit that is subject to subpart D or a unit that uses the methods in part 75 to quantify CO₂ mass emissions in accordance with §98.33(a)(5)). For part 75 units, enter only CO₂e in e-GGRT (calculated below).

The calculation spreadsheet will also convert CH₄ and N₂O emissions to units of carbon dioxide equivalent (CO₂e). The calculated values will be displayed in red-bordered cells at the bottom of the spreadsheet.



Note: These values should be entered in e-GGRT if this is a "part 75 unit" (i.e. a unit that is subject to subpart D or a unit that uses the methods in part 75 to quantify CO₂ mass emissions in accordance with §98.33(a)(5)).

Annual CH₄ Mass Emissions For the Specific Fuel Type Converted to Carbon Dioxide Equivalent (metric tons CO₂e)

[GWP _{CH4}] = Global Warming Potential for CH ₄	21
[CH ₄] = Annual CH ₄ emissions from combustion of the specified fuel (metric tons CO ₂ e)	0.00

Enter this value in e-GGRT if this is a "part 75 unit" (i.e. a unit that is subject to subpart D or a unit that uses the methods in part 75 to quantify CO₂ mass emissions in accordance with §98.33(a)(5)).

Annual N₂O Mass Emissions For the Specific Fuel Type Converted to Carbon Dioxide Equivalent (metric tons CO₂e)

[GWP _{N2O}] = Global Warming Potential for N ₂ O	310
[N ₂ O] = Annual N ₂ O emissions from combustion of the specified fuel (metric tons CO ₂ e)	0.000

Enter this value in e-GGRT if this is a "part 75 unit" (i.e. a unit that is subject to subpart D or a unit that uses the methods in part 75 to quantify CO₂ mass emissions in accordance with §98.33(a)(5)).

Using the Equation C-11 Calculation Spreadsheet

Use the Equation C-11 Calculation Spreadsheet to calculate annual CO₂ emissions from sorbent use using annual sorbent use, the number of moles CO₂ released upon capture of one mole of the acid gas species being removed, the molecular weight of CO₂, and the molecular weight of sorbent. This data is only required for configuration types 1 and 3. Use a separate spreadsheet for each configuration and for each fuel. The Equation C-11 Calculation Spreadsheet performs the calculations using Equation C-11 provided below.

(Equation C-11)

$$CO_2 = 0.91 * S * R * \left(\frac{MW_{CO_2}}{MW_S} \right)$$

Begin by entering the facility name, your name, the configuration identifier, reporting period, and any additional comments in the green input cells of the general information table located immediately below the equation in the calculation spreadsheet. This is for your records.

Facility Name:	
Reporter Name:	
Unit or Group Name/ ID:	
Configuration Type:	
Reporting Period:	
Comments:	
Unit Type:	General Stationary Fuel Combustion

Next, enter the requested information in the green input cells in the Data Input table.

Data Input

[S] = Limestone or other sorbent used in reporting year (metric tons)		
[R] = Number of moles of CO ₂ released upon capture of one mole of the acid gas species being removed (R = 1 when the sorbent is CaCO ₃ and the targeted acid gas species is SO ₂)	1	The default value for R is 1 when the sorbent is CaCO ₃ and the targeted acid gas species is SO ₂
[MW _s] - Molecular weight of sorbent (100 if calcium carbonate)	100	The default value for MW _s is 100 when the sorbent is calcium carbonate

The calculation spreadsheet will calculate the annual CO₂ emissions from sorbent use. The calculated value will be displayed in red-bordered cell at the bottom of the spreadsheet. This value should be entered in e-GGRT for this fuel and configuration type combination.

Annual CO₂ Mass Emissions From Sorbent (metric tons) from Equation C-11

[CO ₂] = Annual CO ₂ emissions from sorbent (metric tons)	0.00
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 Enter this value in e-GGRT

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See Also

- [Table C-1 to Subpart C](#)
- [Table C-2 to Subpart C](#)

Table C-1 to Subpart C

Table C–1: Default CO₂ Emission Factors and High Heat Values for Various Types of Fuel

Fuel type	Default high heat value	Default CO ₂ emission factor
Coal and coke	mmBtu/short ton	kg CO₂/mmBtu
Anthracite	25.09	103.54
Bituminous	24.93	93.4
Subbituminous	17.25	97.02
Lignite	14.21	96.36
Coke	24.8	102.04
Mixed (Commercial sector)	21.39	95.26
Mixed (Industrial coking)	26.28	93.65
Mixed (Industrial sector)	22.35	93.91
Mixed (Electric Power sector)	19.73	94.38
Natural gas	mmBtu/scf	kg CO₂/mmBtu
(Weighted U.S. Average)	1.028 × 10 ⁻⁰³	53.02
Petroleum products	mmBtu/gallon	kg CO₂/mmBtu
Distillate Fuel Oil No. 1	0.139	73.25
Distillate Fuel Oil No. 2	0.138	73.96
Distillate Fuel Oil No. 4	0.146	75.04
Residual Fuel Oil No. 5	0.14	72.93
Residual Fuel Oil No. 6	0.15	75.1
Used Oil	0.135	74
Kerosene	0.135	75.2
Liquefied petroleum gases (LPG)	0.092	62.98
Propane	0.091	61.46
Propylene	0.091	65.95
Ethane	0.069	62.64
Ethanol	0.084	68.44
Ethylene	0.1	67.43
Isobutane	0.097	64.91
Isobutylene	0.103	67.74
Butane	0.101	65.15
Butylene	0.103	67.73
Naphtha (<401 deg F)	0.125	68.02
Natural Gasoline	0.11	66.83
Other Oil (>401 deg F)	0.139	76.22

Pentanes Plus	0.11	70.02
Petrochemical Feedstocks	0.129	70.97
Petroleum Coke	0.143	102.41
Special Naphtha	0.125	72.34
Unfinished Oils	0.139	74.49
Heavy Gas Oils	0.148	74.92
Lubricants	0.144	74.27
Motor Gasoline	0.125	70.22
Aviation Gasoline	0.12	69.25
Kerosene-Type Jet Fuel	0.135	72.22
Asphalt and Road Oil	0.158	75.36
Crude Oil	0.138	74.49
Other fuels-solid	mmBtu/short ton	kg CO₂/mmBtu
Municipal Solid Waste	9.95 ¹	90.7
Tires	26.87	85.97
Plastics	38	75
Petroleum Coke	30	102.41
Other fuels—gaseous	mmBtu/scf	kg CO₂/mmBtu
Blast Furnace Gas	0.092×10^{-03}	274.32
Coke Oven Gas	0.599×10^{-03}	46.85
Propane Gas	2.516×10^{-03}	61.46
Fuel Gas ²	1.388×10^{-03}	59
Biomass fuels—solid	mmBtu/short ton	kg CO₂/mmBtu
Wood and Wood Residuals	15.38	93.8
Agricultural Byproducts	8.25	118.17
Peat	8	111.84
Solid Byproducts	25.83	105.51
Biomass fuels—gaseous	mmBtu/scf	kg CO₂/mmBtu
Biogas (Captured methane)	0.841×10^{-03}	52.07
Biomass Fuels—Liquid	mmBtu/gallon	kg CO₂/mmBtu
Ethanol	0.084	68.44
Biodiesel	0.128	73.84
Biodiesel (100%)	0.128	73.84
Rendered Animal Fat	0.125	71.06
Vegetable Oil	0.12	81.55

¹Use of this default HHV is allowed only for: (a) Units that combust MSW, do not generate steam, and are allowed to use Tier 1; (b) units that derive no more than 10 percent of their annual heat input from MSW and/or tires; and (c) small batch incinerators that combust no more than 1,000 tons of MSW per year.

²Reporters subject to subpart X of this part that are complying with §98.243(d) or subpart Y of this part may only use the default HHV and the default CO₂ emission factor for fuel gas combustion under the conditions prescribed in §98.243(d)(2)(i) and (d)(2)(ii) and §98.252(a)(1) and (a)(2), respectively. Otherwise, reporters subject to subpart X or subpart Y shall use either Tier 3 (Equation C–5) or Tier 4.

[74 FR 56374, Oct. 30, 2009, as amended at 75 FR 79153, Dec. 17, 2010]

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Table C-2 to Subpart C

Table C–2: Default CH₄ and N₂O Emission Factors for Various Types of Fuel

Fuel Type	Default CH ₄ Emission Factor (kg CH ₄ /mmBtu)	Default N ₂ O Emission Factor (kg N ₂ O/mmBtu)
Coal and Coke (All fuel types in Table C–1)	1.1×10^{-02}	1.6×10^{-03}
Natural Gas	1.0×10^{-03}	1.0×10^{-04}
Petroleum (All fuel types in Table C–1)	3.0×10^{-03}	6.0×10^{-04}
Municipal Solid Waste	3.2×10^{-02}	4.2×10^{-03}
Tires	3.2×10^{-02}	4.2×10^{-03}
Blast Furnace Gas	2.2×10^{-05}	1.0×10^{-04}
Coke Oven Gas	4.8×10^{-04}	1.0×10^{-04}
Biomass Fuels—Solid (All fuel types in Table C–1)	3.2×10^{-02}	4.2×10^{-03}
Biogas	3.2×10^{-03}	6.3×10^{-04}
Biomass Fuels—Liquid (All fuel types in Table C–1)	1.1×10^{-03}	1.1×10^{-04}

Note: Those employing this table are assumed to fall under the IPCC definitions of the “Energy Industry” or “Manufacturing Industries and Construction”. In all fuels except for coal the values for these two categories are identical. For coal combustion, those who fall within the IPCC “Energy Industry” category may employ a value of 1g of CH₄/mmBtu.

[74 FR 56374, Oct. 30, 2009, as amended at 75 FR 79154, Dec. 17, 2010]

Editorial Note: At 74 FR 56374, Oct. 30, 2009, part 98 was added. The added part included two tables identified as “C–2 to Subpart C”.