

# Greenhouse Gas Reporting Program

## XML Reporting Instructions for Subpart NN – Suppliers of Natural Gas and Natural Gas Liquids

United States Environmental Protection Agency  
Climate Change Division  
Washington, DC

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*These instructions explain how to report the required data for the applicable regulations. Owners and operators of units should refer to the applicable regulations for information about what data are required to be reported.*

*EPA has finalized a rule that defers the deadline for reporting data elements used as inputs to emission equations for direct emitters. (See <http://www.epa.gov/climatechange/emissions/notices.html> for a pre-publication version of the rule). In accordance with the rule, e-GGRT is not currently collecting data used as inputs to emission equations.*

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## Introduction

The U.S. Environmental Protection Agency's (EPA's) electronic greenhouse gas reporting tool (e-GGRT) extensible markup language (XML) Reporting Schema contains all of the data elements needed to comply with the greenhouse gas reporting program (GHGRP) beginning with the 2010 data collection year. The schema defines expected data elements and attributes, allowable data types for each element, and the hierarchy and order in which elements must appear. Similar to an architectural blueprint that describes the structural design of a house, an XML schema describes the structural design of an XML file. In some cases, it also defines which elements are optional and which are required, and the maximum number of occurrences allowed for each element.

The e-GGRT XML schema includes a root element, complex elements, and simple elements. A simple element is a single piece of data. A complex element is a group of simple elements which are logically grouped together. The root element is the base of the XML schema.

The elements are related to each other in parent-child relationships. The root element is the parent element of the entire schema. Complex elements are children of the root element, and complex elements can also be children of other complex elements. If a complex element is dependent on a parent complex element, the child complex element cannot be included in the XML file unless the appropriate parent complex element is also included. Parent elements are included as blue rows in the XML Data Elements tables.

The XML upload method may be used only for submitting the annual greenhouse gas (GHG) report. User and facility or supplier registration, and the Certificate of Representation, must be entered on-line using e-GGRT.

All XML files submitted to e-GGRT must be well formed and will be accepted only if they conform to the correct and current version of the e-GGRT XML schema.

An XML submission can only contain GHG data for a single facility or supplier. All data for a facility or supplier must be submitted in a single file as a complete report and must include all of the relevant subparts. It is not possible to submit a subset of any portion of a facility's data to add, delete, correct, or update. The entire report must be resubmitted to make any modification at all. Each subsequent submission for the same facility replaces all of the previously submitted data.

The e-GGRT XML schema contains enumerated lists of the units of measures for some data elements and allowable values for some data elements. For rules regarding the unit of measure or allowable values for a specific data element, please refer to the appropriate Data Elements table.

The e-GGRT XML Reporting Schema is available for download at the GHGRP web site here: [http://www.epa.gov/climatechange/emissions/e-ggrr\\_xml.html](http://www.epa.gov/climatechange/emissions/e-ggrr_xml.html). The zip file contains:

- GHG\_Final.xsd and Included Files
- SchemaChanges.xlsx

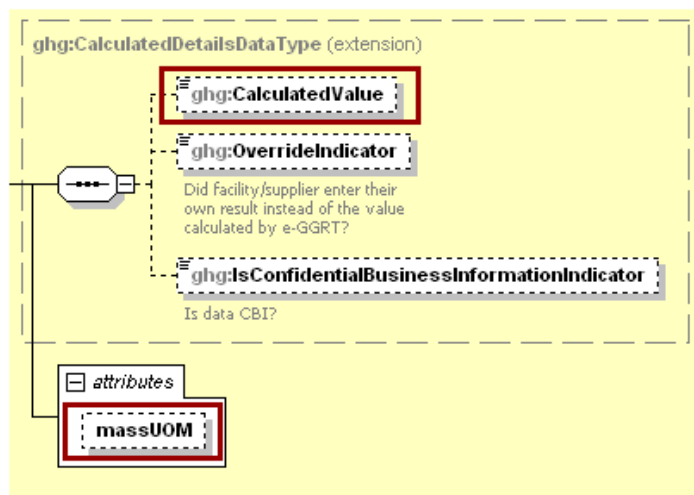
This document provides a step-by-step description of how to report data for Subpart NN Suppliers of Natural Gas and Natural Gas Liquids and overall total Subpart NN GHG data for a facility using the XML schema. Please note the following:

- **Not all data elements included in the schema must be reported.** Required or relevant data components and data elements are boxed in red in the schema diagrams and listed in the tables. If a data element is not listed in a table or referred to in the instructions, it does not need to be reported (e.g., the data element "IsConfidentialBusinessInformationIndicator", the

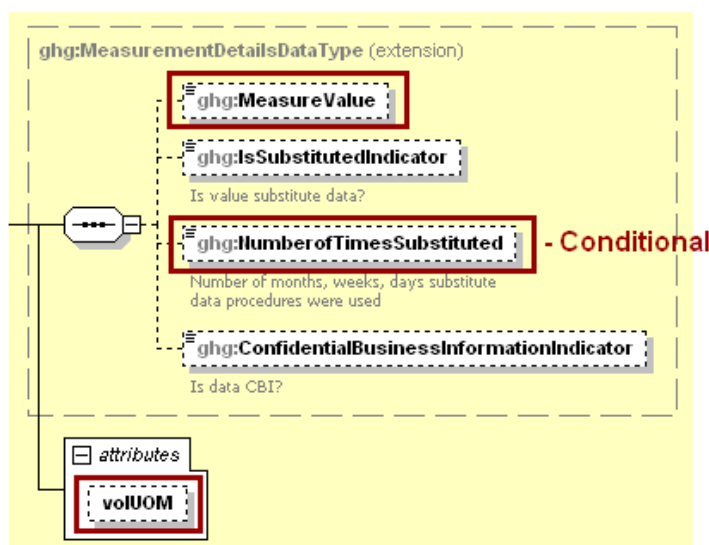
data element “NumberofTimesSubstituted”). Some data elements are conditional and only need to be reported if they are relevant to the reporting facility or supplier.

- **Enumerations are case sensitive.** Values must be entered exactly as they are displayed in order to be accepted by schema validation.
- **Data elements must be reported in a specific order.** The figures and tables in this document depict the specific order in which data elements must be reported in order to produce a well-formed XML report.
- **Data elements for calculated and measured values are not displayed in the schema diagrams.** The parent elements for calculated and measured values are displayed in the schema diagrams in this document, but the specific data elements to be reported are not displayed. The descriptions in the XML data elements tables include the specific data elements to report, which are commonly the calculated or measured value and the unit of measure. For some values, the number of times substitute data procedures were used may also be required. See Figure 1 for the expanded view of a sample data element which is a calculated value and Figure 2 for the expanded view of a sample data element which is a measured value.

**Figure 1  
Sample Calculated Value Schema Diagram**

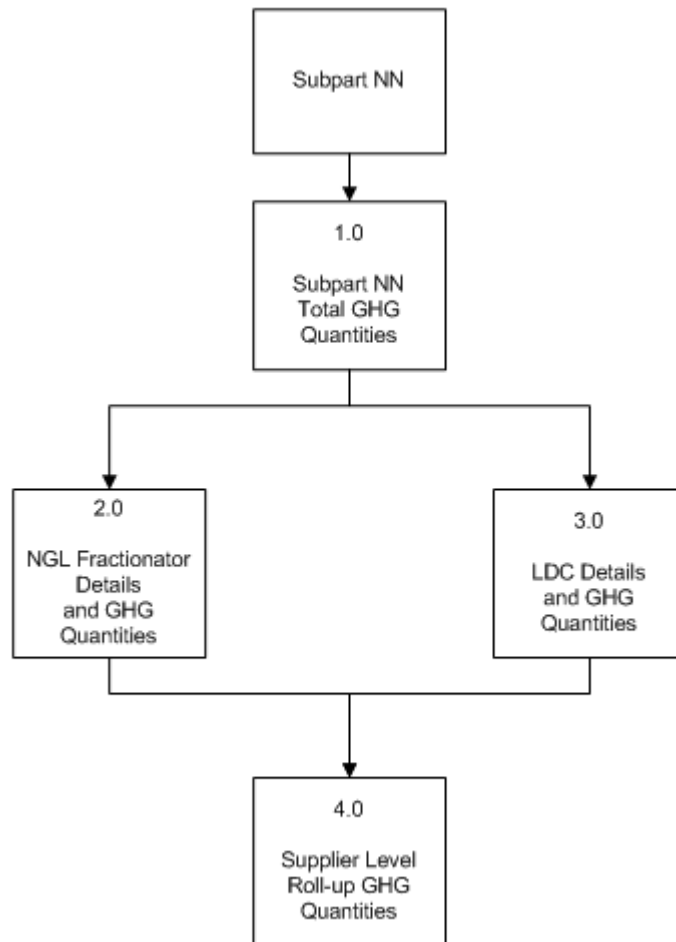


**Figure 2  
Sample Measured Value Schema Diagram**





**Figure 3**  
**Subpart NN Reporting Diagram**



The XML schema includes the following areas for reporting for Subpart NN:

- 1.0 Subpart NN Total GHG Quantities: includes the total quantity of carbon dioxide.
- 2.0 NGL Fractionator Details and GHG Quantities: includes information to report if the supplier is a fractionator of natural gas liquids.
- 3.0 LDC Details and GHG Quantities: includes information to report if the supplier is a natural gas local distribution company that delivers 460,000 Mscf or more of natural gas annually.
- 4.0 Supplier Level Roll-up GHG Quantities: includes information on how to add GHG quantity data to supplier level totals.

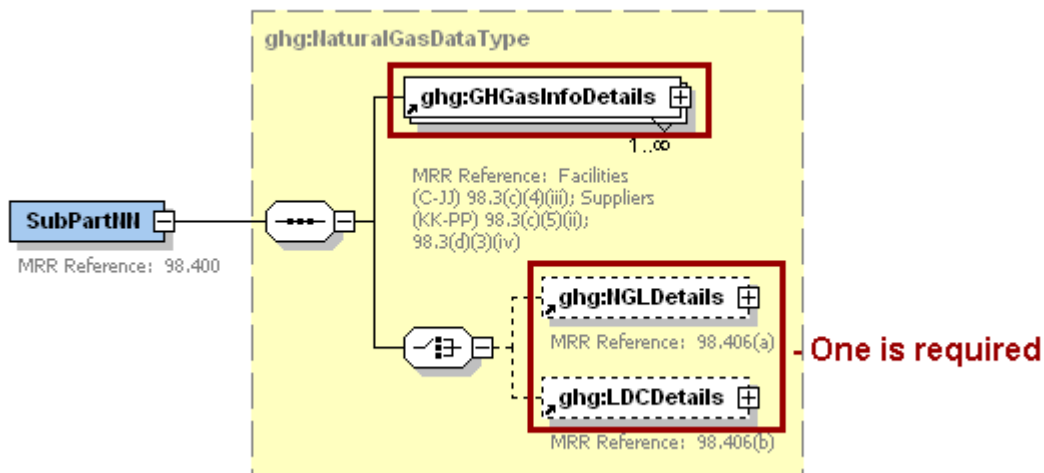
The following terminology is used throughout this document:

- **Namespace:** A namespace uniquely identifies a set of names such that there is no ambiguity when objects having different origins but the same names are mixed together.
- **Markup Language:** A way to combine text and extra information to show the structure and layout of a document. This information is expressed using markup, which is typically intermingled with the primary text. A commonly known markup language is HTML.
- **XML:** A markup language for documents containing structured information. The XML specification defines a standard way to add markup to documents. Its primary purpose is to facilitate the sharing of structured data across different information systems, particularly via the internet.
- **XML Schema:** An XML schema describes the structure of an XML document. An XML schema defines the set of rules to which the XML document must conform in order to be considered "valid" according to its schema. An instance of an XML schema is an XML schema document and is a file with the extension .xsd.
- **XML Document:** An XML document is a file containing data organized into a structured document using XML markup. An XML document is considered to be "well-formed" if it conforms to all XML syntax rules. An XML document is considered to be "valid" if it conforms to all the semantic rules defined by an associated XML schema. An XML document cannot be processed if it is not well-formed or valid. XML documents have the file extension .xml.
- **XML Element:** An XML element is a unit of the XML document that is expressed as tags in the form "<tagname>." XML elements must have either a start and end tag as in `<ghg:GHGasInfoDetails> </ghg:GHGasInfoDetails>` or a single empty tag name as in `<ghg:GHGasInfoDetails/>`. XML elements may be nested within one another in a structured hierarchy and sequence specified in an XML schema.
- **XML Attribute:** An XML attribute contains additional information about an XML element placed at the start tag of the XML element. XML attributes have the form `attributeName = "attributeValue,"` as in `<ghg:GHGasQuantity massUOM="Metric Tons">`. XML attributes are used to report identifying information or to help e-GGRT process the data being reported within the data elements.

Rounded results from calculated values should be reported in the XML schema. Please use the following rounding rules:

1. CO<sub>2</sub>e and CO<sub>2</sub> quantity data expressed in metric tons should be rounded to one decimal place. This should be done regardless of the level of data collection (e.g., product-level, supplier-level). Quantities less than 0.05 metric tons would round to 0.0 and be reported as such. Quantities greater than or equal to 0.05 metric tons would round up to 0.1 and be reported as such.
2. Other (non-GHG) quantitative data reported by the user (e.g., higher heating value, emission factor) will not need to be rounded.
3. In the case of aggregation/roll-ups, those calculations should be performed on the rounded values.

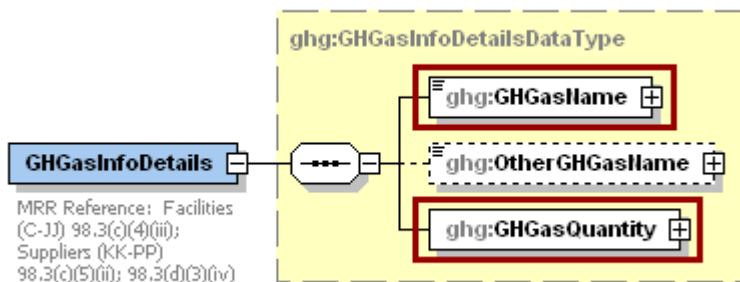
**Figure 4**  
**Subpart NN Schema Diagram**



## 1.0 Subpart NN Total GHG Quantity

Greenhouse gas information details comprise a collection of data elements to report the total annual GHG quantity of each greenhouse gas (GHG) listed in Table A-1 of the Mandatory Reporting of GHG, Part 98 reported under Subpart NN, expressed in metric tons.

**Figure 5**  
**Greenhouse Gas Information Details Schema Diagram**



For Subpart NN, report the total GHG quantity for carbon dioxide (CO<sub>2</sub>) using the following guidelines:

1. If the supplier is a fractionator of natural gas liquids (NGL), use the potential CO<sub>2</sub> quantity associated with all products delivered to customers (sum of Equation NN-8 across each fractionated NGL product), rounded to one decimal place in metric tons.

This value is calculated by summing the rounded results of Equations NN-1 and NN-2 across each fractionated NGL product – ethane, propane, butane, isobutane, and pentanes plus – (the potential CO<sub>2</sub> quantity associated with product supplied in metric tons) and subtracting the rounded result of Equation NN-7 across each fractionated NGL product (the potential CO<sub>2</sub> quantity associated with product received from other fractionators in metric tons).

2. If the supplier is a natural gas local distribution company (LDC), use the potential CO<sub>2</sub> quantity associated with the combustion or oxidation of natural gas supplied to end-users that receive less than 460,000 Mscf per year (Equation NN-6), rounded to one decimal place in metric tons.

This value is calculated by subtracting the rounded results of Equation NN-3 (potential CO<sub>2</sub> quantity associated with natural gas delivered to downstream transmission pipelines or other LDCs in metric tons), Equation NN-4 (potential CO<sub>2</sub> quantity associated with natural gas received by end users that receive a supply greater than or equal to 460,000 Mscf per year in metric tons) and Equation NN-5 (potential CO<sub>2</sub> quantities associated with product received that bypassed the city gate(s) such as natural gas received from local production and the net natural gas that is liquefied and/or stored/removed from storage by the LDC within the reporting year in metric tons) from the rounded result of Equation NN-1 or NN-2 (potential CO<sub>2</sub> quantity associated with natural gas received at the city gate(s) in metric tons).

For the GHG quantity, report the calculated value and mass unit of measure (Metric Tons) only.

**Table 1  
Greenhouse Gas Information Details XML Data Elements**

Data Element Name	Description
GHGasInfoDetails	A collection of data elements containing the total annual greenhouse gas quantity of each greenhouse gas (GHG) listed in Table A-1 of the Mandatory Reporting of GHG, Part 98 reported under this subpart, expressed in metric tons.
GHGasName	Specify the name of the GHG: Carbon Dioxide
GHGasQuantity	A collection of data elements that quantify the annual greenhouse gas quantity from this supplier category. Report the calculated value only using the guidelines above.
GHGasQuantity.massUOM	Metric Tons

**Figure 6  
Sample XML Excerpt for Greenhouse Gas Information Details**

```

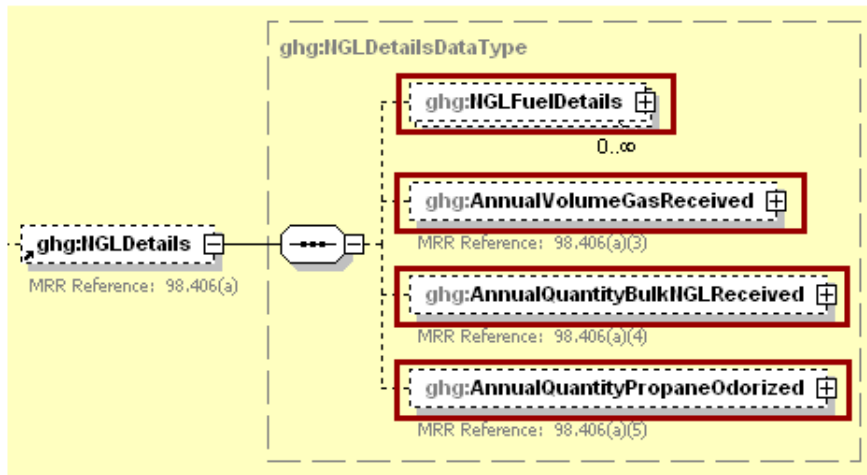
    <ghg:SubPartNN>
      <ghg:GHGasInfoDetails>
        <ghg:GHGasName>Carbon Dioxide</ghg:GHGasName>
        <ghg:GHGasQuantity massUOM="Metric Tons">
          <ghg:CalculatedValue>384781.2</ghg:CalculatedValue>
        </ghg:GHGasQuantity>
      </ghg:GHGasInfoDetails>
  
```

Note: The code excerpt above is presented here to demonstrate the concept of reporting greenhouse gas quantity data.

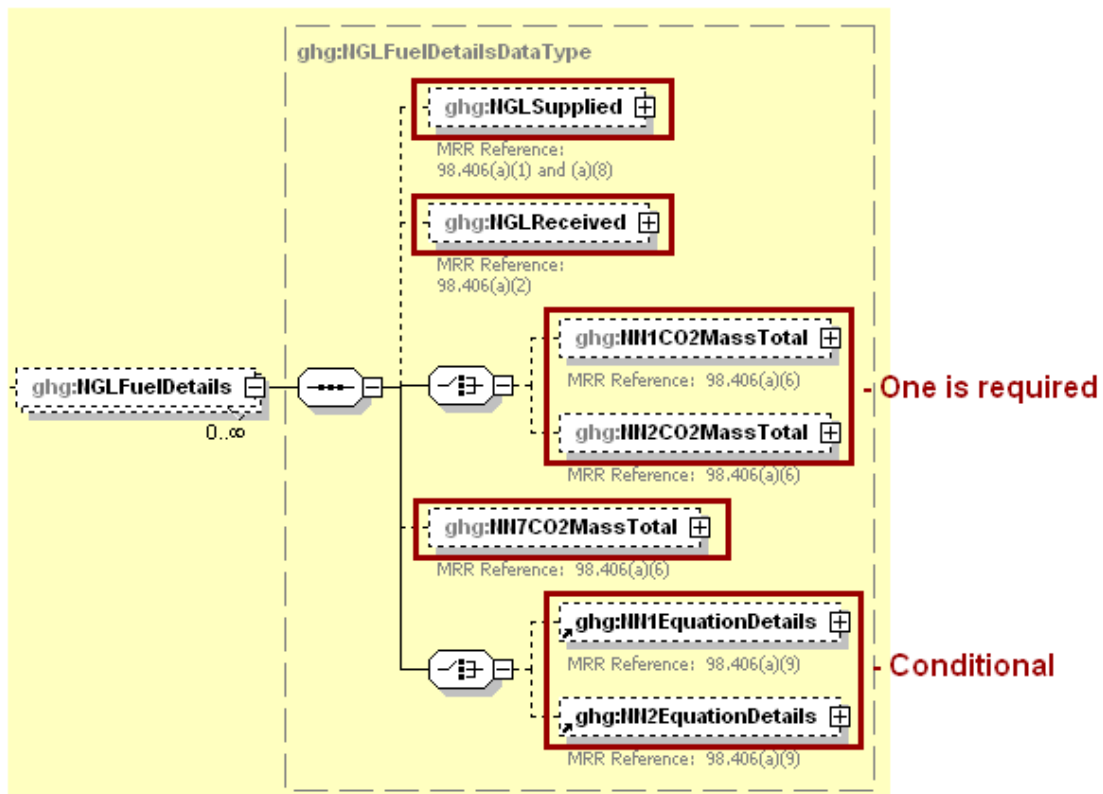
## 2.0 NGL Fractionator Details and GHG Quantities

This section contains the information that must be reported under Subpart NN for a supplier which is a natural gas liquids (NGL) fractionator.

**Figure 7**  
**NGL Fractionator Details Schema Diagram**



**Figure 8**  
**NGL Fuel Details Schema Diagram**



**Note:** Report data for each NGL product using separate instances of the parent element “NGLFuelDetails”.

Each supplier that is a NGL fractionator must report the annual quantity (barrels) of each of the following NGL products, if applicable, supplied to downstream facilities during the reporting year [98.406(a)(1)]:

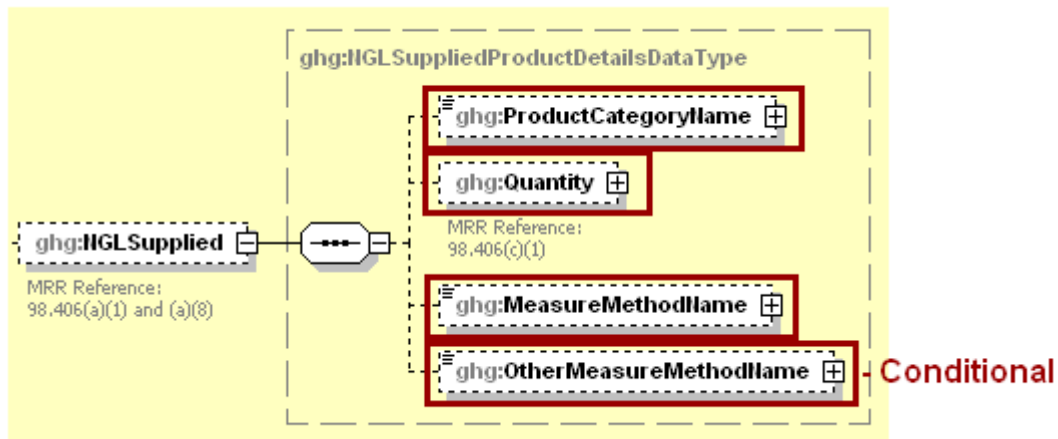
- ethane
- propane
- normal butane
- isobutane
- pentanes plus

Click this link to view [definitions of these products](#).

For each quantity of NGL required for reporting under this subpart, the supplier must report the number of days in the reporting year for which substitute data procedures were used to measure those quantities [98.406(c)(1)].

Also, the industry standard used to measure each applicable NGL product supplied must be reported [98.406(a)(8)].

**Figure 9  
NGL Supplied Schema Diagram**



**Table 2  
NGL Supplied XML Data Elements**

Data Element Name	Description
NGLDetails	A collection of data elements to report if the facility is a fractionator of natural gas liquids.
NGLFuelDetails	A collection of data elements containing information on fuels supplied and received and the GHG quantities associated with them.
NGLSupplied	A collection of data elements containing information on fuels supplied.

Data Element Name	Description
ProductCategoryName	Specify each applicable NGL product supplied to downstream facilities. See list of allowable values:  Ethane Propane Butane Isobutane Pentanes Plus
Quantity	A collection of data elements containing information on the quantity of the specified NGL product supplied to downstream facilities. Report the measured value in barrels and the number of days in the reporting year for which substitute data procedures were used to determine the value only.
Quantity.volUOM	bbl
MeasureMethodName	The industry standard used to measure the quantity of each NGL product supplied to downstream facilities or specify "Other" and report its name in the "OtherMeasureMethodName" data element. See list of allowable values:  ASTM standard ANSI standard AGA standard ASME standard API standard NAESB standard Industry standard practices Other
OtherMeasureMethodName	The industry standard used to measure the quantity of each NGL product supplied to downstream facilities. A value for this data element is required if the "MeasureMethodName" data element contains "Other".

**Figure 10**  
**Sample XML Excerpt for NGL Supplied**

```

<ghg:NGLDetails>
  <ghg:NGLFuelDetails>
    <ghg:NGLSupplied>
      <ghg:ProductCategoryName>Propane</ghg:ProductCategoryName>
      <ghg:Quantity volUOM="bbl">
        <ghg:MeasureValue>7777</ghg:MeasureValue>
        <ghg:NumberOfTimesSubstituted>5</ghg:NumberOfTimesSubstituted>
      </ghg:Quantity>
      <ghg:MeasureMethodName>AGA standard</ghg:MeasureMethodName>
    </ghg:NGLSupplied>
  </ghg:NGLFuelDetails>
</ghg:NGLDetails>
```

Note: The code excerpt above is presented here to demonstrate the concept of reporting greenhouse gas quantity data.



Each supplier that is a NGL fractionator must report the annual quantity of each of the following NGL products, if applicable, received from other NGL fractionators [98.406(a)(2)]:

- ethane
- propane
- normal butane
- isobutane
- pentanes plus

*Note: Report data for the same product for “NGLSupplied” as was used for “NGLReceived” in the same instance of the parent element “NGLFuelDetails”.*

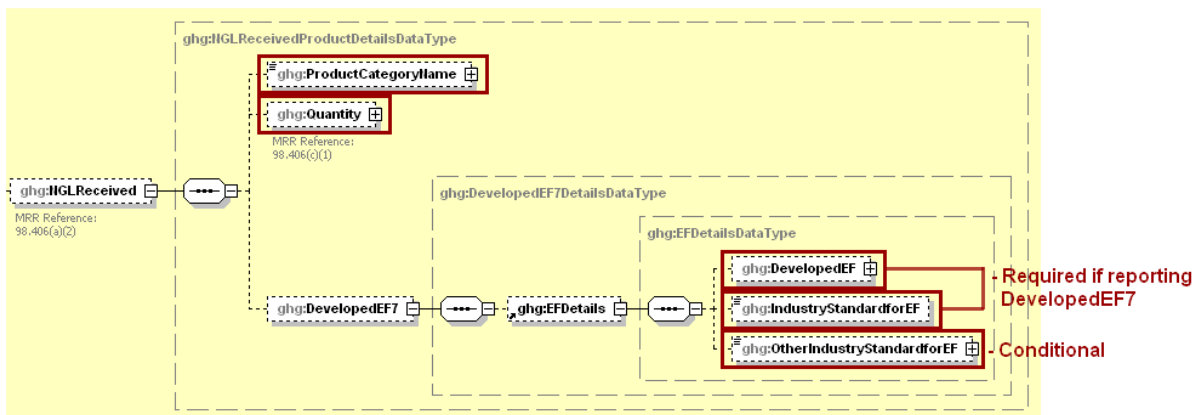
For each quantity of NGL required for reporting under this subpart, the supplier must report the number of days in the reporting year for which substitute data procedures were used to develop those quantities [98.406(c)(1)].

If you developed a supplier-specific emission factor (EF) for use in Equation NN-7, Subpart NN requires you to report the following data:

- The developed EF [98.406(a)(9)(iii)].
- The number of days in the reporting year for which substitute data procedures were used to develop the EF [98.406(c)(3)].
- The industry standard used to develop the EF [98.406(a)(9)(i)].

Reporting is not required for “DevelopedEF7” if the default emission factor was used.

**Figure 11**  
**NGL Received Schema Diagram**



**Table 3**  
**NGL Received XML Data Elements**

Data Element Name	Description
NGLReceived	A collection of data elements containing information on fuels received.
ProductCategoryName	Specify each NGL product received from other NGL fractionators. See list of allowable values:  Ethane Propane Butane Isobutane Pentanes Plus
Quantity	A collection of data elements containing information on the annual quantity of the specified NGL product received from other NGL fractionators. Report the measured value and the number of days in the reporting year for which substitute data procedures were used to determine the value only.
Quantity.volUOM	bbl
DevelopedEF7	A collection of data elements containing information to report if the facility is using a supplier-specific emission factor in Equation NN-7 instead of the default emission factor for the specified NGL product.
EFDetails	A collection of data elements containing information to report if the facility is using a supplier-specific emission factor in Equation NN-7 instead of the default emission factor for the specified NGL product.
DevelopedEF	A collection of data elements containing information on a supplier-specific CO <sub>2</sub> emission factor developed using methods outlined in §98.404. Report only if a supplier-specific CO <sub>2</sub> emission factor was used in Equation NN-7 for the specified product. Report the measured value (MT CO <sub>2</sub> /bbl) and the number of days in the reporting year for which substitute data procedures were used to determine the value only.
DevelopedEF.efUOM	MT CO <sub>2</sub> /bbl
IndustryStandardforEF	The industry standard used to develop the supplier-specific emission factor. See list of allowable values:  AGA standard GPA standard Industry standard practices Other
OtherIndustryStandardforEF	The industry standard used to develop the supplier-specific emission factor if "Other" was reported for IndustryStandardforEF.

**Figure 12**  
**Sample XML Excerpt for NGL Received**

```

<ghg:NGLReceived>
  <ghg:ProductCategoryName>Propane</ghg:ProductCategoryName>
  <ghg:Quantity volUOM="bbl">
    <ghg:MeasureValue>7777</ghg:MeasureValue>
    <ghg:NumberOfTimesSubstituted>7</ghg:NumberOfTimesSubstituted>
  </ghg:Quantity>
  <ghg:DevelopedEF7>
    <ghg:EFDetails>
      <ghg:DevelopedEF efUOM="MT CO2/bbl">
        <ghg:MeasureValue>0.237</ghg:MeasureValue>
        <ghg:NumberOfTimesSubstituted>9</ghg:NumberOfTimesSubstituted>
      </ghg:DevelopedEF>
      <ghg:IndustryStandardforEF>GPA standard</ghg:IndustryStandardforEF>
    </ghg:EFDetails>
  </ghg:DevelopedEF7>
</ghg:NGLReceived>

```

Note: The code excerpt above is presented here to demonstrate the concept of reporting greenhouse gas quantity data.

NGL fractionators must report the annual CO<sub>2</sub> quantity that would result from the complete combustion or oxidation of each NGL product supplied to downstream facilities and of each NGL product received from other NGL fractionators during the reporting year [98.406(a)(6)].

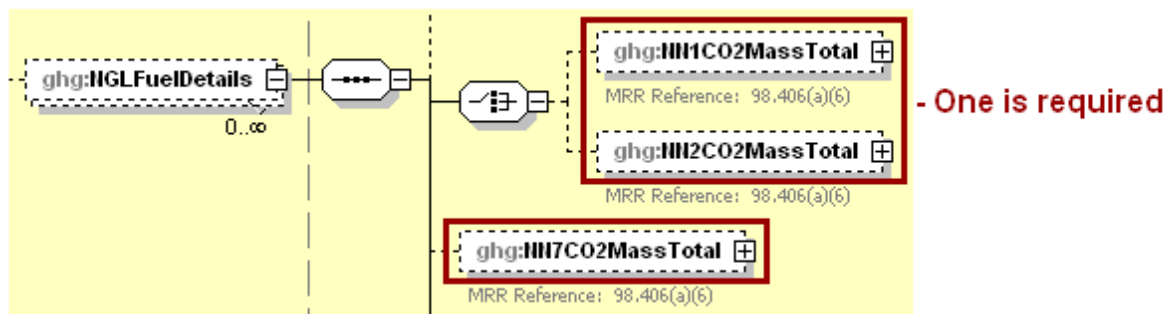
1. NGL fractionators must report the annual CO<sub>2</sub> quantity that would result from the complete combustion or oxidation of each NGL product supplied to downstream facilities during the reporting year using either Calculation Methodology 1 [98.403(a)(1)] or Calculation Methodology 2 [98.403(a)(2)]. Calculation Methodology 1 uses a higher heating value and CO<sub>2</sub> emission factor based on heat content to calculate CO<sub>2</sub> emissions from supplied product. Calculation Methodology 2 uses a CO<sub>2</sub> emission factor based on product volume to calculate CO<sub>2</sub> emissions from supplied product.

Indicate the method used for estimating the CO<sub>2</sub> quantity that would result from the complete combustion or oxidation of product supplied by reporting "NN1CO2MassTotal" if Calculation Methodology 1 (Equation NN-1) was used or reporting "NN2CO2MassTotal" if Calculation Methodology 2 (Equation NN-2) was used.

2. NGL fractionators must report the annual CO<sub>2</sub> quantity that would result from the complete combustion or oxidation of each NGL product received from other NGL fractionators during the reporting year using Equation NN-7 [98.403(c)(1)].

**Note:** Report data for the same product for the following data elements as was used for "NGLSupplied" and "NGLReceived" in the same instance of the parent element "NGLFuelDetails".

**Figure 13**  
**Fractionator Equation NN-1, NN-2 and NN-7 GHG Schema Diagram**



**Table 4**  
**Fractionator Equation NN-1, NN-2 and NN-7 GHG Quantities XML Data Elements**

Data Element Name	Description
NN1CO2MassTotal	A collection of data elements containing information on annual CO <sub>2</sub> quantities associated with the combustion or oxidation of each fractionated NGL product for redelivery to all recipients using Equation NN-1. Report the calculated value and mass unit of measure only. (Report for only NN1CO2MassTotal or NN2CO2MassTotal, but not for both.)
NN1CO2MassTotal.massUOM	Metric Tons
NN2CO2MassTotal	A collection of data elements containing information on annual CO <sub>2</sub> quantities associated with the combustion or oxidation of each fractionated NGL product for redelivery to all recipients using Equation NN-2. Report the calculated value and mass unit of measure only. (Report for only NN1CO2MassTotal or NN2CO2MassTotal, but not for both.)
NN2CO2MassTotal.massUOM	Metric Tons
NN7CO2MassTotal	A collection of data elements containing information on annual CO <sub>2</sub> quantities associated with the combustion or oxidation of each fractionated NGL product received from other fractionators using Equation NN-7. Report the calculated value and mass unit of measure only.
NN7CO2MassTotal.massUOM	Metric Tons

**Figure 14**  
**Fractionator Sample XML Excerpt for Equation NN-1 and NN-7 GHG Quantities**

```

<ghg:NN1CO2MassTotal massUOM="Metric Tons">
  <ghg:CalculatedValue>3854.2</ghg:CalculatedValue>
</ghg:NN1CO2MassTotal>
<ghg:NN7CO2MassTotal massUOM="Metric Tons">
  <ghg:CalculatedValue>1972.3</ghg:CalculatedValue>
</ghg:NN7CO2MassTotal>

```

Note: The code excerpt above is presented here to demonstrate the concept of reporting greenhouse gas quantity data.

**Figure 15**  
**Fractionator Sample XML Excerpt for Equation NN-2 and NN-7 GHG Quantities**

```

<ghg:NN2CO2MassTotal massUOM="Metric Tons">
  <ghg:CalculatedValue>1905.4</ghg:CalculatedValue>
</ghg:NN2CO2MassTotal>
<ghg:NN7CO2MassTotal massUOM="Metric Tons">
  <ghg:CalculatedValue>1843.1</ghg:CalculatedValue>
</ghg:NN7CO2MassTotal>

```

Note: The code excerpt above is presented here to demonstrate the concept of reporting greenhouse gas quantity data.

Each NGL fractionator that elects to use Calculation Methodology 1 may, for each NGL product, use a supplier-specific higher heating value (HHV) in units of MMBtu/bbl in place of the default value provided in Table NN-1 and/or a supplier-specific CO<sub>2</sub> emission factor (EF) in units of kg CO<sub>2</sub>/MMBtu in place of the default value provided in Table NN-1 [98.403(a)(1)].

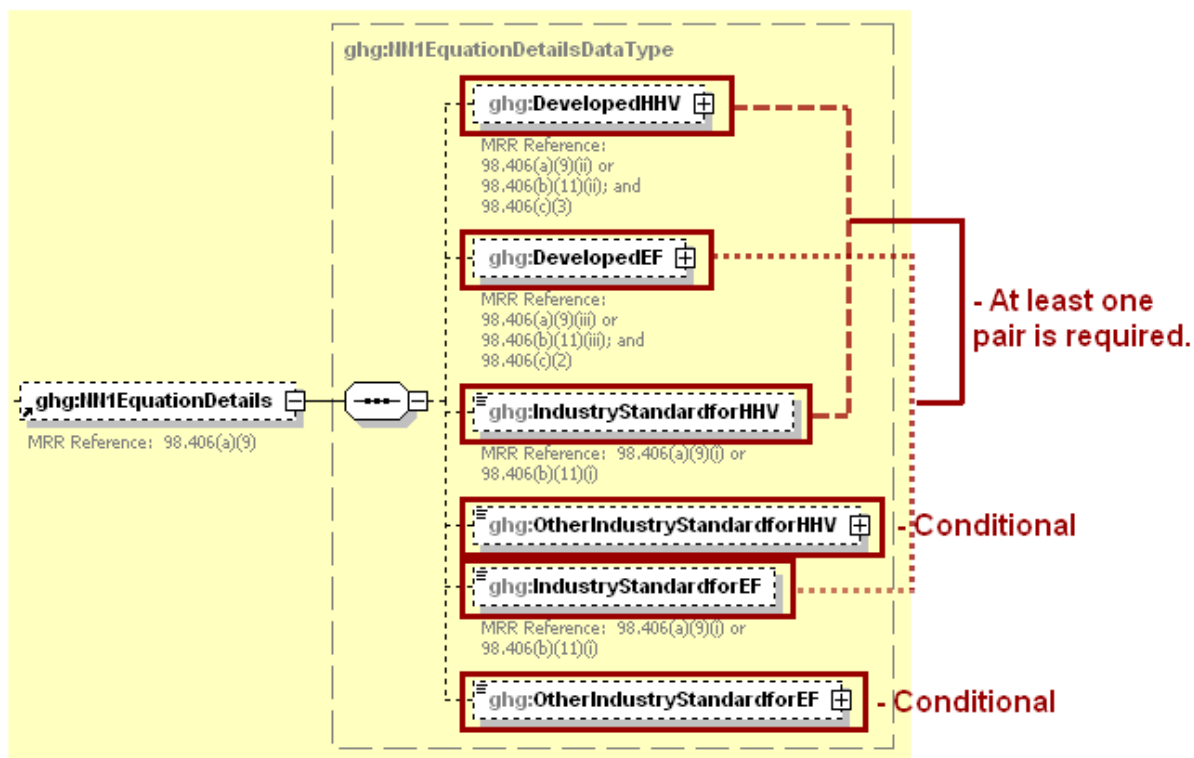
If you developed a supplier-specific EF and/or HHV for use in Equation NN-1, Subpart NN requires you to report the following data for each applicable product type:

- The developed HHV [98.406(a)(9)(ii)] and/or EF [98.406(a)(9)(iii)].
- The number of days in the reporting year for which substitute data procedures were used to develop the HHV [98.406(c)(2)] and/or EF [98.406(c)(3)].
- The industry standard used to develop the HHV and/or EF [98.406(a)(9)(i)].

Reporting is not required for “NN1EquationDetails” if the default higher heating value and default emission factor were used.

*Note: Report data for the same product for the following data elements as was used for “NGLSupplied” and “NGLReceived” in the same instance of the parent element “NGLFuelDetails”.*

**Figure 16**  
**Fractionator Equation NN-1 Details Schema Diagram**



**Table 5**  
**Fractionator Equation NN-1 Details XML Data Elements**

Data Element Name	Description
NN1EquationDetails	A collection of data elements to report if either a supplier-specific higher heating value or supplier-specific emission factor was used for Equation NN-1 instead of the default value or factor.
DevelopedHHV	A collection of data elements containing information on a supplier-specific higher heating value developed using methods outlined in §98.404. Report only if a supplier-specific higher heating value was used in Equation NN-1. Report the measured value (MMBtu/bbl) and the number of days in the reporting year for which substitute data procedures were used to determine the value only.
DevelopedHHV.heatUOM	MMBtu/bbl
DevelopedEF	A collection of data elements containing information on a supplier-specific CO <sub>2</sub> emission factor developed using methods outlined in §98.404. Report only if a supplier-specific CO <sub>2</sub> emission factor was used in Equation NN-1. Report the measured value (kg CO <sub>2</sub> /MMBtu) and the number of days in the reporting year for which substitute data procedures were used to determine the value only.

Data Element Name	Description
DevelopedEF.efUOM	kg CO2/MMBtu
IndustryStandardforHHV	Report the industry standard used to develop the value for the supplier-specific higher heating value (HHV) reported for Calculation Methodology 1. See list of allowable values:  AGA standard GPA standard Industry standard practices Other
OtherIndustryStandardforHHV	The industry standard used to develop the value for each supplier-specific higher heating value (HHV) reported for Calculation Methodology 1. A value for this data element is required if the "IndustryStandardforHHV" data element contains "Other".
IndustryStandardforEF	Report the industry standard used to develop the value for the supplier-specific CO <sub>2</sub> emission factor (EF) reported for Calculation Methodology 1. See list of allowable values;  AGA standard GPA standard Industry standard practices Other
OtherIndustryStandardforEF	The industry standard used to develop the value for the supplier-specific CO <sub>2</sub> emission factor (EF) reported for Calculation Methodology 1. A value for this data element is required if the "IndustryStandardforEF" data element contains "Other".

**Figure 17**  
**Fractionator Sample XML Excerpt for Equation NN-1 Details**

```

<ghg:NN1EquationDetails>
  <ghg:DevelopedHHV heatUOM="MMBtu/bbl">
    <ghg:MeasureValue>4.0</ghg:MeasureValue>
    <ghg:NumberOfTimesSubstituted>4</ghg:NumberOfTimesSubstituted>
  </ghg:DevelopedHHV>
  <ghg:DevelopedEF efUOM="kg CO2/MMBtu">
    <ghg:MeasureValue>61.0</ghg:MeasureValue>
    <ghg:NumberOfTimesSubstituted>4</ghg:NumberOfTimesSubstituted>
  </ghg:DevelopedEF>
  <ghg:IndustryStandardforHHV>AGA standard</ghg:IndustryStandardforHHV>
  <ghg:IndustryStandardforEF>GPA standard</ghg:IndustryStandardforEF>
</ghg:NN1EquationDetails>
    
```

Note: The code excerpt above is presented here to demonstrate the concept of reporting greenhouse gas quantity data.

Each NGL fractionator that elects to use Calculation Methodology 2 may, for each NGL product, use a supplier-specific CO<sub>2</sub> emission factor (EF) in units of metric ton CO<sub>2</sub>/bbl in place of the default value provided in Table NN-2 [98.403(a)(2)].

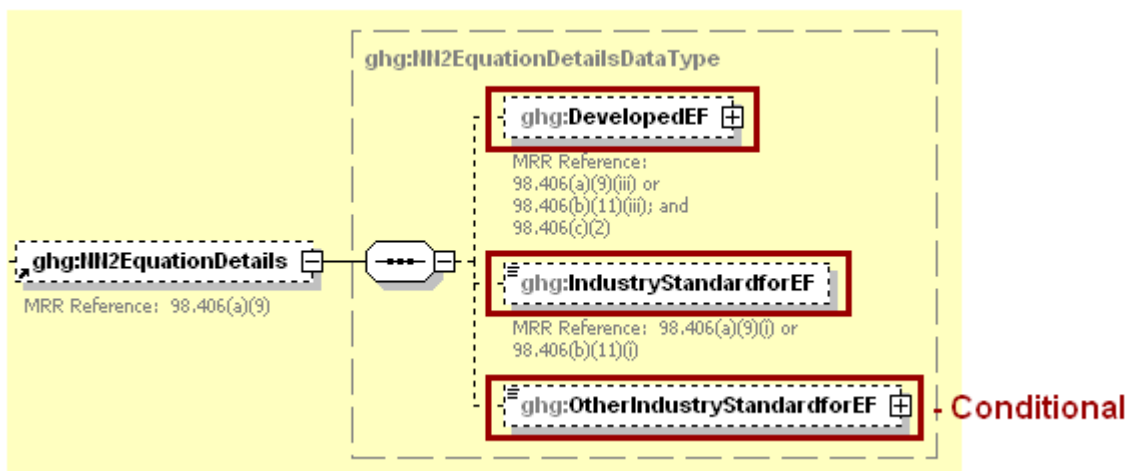
If you developed a supplier-specific EF for use in Equation NN-2, Subpart NN requires you to report the following data:

- The developed EF [98.406(a)(9)(iii)].
- The number of days in the reporting year for which substitute data procedures were used to develop the EF [98.406(c)(3)].
- The industry standard used to develop the EF [98.406(a)(9)(i)].

Reporting is not required for “NN2EquationDetails” if the default emission factor was used.

*Note: Report data for the same product for the following data elements as was used for “NGLSupplied” and “NGLReceived” in the same instance of the parent element “NGLFuelDetails”.*

**Figure 18  
Fractionator Equation NN-2 Details Schema Diagram**



**Table 6  
Fractionator Equation NN-2 Details XML Data Elements**

Data Element Name	Description
NN2EquationDetails	A collection of data elements to report if a supplier-specific emission factor was used for Equation NN-2 instead of the default emission factor.
DevelopedEF	A collection of data elements containing information on a supplier-specific CO <sub>2</sub> emission factor developed using methods outlined in §98.404. Report only if a supplier-specific CO <sub>2</sub> emissions factor was used in Equation NN-2. Report the measured value (MT CO <sub>2</sub> /bbl) and the number of days in the reporting year for which substitute data procedures were used to determine the value only.
DevelopedEF.efUOM	MT CO <sub>2</sub> /bbl



Data Element Name	Description
IndustryStandardforEF	Report the industry standard used to develop the value for the supplier-specific CO <sub>2</sub> emission factor (EF) reported for Calculation Methodology 2. See list of allowable values:  AGA standard GPA standard Industry standard practices Other
OtherIndustryStandardforEF	The industry standard used to develop the value for the supplier-specific CO <sub>2</sub> emission factor (EF) reported for Calculation Methodology 2. A value for this data element is required if the "IndustryStandardforEF" data element contains "Other".

**Figure 19**  
**Fractionator Sample XML Excerpt for Equation NN-2 Details**

```

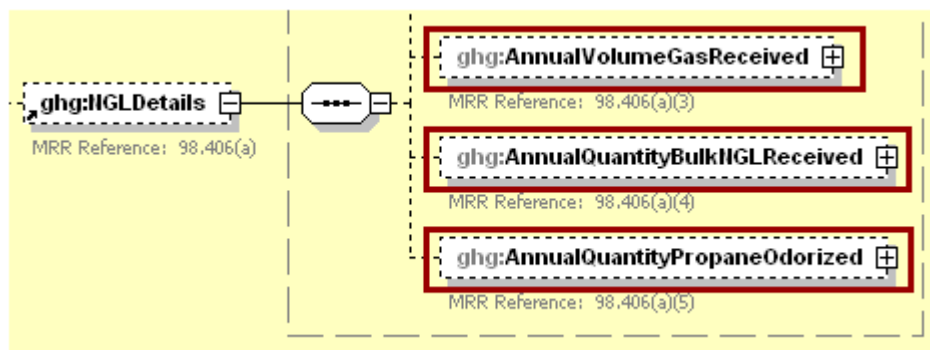
<ghg:NN2EquationDetails>
  <ghg:DevelopedEF efUOM="MT CO2/bbl">
    <ghg:MeasureValue>0.245</ghg:MeasureValue>
    <ghg:NumberOfTimesSubstituted>6</ghg:NumberOfTimesSubstituted>
  </ghg:DevelopedEF>
  <ghg:IndustryStandardforEF>Industry standard practices</ghg:IndustryStandardforEF>
</ghg:NN2EquationDetails>
</ghg:NGLFuelDetails>
    
```

Note: The code excerpt above is presented here to demonstrate the concept of reporting greenhouse gas quantity data.

Each supplier that is a NGL Fractionator must report the following data:

- The annual volume (in thousand standard cubic feet) of natural gas received for processing [98.406(a)(3)].
- The annual quantity (in barrels) of y-grade, bulk NGLs received from others for fractionation [98.406(a)(4)].
- The annual quantity (in barrels) of propane that the supplier odorized at the facility and delivered to others [98.406(a)(5)].

**Figure 20**  
**Fractionator Annual Quantity Details Schema Diagram**



**Table 7**  
**Fractionator Annual Miscellaneous Quantity Details XML Data Elements**

Data Element Name	Description
AnnualVolumeGasReceived	A collection of data elements containing information on the annual volume of natural gas received for processing. Report the measured value in Mscf only.
AnnualVolumeGasReceived.volUOM	Mscf
AnnualQuantityBulkNGLReceived	A collection of data elements containing information on the annual quantity of y-grade bulk NGL received from others for fractionation. Report the measured value in barrels only.
AnnualQuantityBulkNGLReceived.volUOM	bbl
AnnualQuantityPropaneOdorized	A collection of data elements containing information on the annual quantity of propane odorized at the facility and delivered to others. Report the measured value in barrels only.
AnnualQuantityPropaneOdorized.volUOM	bbl

**Figure 21**  
**Fractionator Sample XML Excerpt for Annual Quantity Details**

```

    <ghg:AnnualVolumeGasReceived volUOM="Mscf">
      <ghg:MeasureValue>1000</ghg:MeasureValue>
    </ghg:AnnualVolumeGasReceived>
    <ghg:AnnualQuantityBulkNGLReceived volUOM="bbl">
      <ghg:MeasureValue>2000</ghg:MeasureValue>
    </ghg:AnnualQuantityBulkNGLReceived>
    <ghg:AnnualQuantityPropaneOdorized volUOM="bbl">
      <ghg:MeasureValue>3000</ghg:MeasureValue>
    </ghg:AnnualQuantityPropaneOdorized>
  </ghg:NGLDetails>

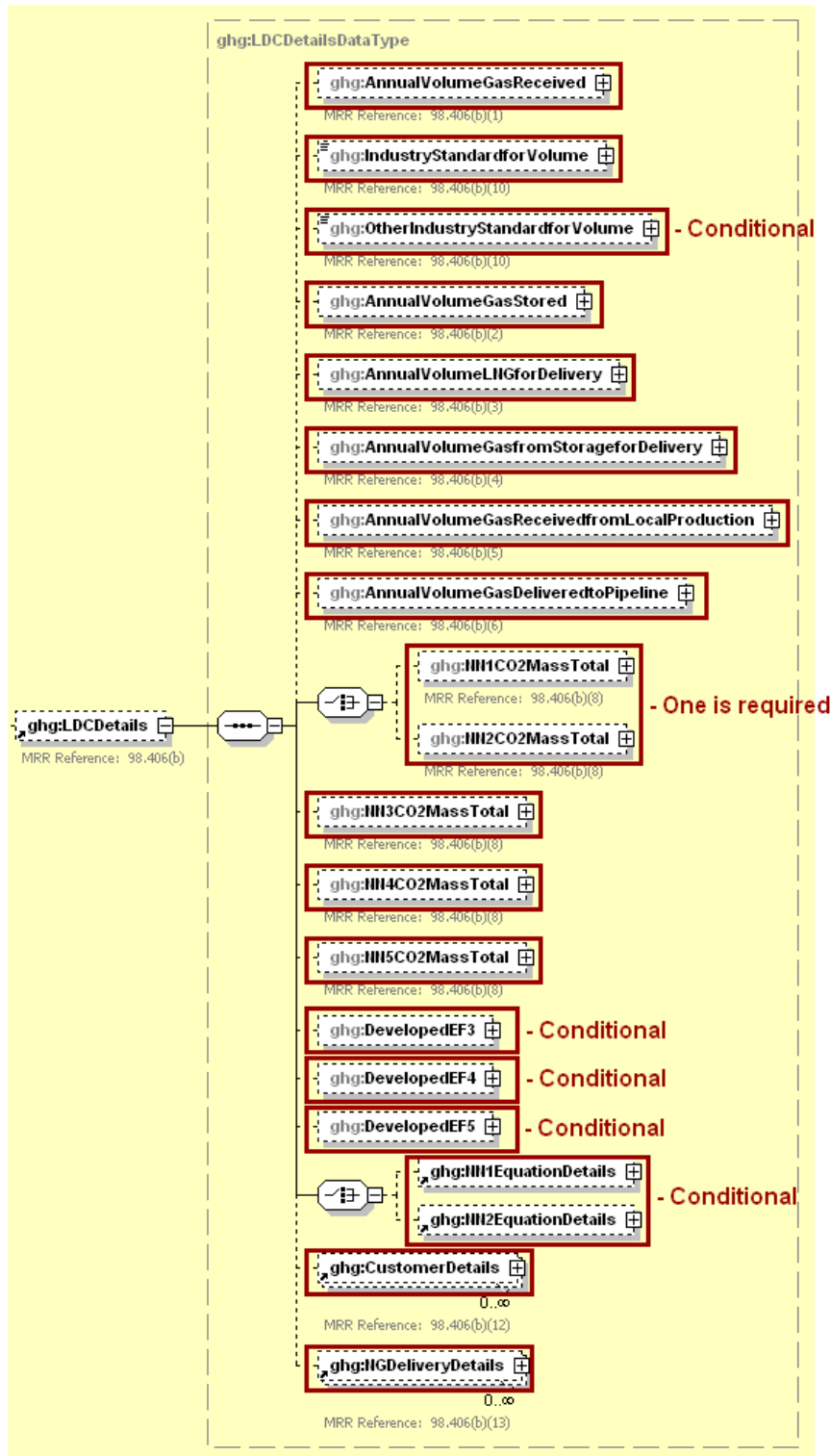
```

Note: The code excerpt above is presented here to demonstrate the concept of reporting greenhouse gas quantity data.

### 3.0 LDC Details and GHG Quantities

This section contains the information that must be reported under Subpart NN for a supplier which is a local distribution company (LDC).

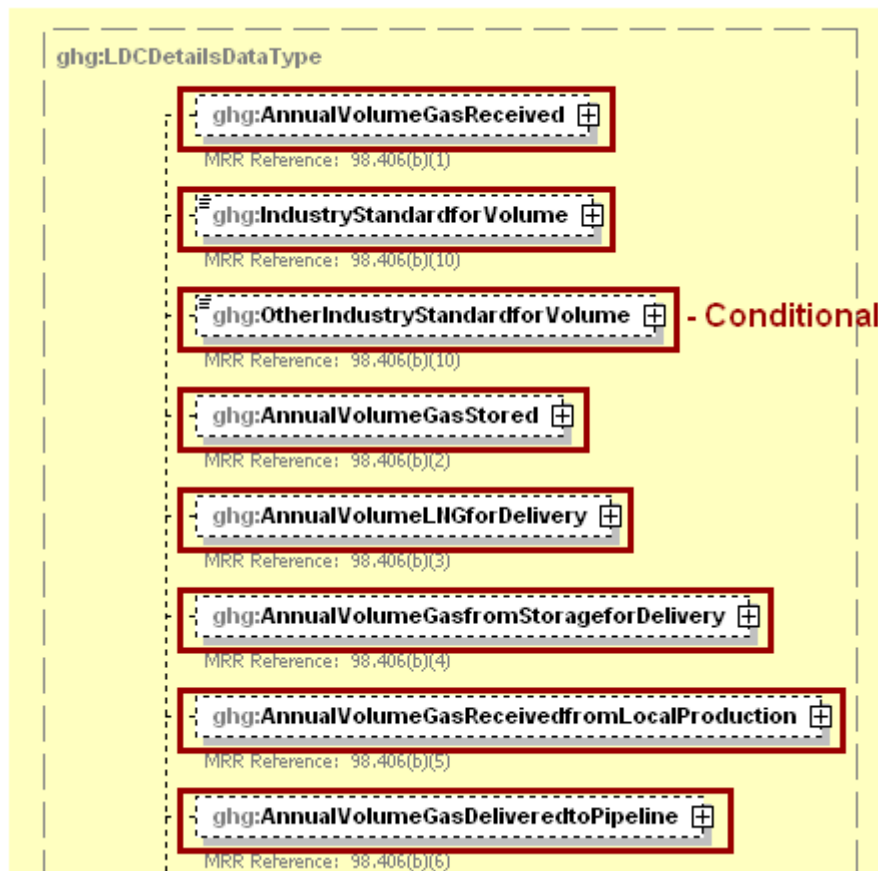
**Figure 22**  
**LDC Details and GHG Quantities Schema Diagram**



For each supplier that is a LDC, Subpart NN requires you to report the following volumes:

- The annual volume (in thousand standard cubic feet) of natural gas received by the LDC at its city gate stations for redelivery on its distribution system, including for use by the LDC [98.406(b)(1)], and the specific industry standard used to measure this volume [98.406(b)(10)].
- The annual volume (in thousand standard cubic feet) of natural gas placed into storage, including gas liquefied and placed into storage [98.406(b)(2)].
- The annual volume (in thousand standard cubic feet) of vaporized liquefied natural gas (LNG) produced at on-system vaporization facilities for delivery on the distribution system [98.406(b)(3)].
- The annual volume (in thousand standard cubic feet) of natural gas withdrawn from on-system storage (that is not delivered to the city gate) for delivery on the distribution system [98.406(b)(4)].
- The annual volume (in thousand standard cubic feet) of natural gas delivered directly to LDC systems from producers or natural gas processing plants from local production [98.406(b)(5)].
- The annual volume (in thousand standard cubic feet) of natural gas delivered to downstream gas transmission pipelines and other local distribution companies [98.406(b)(6)].

**Figure 23**  
**LDC Annual Volume Details Schema Diagram**



**Table 8**  
**LDC Annual Volume Details XML Data Elements**

Data Element Name	Description
LDCDetails	Report if the facility is a natural gas local distribution company.
AnnualVolumeGasReceived	A collection of data elements containing information on the annual volume of natural gas received at the city gate(s). It includes the annual volume of natural gas received by the LDC at its city gate station(s) for redelivery on the LDC's distribution system, including for use by the LDC. Report the measured value in Mscf and the number of days in the reporting year for which substitute data procedures were used to determine the value only.
AnnualVolumeGasReceived.volUOM	Mscf
IndustryStandardforVolume	Specify the industry standard used to measure the volume. See list of allowable values:  ASTM standard ANSI standard AGA standard ASME standard API standard NAESB standard Industry standard practices Other
OtherIndustryStandardforVolume	The industry standard used to measure the volume. A value for this data element is required if the "IndustryStandardforVolume" data element contains "Other".
AnnualVolumeGasStored	A collection of data elements containing information on the annual volume of natural gas placed into storage. Report the measured value in Mscf and the number of days in the reporting year for which substitute data procedures were used to determine the value only.
AnnualVolumeGasStored.volUOM	Mscf
AnnualVolumeLNGforDelivery	A collection of data elements containing information on the annual volume of vaporized liquefied natural gas (LNG) produced at on-system vaporization facilities for delivery on the distribution system that is not accounted for in the volume collected under the "AnnualVolumeGasReceivedatCityGate" data element. Report the measured value in Mscf and the number of days in the reporting year for which substitute data procedures were used to determine the value only.
AnnualVolumeLNGforDelivery.volUOM	Mscf

Data Element Name	Description
AnnualVolumeGasfromStorageforDelivery	A collection of data elements containing information on the annual volume of natural gas withdrawn from storage (that is not delivered to the city gate) for delivery on the distribution system. Report the measured value in Mscf and the number of days in the reporting year for which substitute data procedures were used to determine the value only.
AnnualVolumeGasfromStorageforDelivery.volUOM	Mscf
AnnualVolumeGasReceivedfromLocalProduction	A collection of data elements containing information on the annual volume of natural gas received from local production (delivered directly to the LDC systems from producers or natural gas processing plants from local production). Report the measured value in Mscf and the number of days in the reporting year for which substitute data procedures were used to determine the value only.
AnnualVolumeGasReceivedfromLocalProduction.volUOM	Mscf
AnnualVolumeGasDeliveredtoPipeline	A collection of data elements containing information on the annual volume of natural gas delivered to downstream transmission pipelines and other LDCs. Report the measured value in Mscf and the number of days in the reporting year for which substitute data procedures were used to determine the value only.
AnnualVolumeGasDeliveredtoPipeline.volUOM	Mscf

**Figure 24**  
**Sample XML Excerpt for LDC Annual Volume Details**

```

<ghg:LDCDetails>
  <ghg:AnnualVolumeGasReceived volUOM="Mscf">
    <ghg:MeasureValue>1000000</ghg:MeasureValue>
    <ghg:NumberOfTimesSubstituted>10</ghg:NumberOfTimesSubstituted>
  </ghg:AnnualVolumeGasReceived>
  <ghg:IndustryStandardforVolume>Industry standard
  practices</ghg:IndustryStandardforVolume>
  <ghg:AnnualVolumeGasStored volUOM="Mscf">
    <ghg:MeasureValue>10000</ghg:MeasureValue>
    <ghg:NumberOfTimesSubstituted>10</ghg:NumberOfTimesSubstituted>
  </ghg:AnnualVolumeGasStored>
  <ghg:AnnualVolumeLNGforDelivery volUOM="Mscf">
    <ghg:MeasureValue>1000</ghg:MeasureValue>
    <ghg:NumberOfTimesSubstituted>15</ghg:NumberOfTimesSubstituted>
  </ghg:AnnualVolumeLNGforDelivery>
  <ghg:AnnualVolumeGasfromStorageforDelivery volUOM="Mscf">
    <ghg:MeasureValue>2000</ghg:MeasureValue>
    <ghg:NumberOfTimesSubstituted>20</ghg:NumberOfTimesSubstituted>
  </ghg:AnnualVolumeGasfromStorageforDelivery>
  <ghg:AnnualVolumeGasReceivedfromLocalProduction volUOM="Mscf">
    <ghg:MeasureValue>3000</ghg:MeasureValue>
    <ghg:NumberOfTimesSubstituted>30</ghg:NumberOfTimesSubstituted>
  </ghg:AnnualVolumeGasReceivedfromLocalProduction>
  <ghg:AnnualVolumeGasDeliveredtoPipeline volUOM="Mscf">
    <ghg:MeasureValue>10000</ghg:MeasureValue>
    <ghg:NumberOfTimesSubstituted>15</ghg:NumberOfTimesSubstituted>
  </ghg:AnnualVolumeGasDeliveredtoPipeline>

```

Note: The code excerpt above is presented here to demonstrate the concept of reporting greenhouse gas quantity data.

LDCs must report the total annual CO<sub>2</sub> quantities associated with the volumes reported above [98.406(b)(8)]. Additionally, LDCs must report the volume delivered to each end-use meter registering a supply equal to or greater than 460,000 Mscf during the reporting year [98.406(b)(7)] and the total annual CO<sub>2</sub> quantity associated with these volumes [98.406(b)(8)].

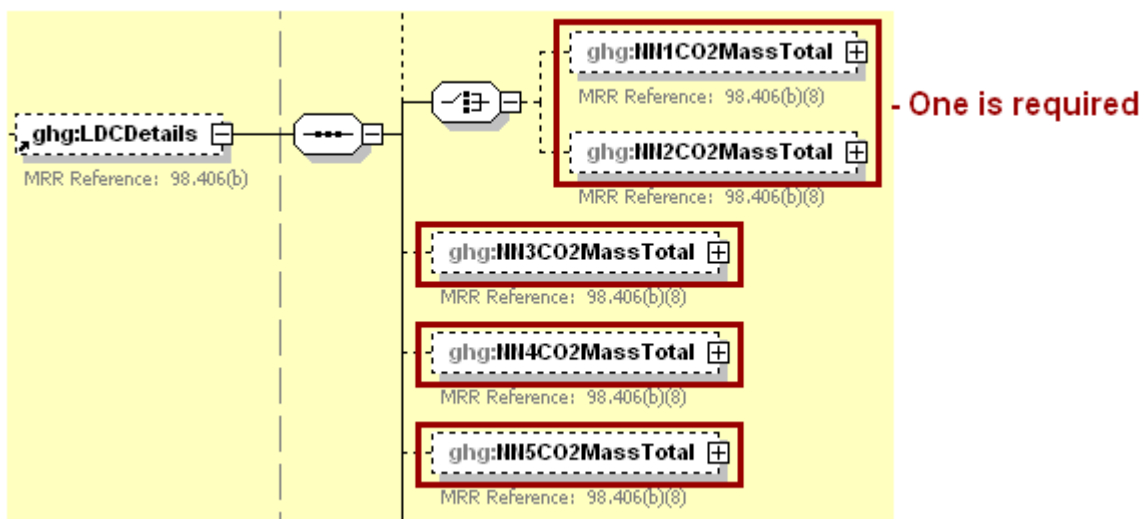
1. LDCs must estimate the CO<sub>2</sub> quantity that would result from the complete combustion or total oxidation of the natural gas received at the city gate(s). Either Calculation Methodology 1 [98.403(a)(1)] or Calculation Methodology 2 [98.403(a)(2)] may be used. Calculation Methodology 1 uses a higher heating value and CO<sub>2</sub> emission factor based on heat content to calculate CO<sub>2</sub> quantities associated with natural gas received at the city gate(s). Calculation Methodology 2 uses a CO<sub>2</sub> emission factor based on product volume to calculate CO<sub>2</sub> quantities associated with natural gas received at the city gate(s).

Indicate the method used for estimating the CO<sub>2</sub> quantity that would result from the complete combustion or oxidation of the natural gas received at the city gate(s) by reporting “NN1CO2MassTotal” if Calculation Methodology 1 (Equation NN-1) was used or reporting “NN2CO2MassTotal” if Calculation Methodology 2 (Equation NN-2) was used.

2. For natural gas that is received for redelivery to downstream gas transmission pipelines and other local distribution companies, use Equation NN-3 [98.403(b)(1)].
3. For natural gas delivered to each meter registering a supply equal to or greater than 460,000 Mscf per year, use Equation NN-4 [98.403(b)(2)].

For natural gas received by the LDC at the city gate(s) that is injected into on-system storage, and/or liquefied and stored, removed from storage and received from local production, use Equation NN-5 [98.403(b)(3)]. Note that the value for CO<sub>2</sub>, calculated in Equation NN-5, may either be positive or negative depending on whether more natural gas was withdrawn from storage/received from local production or placed into storage during the reporting year.

**Figure 25**  
**LDC Equation NN-1, NN-2, NN-3, NN-4 and NN-5 GHG Quantities Schema Diagram**



**Table 9**  
**LDC Equation NN-1, NN-2, NN-3, NN-4 and NN-5 GHG Quantities XML Data Elements**

Data Element Name	Description
NN1CO2MassTotal	A collection of data elements containing information on annual CO <sub>2</sub> quantities associated with the complete combustion or oxidation of natural gas received at the city gate(s) calculated using Equation NN-1. Report the calculated value in metric tons only. (Report only NN1CO2MassTotal or NN2CO2MassTotal, but not both.)
NN1CO2MassTotal.massUOM	Metric Tons
NN2CO2MassTotal	A collection of data elements containing information on annual CO <sub>2</sub> quantities associated with the complete combustion or oxidation of natural gas received at the city gate(s) calculated using Equation NN-2. Report the calculated value in metric tons only. (Report only NN1CO2MassTotal or NN2CO2MassTotal, but not both.)
NN2CO2MassTotal.massUOM	Metric Tons
NN3CO2MassTotal	A collection of data elements containing information on annual CO <sub>2</sub> quantities associated with the combustion or oxidation of natural gas delivered to downstream transmission pipelines or other LDCs, calculated using Equation NN-3. Report the calculated value in metric tons only.
NN3CO2MassTotal.massUOM	Metric Tons
NN4CO2MassTotal	A collection of data elements containing information on annual CO <sub>2</sub> quantities associated with the combustion or oxidation of natural gas received by end-users that receive a supply equal to or greater than 460,000 Mscf per year, calculated using Equation NN-4. Report the calculated value in metric tons only.
NN4CO2MassTotal.massUOM	Metric Tons
NN5CO2MassTotal	A collection of data elements containing information on annual CO <sub>2</sub> quantities associated with the combustion or oxidation of natural gas received by the LDC that bypassed the city gate(s) and the net natural gas that is stored/removed from storage (including gas that was liquefied and stored/removed from storage) by the LDC, calculated using Equation NN-5. Report the calculated value in metric tons only.
NN5CO2MassTotal.massUOM	Metric Tons

**Figure 26**  
**LDC Sample XML Excerpt for Equation NN-1, NN-3, NN-4 and NN-5**

```

<ghg:NN1CO2MassTotal massUOM="Metric Tons">
  <ghg:CalculatedValue>550555.2</ghg:CalculatedValue>
</ghg:NN1CO2MassTotal>
<ghg:NN3CO2MassTotal massUOM="Metric Tons">
  <ghg:CalculatedValue>550.0</ghg:CalculatedValue>
</ghg:NN3CO2MassTotal>
<ghg:NN4CO2MassTotal massUOM="Metric Tons">
  <ghg:CalculatedValue>165000.0</ghg:CalculatedValue>
</ghg:NN4CO2MassTotal>
<ghg:NN5CO2MassTotal massUOM="Metric Tons">
  <ghg:CalculatedValue>224.0</ghg:CalculatedValue>
</ghg:NN5CO2MassTotal>

```

Note: The code excerpt above is presented here to demonstrate the concept of reporting greenhouse gas quantity data.



**Figure 27**  
**LDC Sample XML Excerpt for Equation NN-2, NN-3, NN-4 and NN-5**

```

<ghg:NN2CO2MassTotal massUOM="Metric Tons">
  <ghg:CalculatedValue>567890.1</ghg:CalculatedValue>
</ghg:NN2CO2MassTotal>
<ghg:NN3CO2MassTotal massUOM="Metric Tons">
  <ghg:CalculatedValue>650.0</ghg:CalculatedValue>
</ghg:NN3CO2MassTotal>
<ghg:NN4CO2MassTotal massUOM="Metric Tons">
  <ghg:CalculatedValue>188000.0</ghg:CalculatedValue>
</ghg:NN4CO2MassTotal>
<ghg:NN5CO2MassTotal massUOM="Metric Tons">
  <ghg:CalculatedValue>277.0</ghg:CalculatedValue>
</ghg:NN5CO2MassTotal>
  
```

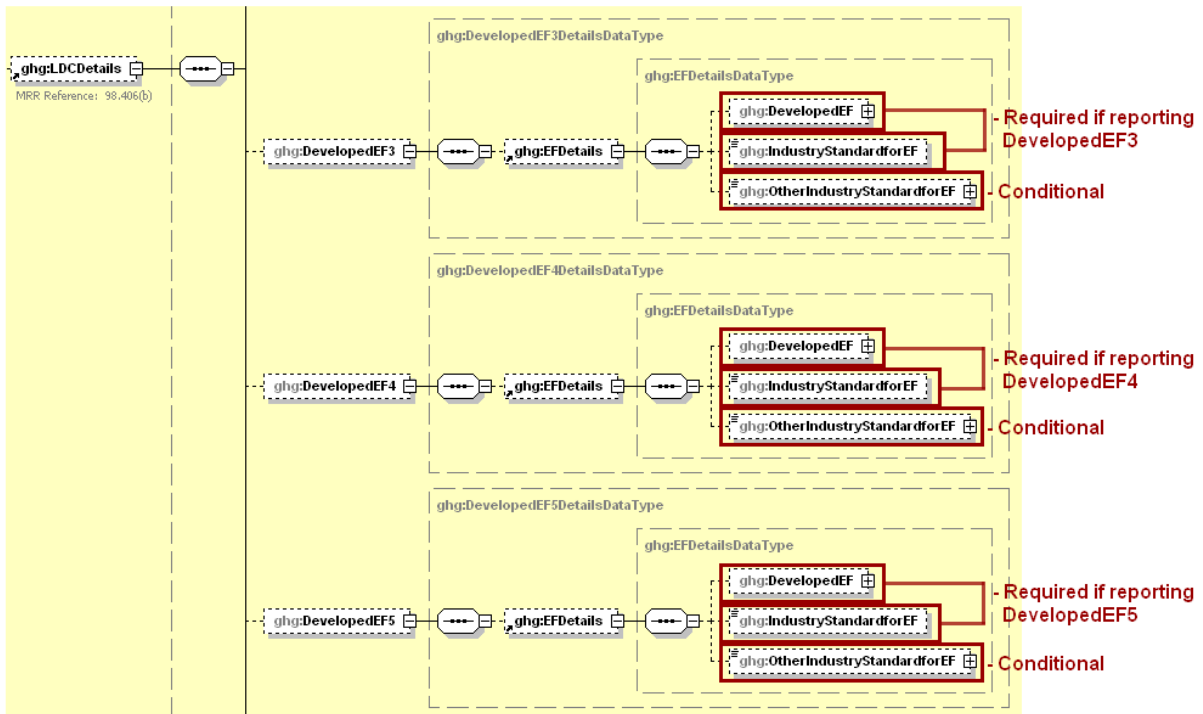
Note: The code excerpt above is presented here to demonstrate the concept of reporting greenhouse gas quantity data.

If you developed a supplier-specific emission factor (EF) for use in Equation NN-3, Equation NN-4, and/or Equation NN-5, Subpart NN requires you to report the following data:

- The developed EF for each applicable equation [98.406(b)(11)(iii)].
- The number of days in the reporting year for which substitute data procedures were used to develop each EF [98.406(c)(3)].
- The industry standard used to develop each EF [98.406(b)(11)(i)].

Reporting is not required for the applicable parent element if the default emission factor was used.

**Figure 28**  
**Equation NN-3, NN-4 and NN-5 Developed Emission Factors Schema Diagram**



**Table 10**  
**Equation NN-3, NN-4 and NN-5 Developed Emission Factors XML Data Elements**

Data Element Name	Description
DevelopedEF3	A collection of data elements containing information to report if the facility is using a supplier-specific emission factor in Equation NN-3 instead of the default emission factor.
EFDetails	A collection of data elements containing information to report if the facility is using a supplier-specific emission factor in Equation NN-3 instead of the default emission factor
DevelopedEF	A collection of data elements containing information on a supplier-specific CO <sub>2</sub> emission factor developed using methods outlined in §98.404. Report only if a supplier-specific CO <sub>2</sub> emission factor was used in Equation NN-3. Report the measured value (MT CO <sub>2</sub> /Mscf) and the number of days in the reporting year for which substitute data procedures were used to determine the value only.
DevelopedEF.efUOM	MT CO <sub>2</sub> /Mscf
IndustryStandardforEF	The industry standard used to develop the supplier-specific emission factor. See list of allowable values:  AGA standard GPA standard Industry standard practices Other
OtherIndustryStandardforEF	The industry standard used to develop the supplier-specific emission factor if "Other" was reported for IndustryStandardforEF.
DevelopedEF4	A collection of data elements containing information to report if the facility is using a supplier-specific emission factor in Equation NN-4 instead of the default emission factor.
EFDetails	A collection of data elements containing information to report if the facility is using a supplier-specific emission factor in Equation NN-4 instead of the default emission factor.
DevelopedEF	A collection of data elements containing information on a supplier-specific CO <sub>2</sub> emission factor developed using methods outlined in §98.404. Report only if a supplier-specific CO <sub>2</sub> emission factor was used in Equation NN-4. Report the measured value (MT CO <sub>2</sub> /Mscf) and the number of days in the reporting year for which substitute data procedures were used to determine the value only.
DevelopedEF.efUOM	MT CO <sub>2</sub> /Mscf
IndustryStandardforEF	The industry standard used to develop the supplier-specific emission factor. See list of allowable values:  AGA standard GPA standard Industry standard practices Other
OtherIndustryStandardforEF	The industry standard used to develop the supplier-specific emission factor if "Other" was reported for IndustryStandardforEF.

Data Element Name	Description
DevelopedEF5	A collection of data elements containing information to report if the facility is using a supplier-specific emissions factor in Equation NN-5 instead of the default emissions factor.
EFDDetails	A collection of data elements containing information to report if the facility is using a supplier-specific emissions factor in Equation NN-5 instead of the default emissions factor.
DevelopedEF	A collection of data elements containing information on a supplier-specific CO <sub>2</sub> emission factor developed using methods outlined in §98.404. Report only if a supplier-specific CO <sub>2</sub> emission factor was used in Equation NN-5. Report the measured value (MT CO <sub>2</sub> /Mscf) and the number of days in the reporting year for which substitute data procedures were used to determine the value only. .
DevelopedEF.efUOM	MT CO <sub>2</sub> /Mscf
IndustryStandardforEF	The industry standard used to develop the supplier-specific emission factor. See list of allowable values:  AGA standard GPA standard Industry standard practices Other
OtherIndustryStandardforEF	The industry standard used to develop the supplier-specific emission factor if "Other" was reported for IndustryStandardforEF.

**Figure 29**  
**Sample XML Excerpt for Equation NN-3, NN-4 and NN-5 Developed Emission Factors**

```

    <ghg:DevelopedEF3>
      <ghg:EFDDetails>
        <ghg:DevelopedEF efUOM="MT CO2/Mscf">
          <ghg:MeasureValue>0.051</ghg:MeasureValue>
          <ghg:NumberOfTimesSubstituted>5</ghg:NumberOfTimesSubstituted>
        </ghg:DevelopedEF>
        <ghg:IndustryStandardforEF>AGA standard</ghg:IndustryStandardforEF>
      </ghg:EFDDetails>
    </ghg:DevelopedEF3>
    <ghg:DevelopedEF4>
      <ghg:EFDDetails>
        <ghg:DevelopedEF efUOM="MT CO2/Mscf">
          <ghg:MeasureValue>0.052</ghg:MeasureValue>
          <ghg:NumberOfTimesSubstituted>5</ghg:NumberOfTimesSubstituted>
        </ghg:DevelopedEF>
        <ghg:IndustryStandardforEF>GPA standard</ghg:IndustryStandardforEF>
      </ghg:EFDDetails>
    </ghg:DevelopedEF4>
    <ghg:DevelopedEF5>
      <ghg:EFDDetails>
        <ghg:DevelopedEF efUOM="MT CO2/Mscf">
          <ghg:MeasureValue>0.056</ghg:MeasureValue>
          <ghg:NumberOfTimesSubstituted>5</ghg:NumberOfTimesSubstituted>
        </ghg:DevelopedEF>
        <ghg:IndustryStandardforEF>Industry standard
        practices</ghg:IndustryStandardforEF>
      </ghg:EFDDetails>
    </ghg:DevelopedEF5>
  
```

Note: The code excerpt above is presented here to demonstrate the concept of reporting greenhouse gas quantity data.

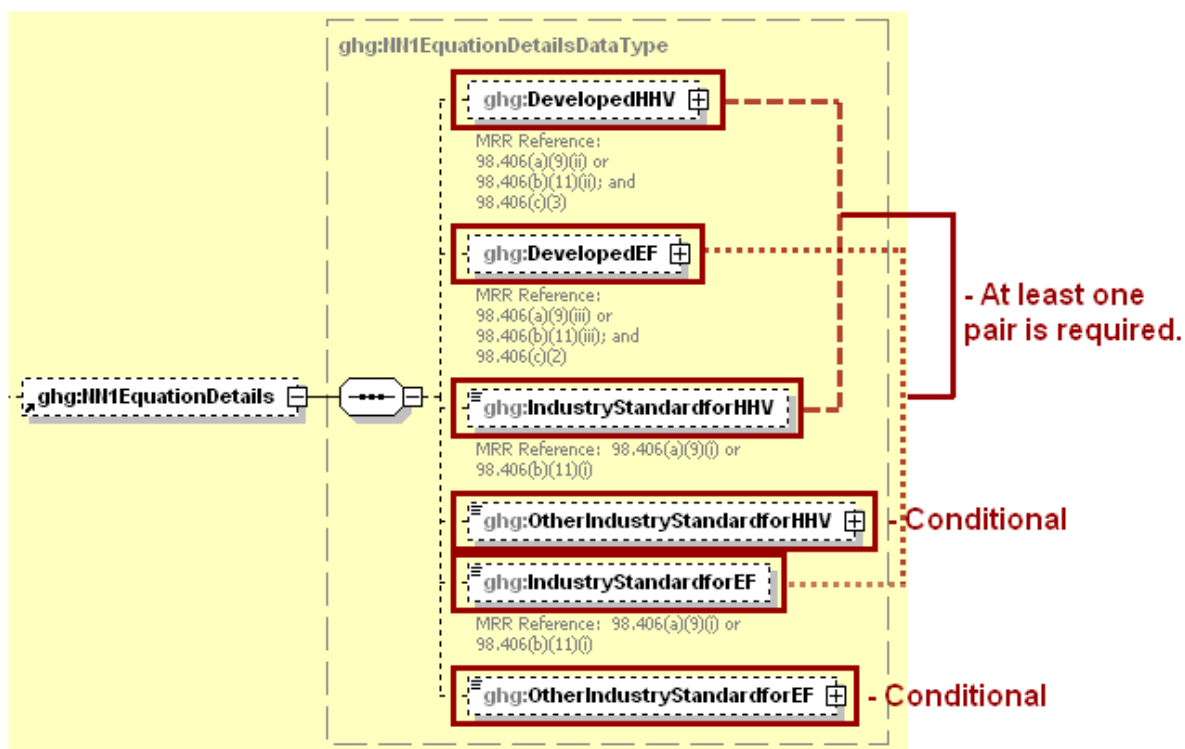
Each supplier that is a LDC that elects to use Calculation Methodology 1 may use a supplier-specific higher heating value (HHV) in units of MMBtu/Mscf in place of the default value provided in Table NN-1 and/or a supplier-specific CO<sub>2</sub> emission factor (EF) in units of kg CO<sub>2</sub>/MMBtu in place of the default value provided in Table NN-1 [98.403(a)(1)].

If you developed a supplier-specific EF and/or HHV for use in Equation NN-1, Subpart NN requires you to report the following data:

- The developed HHV [98.406(b)(11)(ii)] and/or EF [98.406(b)(11)(iii)].
- The number of days in the reporting year for which substitute data procedures were used to develop the HHV [98.406(c)(2)] and/or EF [98.406(c)(3)].
- The industry standard used to develop the HHV and/or EF [98.406(b)(11)(i)].

Reporting is not required for “NN1EquationDetails” if the default emission factor and default higher heating value were used.

**Figure 30**  
**LDC Equation NN-1 Details Schema Diagram**



**Table 11**  
**LDC Equation NN-1 Details XML Data Elements**

Data Element Name	Description
NN1EquationDetails	A collection of data elements to report if either a supplier-specific higher heating value or supplier-specific emission factor was used for Equation NN-1 instead of the default value or factor.
DevelopedHHV	A collection of data elements containing information on a supplier-specific higher heating value developed using methods outlined in §98.404. Report only if a supplier-specific higher heating value was used in Equation NN-1. Report the measured value (MMBtu/Mscf) and the number of days in the reporting year for which substitute data procedures were used to determine the value only.
DevelopedHHV.heatUOM	MMBtu/Mscf
DevelopedEF	A collection of data elements containing information on a supplier-specific CO <sub>2</sub> emission factor developed using methods outlined in §98.404. Report only if a supplier-specific CO <sub>2</sub> emission factor was used in Equation NN-1. Report the measured value (kg CO <sub>2</sub> /MMBtu) and the number of days in the reporting year for which substitute data procedures were used to determine the value only.
DevelopedEF.efUOM	kg CO <sub>2</sub> /MMBtu
IndustryStandardforHHV	<p>The industry standard used to develop the value for each supplier-specific higher heating value (HHV) reported for Calculation Methodology 1. See list of allowable values:</p> <ul style="list-style-type: none"> <li>AGA standard</li> <li>GPA standard</li> <li>Industry standard practices</li> <li>Other</li> </ul>
OtherIndustryStandardforHHV	The industry standard used to develop the value for each supplier-specific higher heating value (HHV) reported for Calculation Methodology 1. A value for this data element is required if the "IndustryStandardforHHV" data element contains "Other".
IndustryStandardforEF	<p>The industry standard used to develop the value for each supplier-specific CO<sub>2</sub> emission factor (EF) reported for Calculation Methodology 1. See list of allowable values:</p> <ul style="list-style-type: none"> <li>AGA standard</li> <li>GPA standard</li> <li>Industry standard practices</li> <li>Other</li> </ul>
OtherIndustryStandardforEF	The industry standard used to develop the value for each supplier-specific CO <sub>2</sub> emission factor (EF) reported for Calculation Methodology 1. A value for this data element is required if the "IndustryStandardforEF" data element contains "Other".

**Figure 31**  
**LDC Sample XML Excerpt for Equation NN-1 Details**

```

<ghg:NN1EquationDetails>
  <ghg:DevelopedHHV heatUOM="MMBtu/Mscf">
    <ghg:MeasureValue>1.038</ghg:MeasureValue>
    <ghg:NumberOfTimesSubstituted>5</ghg:NumberOfTimesSubstituted>
  </ghg:DevelopedHHV>
  <ghg:DevelopedEF efUOM="kg CO2/MMBtu">
    <ghg:MeasureValue>53.04</ghg:MeasureValue>
    <ghg:NumberOfTimesSubstituted>9</ghg:NumberOfTimesSubstituted>
  </ghg:DevelopedEF>
  <ghg:IndustryStandardforHHV>AGA standard</ghg:IndustryStandardforHHV>
  <ghg:IndustryStandardforEF>GPA standard</ghg:IndustryStandardforEF>
</ghg:NN1EquationDetails>

```

Note: The code excerpt above is presented here to demonstrate the concept of reporting greenhouse gas quantity data.

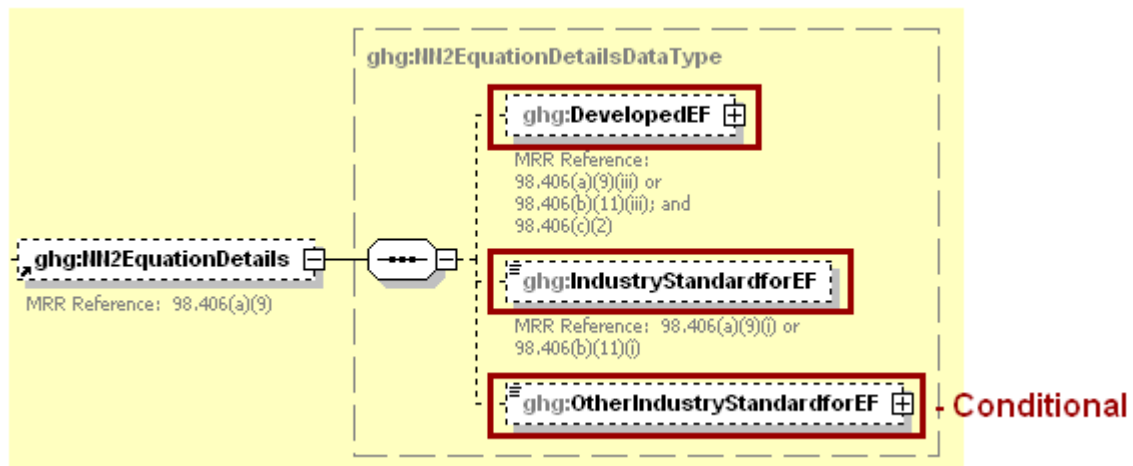
Each supplier that is a LDC that elects to use Calculation Methodology 2 may use a supplier-specific CO<sub>2</sub> emission factor (EF) in units of metric ton CO<sub>2</sub>/Mscf in place of the default value provided in Table NN-2 [98.403(a)(2)].

If you developed a supplier-specific EF for use in Equation NN-2, Subpart NN requires you to report the following data:

- The developed EF [98.406(b)(11)(iii)].
- The number of days in the reporting year for which substitute data procedures were used to develop the EF [98.406(c)(3)].
- The industry standard used to develop the EF [98.406(b)(11)(i)].

Reporting is not required for "NN2EquationDetails" if the default emission factor was used.

**Figure 32**  
**LDC Equation NN-2 Details Schema Diagram**



**Table 12  
LDC Equation NN-2 Details XML Data Elements**

Data Element Name	Description
NN2EquationDetails	A collection of data elements to report if a supplier-specific emission factor was used for Equation NN-2 instead of the default factor.
DevelopedEF	A collection of data elements containing information on a supplier-specific CO <sub>2</sub> emission factor developed using methods outlined in §98.404. Report only if a supplier-specific CO <sub>2</sub> emission factor was used in Equation NN-2. Report the measured value (MT CO <sub>2</sub> /Mscf) and the number of days in the reporting year for which substitute data procedures were used to determine the value only.
DevelopedEF.efUOM	MT CO <sub>2</sub> /Mscf
IndustryStandardforEF	<p>The industry standard used to develop the value for each supplier-specific CO<sub>2</sub> emission factor (EF) reported for Calculation Methodology 2. See list of allowable values:</p> <p>AGA standard GPA standard Industry standard practices Other</p>
OtherIndustryStandardforEF	The industry standard used to develop the value for each supplier-specific CO <sub>2</sub> emission factor (EF) reported for Calculation Methodology 2. A value for this data element is required if the "IndustryStandardforEF" data element contains "Other".

**Figure 33  
LDC Sample XML Excerpt for Equation NN-2 Details**

```

<ghg:NN2EquationDetails>
  <ghg:DevelopedEF efUOM="MT CO2/Mscf">
    <ghg:MeasureValue>53.04</ghg:MeasureValue>
    <ghg:NumberOfTimesSubstituted>9</ghg:NumberOfTimesSubstituted>
  </ghg:DevelopedEF>
  <ghg:IndustryStandardforEF>GPA standard</ghg:IndustryStandardforEF>
</ghg:NN2EquationDetails>
    
```

Note: The code excerpt above is presented here to demonstrate the concept of reporting greenhouse gas quantity data.

Each supplier that is a LDC must report the following for each meter registering a supply equal to or greater than 460,000 Mscf during the reporting year:

- The customer name [98.406(b)(12)].
- The customer address (street address, city, state, ZIP code) [98.406(b)(12)]. Note that you should report the customer's physical address, if the physical address is known. Should a facility you deliver gas to not have a physical address, the facility's mailing address may be used.
- The meter number [98.406(b)(12)].
- The EIA identification\* number of the LDC customer (conditional - only if known). [98.406(b)(12)(i)].
- The annual volume of natural gas delivered to the meter by the LDC (in thousand standard cubic feet) [98.406(b)(7)].

*\* Note that LDCs are only required to report this information if known. The EIA identification number referenced here is a number assigned to electric power plants who report on EIA Form EIA-923 (Power Plant Operations Report). Each facility who reports on this form is assigned a "Plant ID" number by EIA, which is a unique number for each power generating facility. This identification number is from 1 to 5 digits in length and can be found in the files under "Downloads" located at: [http://www.eia.gov/cneaf/electricity/page/eia906\\_920.html](http://www.eia.gov/cneaf/electricity/page/eia906_920.html). Reporting of this identification number is not required.*

Each supplier that is a LDC must report the total annual volume (in thousand standard cubic feet) of natural gas delivered to each of the following end-use categories:

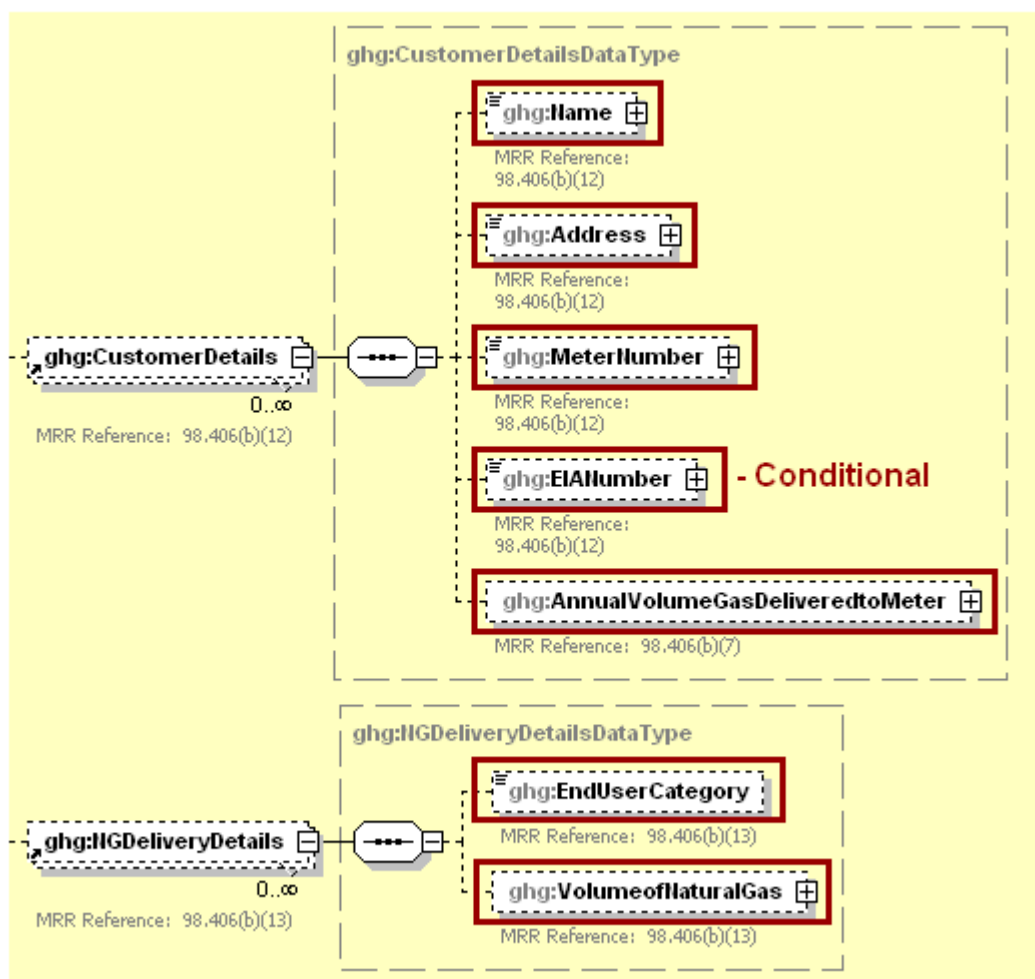
- Residential consumers [98.406(b)(13)(i)]
- Commercial consumers [98.406(b)(13)(ii)]
- Industrial consumers [98.406(b)(13)(iii)]
- Electricity generating facilities [98.406(b)(13)(iv)]

For definitions of these categories, refer to EIA Form 176 (Annual Report of Natural Gas and Supplemental Gas Supply & Disposition) and Instructions:

[http://www.eia.doe.gov/pub/oil\\_gas/natural\\_gas/survey\\_forms/eia176i.pdf](http://www.eia.doe.gov/pub/oil_gas/natural_gas/survey_forms/eia176i.pdf)



**Figure 34**  
**Customer Details and Delivery Details Schema Diagram**



**Table 13**  
**Customer Details and Delivery Details XML Data Elements**

Data Element Name	Description
CustomerDetails	A collection of data elements containing information for each customer who has a meter registering a supply equal to or greater than 460,000 Mscf during the reporting year.
Name	The customer name associated with the meter registering a supply equal to or greater than 460,000 Mscf during the reporting year.
Address	The specified customer's address (street address, city, state, ZIP code).
MeterNumber	The specified customer's meter number.
EIANumber	The EIA identification number of the specified customer (if known).
AnnualVolumeGasDeliveredtoMeter	A collection of data elements containing information on the annual volume of natural gas delivered by the LDC to the specified meter registering supply equal to or greater than 460,000 Mscf during the reporting year. Report the measured value in Mscf only.
AnnualVolumeGasDeliveredtoMeter.volUOM	Mscf
NGDeliveryDetails	A collection of data elements containing information on the volume of natural gas delivered to each end-use category.
EndUserCategory	Specify each end-use category that natural gas was delivered to in the reporting year. See list of allowable values:  Residential consumers Commercial consumers Industrial consumers Electricity generating facilities
VolumeofNaturalGas	A collection of data elements containing information on the annual volume of natural gas delivered by the LDC to the specified end-use category. Report the measured value in Mscf only.
VolumeofNaturalGas.volUOM	Mscf

**Figure 35**  
**Sample XML Excerpt for Customer Details and Delivery Details**

```

    <ghg:CustomerDetails>
      <ghg:Name>Customer A</ghg:Name>
      <ghg:Address>1 Elm Street, Richmond, VA 23294</ghg:Address>
      <ghg:MeterNumber>123456</ghg:MeterNumber>
      <ghg:EIANumber>147258</ghg:EIANumber>
      <ghg:AnnualVolumeGasDeliveredtoMeter volUOM="Mscf">
        <ghg:MeasureValue>500000</ghg:MeasureValue>
      </ghg:AnnualVolumeGasDeliveredtoMeter>
    </ghg:CustomerDetails>
    <ghg:CustomerDetails>
      <ghg:Name>Customer B</ghg:Name>
      <ghg:Address>1 Main Street, Richmond, VA 23294</ghg:Address>
      <ghg:MeterNumber>963852</ghg:MeterNumber>
      <ghg:EIANumber>987654</ghg:EIANumber>
      <ghg:AnnualVolumeGasDeliveredtoMeter volUOM="Mscf">
        <ghg:MeasureValue>500000</ghg:MeasureValue>
      </ghg:AnnualVolumeGasDeliveredtoMeter>
    </ghg:CustomerDetails>
    <ghg:NGDeliveryDetails>
      <ghg:EndUserCategory>Residential consumers</ghg:EndUserCategory>
      <ghg:VolumeofNaturalGas volUOM="Mscf">
        <ghg:MeasureValue>100000</ghg:MeasureValue>
      </ghg:VolumeofNaturalGas>
    </ghg:NGDeliveryDetails>
    <ghg:NGDeliveryDetails>
      <ghg:EndUserCategory>Commercial consumers</ghg:EndUserCategory>
      <ghg:VolumeofNaturalGas volUOM="Mscf">
        <ghg:MeasureValue>200000</ghg:MeasureValue>
      </ghg:VolumeofNaturalGas>
    </ghg:NGDeliveryDetails>
    <ghg:NGDeliveryDetails>
      <ghg:EndUserCategory>Industrial consumers</ghg:EndUserCategory>
      <ghg:VolumeofNaturalGas volUOM="Mscf">
        <ghg:MeasureValue>800000</ghg:MeasureValue>
      </ghg:VolumeofNaturalGas>
    </ghg:NGDeliveryDetails>
    <ghg:NGDeliveryDetails>
      <ghg:EndUserCategory>Electricity generating facilities</ghg:EndUserCategory>
      <ghg:VolumeofNaturalGas volUOM="Mscf">
        <ghg:MeasureValue>900000</ghg:MeasureValue>
      </ghg:VolumeofNaturalGas>
    </ghg:NGDeliveryDetails>
  </ghg:LDCDetails>
</ghg:SubPartNN>

```

Note: The code excerpt above is presented here to demonstrate the concept of reporting greenhouse gas quantity data.

### 4.0 Supplier-Level Roll-up GHG Quantity Data

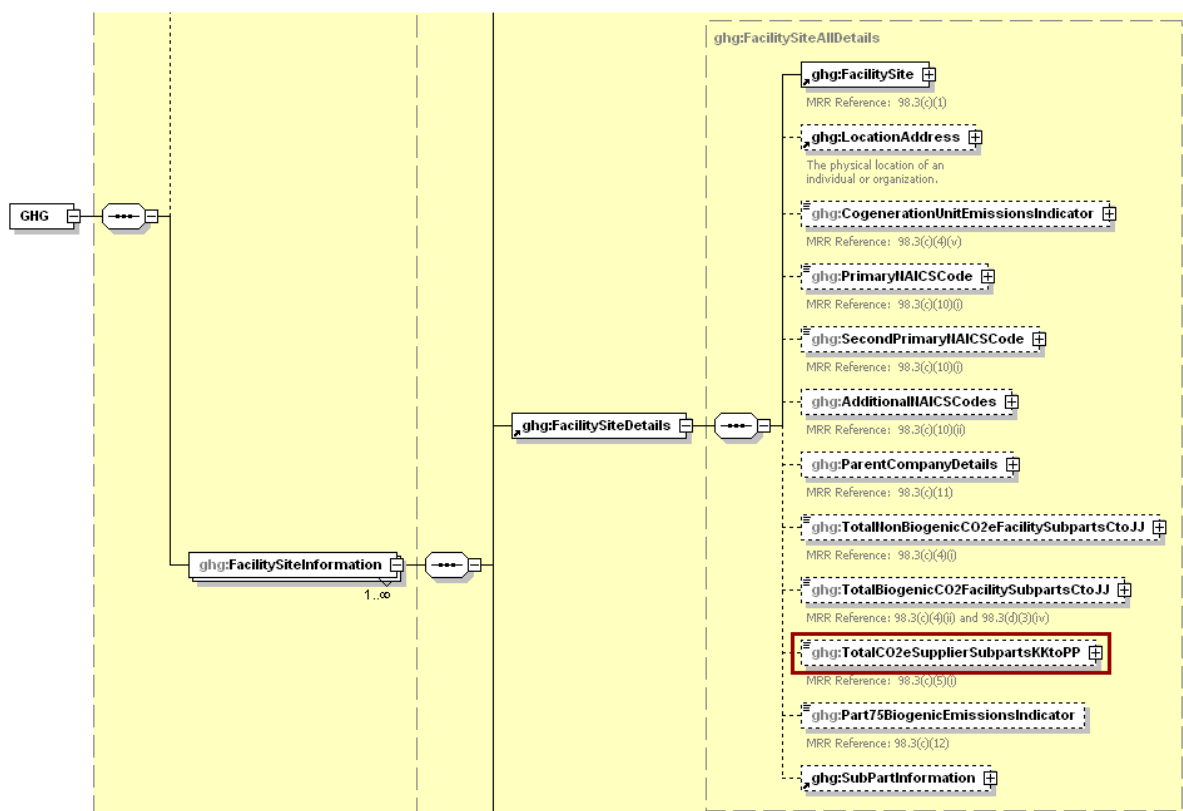
Each facility must report the following facility-level emission totals:

- Total CO<sub>2</sub> equivalent (CO<sub>2</sub>e) emissions (excluding biogenic CO<sub>2</sub>) aggregated across all direct emitter source categories (subparts C-HH) associated with the facility.
- Total biogenic CO<sub>2</sub> emissions aggregated across all direct emitter source categories (subparts C-HH) associated with the facility.

Each supplier must report the following supplier totals:

- Total CO<sub>2</sub>e associated with products supplied aggregated across subparts NN, OO and PP (as applicable). Do not include subpart LL and MM totals in this data element as these values are not being collected in e-GGRT.

**Figure 36  
Supplier-Level Roll-up GHG Quantity Data Schema Diagram**



For Subpart NN, add the total quantity of carbon dioxide (CO<sub>2</sub>) to the total CO<sub>2</sub> equivalent (CO<sub>2</sub>e) quantity aggregated across all supplier categories subparts associated with the supplier using the following guidelines:

1. If the supplier is a fractionator of natural gas liquids (NGL), use the potential CO<sub>2</sub> quantity associated with all products delivered to customers (sum of Equation NN-8 across each fractionated NGL product), rounded to one decimal place in metric tons.

This value is calculated by summing the rounded results of Equations NN-1 and NN-2 across each fractionated NGL product (the potential CO<sub>2</sub> quantity associated with product supplied in metric tons) and subtracting the rounded result of Equation NN-7 across each fractionated NGL product (the potential CO<sub>2</sub> quantity associated with product received from other fractionators in metric tons).

2. If the supplier is a natural gas local distribution company (LDC), use the potential CO<sub>2</sub> quantity associated with the combustion or oxidation of natural gas supplied to end-users that receive less than 460,000 mscf per year (Equation NN-6), rounded to one decimal place in metric tons.

This value is calculated by subtracting the rounded results of Equation NN-3 (potential CO<sub>2</sub> quantity associated with natural gas delivered to downstream transmission pipelines or other LDCs in metric tons), Equation NN-4 (potential CO<sub>2</sub> quantity associated with natural gas received by end users that receive a supply equal to or greater than 460,000 mscf per year in metric tons) and Equation NN-5 (potential CO<sub>2</sub> quantities associated with product received that bypassed the city gate(s) such as natural gas received from local production and the net natural gas that is liquefied and/or stored/removed from storage by the LDC within the reported year in metric tons) from the rounded result of Equation NN-1 or NN-2 (potential CO<sub>2</sub> quantity associated with natural gas received at the city gate(s) in metric tons).

**Table 14**  
**Supplier Level Roll-up GHG Quantity Data XML Data Elements**

Data Element Name	Description
TotalCO2eSupplierSubpartsKKtoPP	Add the total CO <sub>2</sub> e value for Subpart NN in metric tons to the total CO <sub>2</sub> e quantity data aggregated across all supplier categories subparts associated with the supplier according to the guidelines above.
TotalCO2eSupplierSubpartsKKtoPP.massUOM	Metric Tons

**Figure 37**  
**Sample XML Excerpt for Supplier Level Roll-up GHG Quantity Data**

```

<ghg:TotalNonBiogenicCO2eFacilitySubpartsCtoJJ massUOM="Metric
Tons">0</ghg:TotalNonBiogenicCO2eFacilitySubpartsCtoJJ>
<ghg:TotalBiogenicCO2FacilitySubpartsCtoJJ massUOM="Metric Tons">0</ghg:TotalBiogenicCO2FacilitySubpartsCtoJJ>
<ghg:TotalCO2eSupplierSubpartsKKtoPP massUOM="Metric Tons">384781.2</ghg:TotalCO2eSupplierSubpartsKKtoPP>
```

Note: The code excerpt above is presented here to demonstrate the concept of reporting greenhouse gas quantity data.

## Appendix A

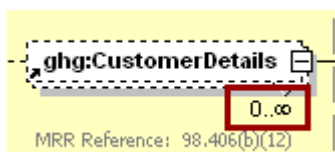
### Legend for Tables

Blue = parent element

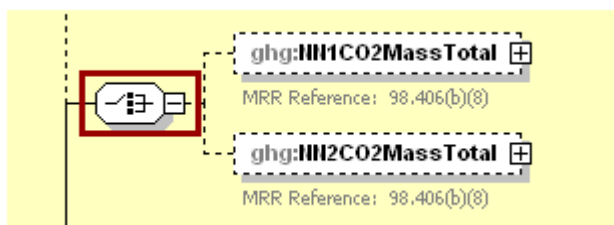
### Legend for XML Schema Diagrams

Red box = relevant for reporting

The following XML symbol “0..∞” means that multiple occurrences for the parent element can be reported:



The following XML symbol for “or” means that only one of the data elements following the sign can be reported for the current instance of the parent element:



## Appendix B - Sample XML Document for Subpart NN – NGL Fractionator

(Note: Data values do not reflect an actual facility's emissions.)

```

<ghg:GHG xmlns="http://www.ccdsupport.com/schema/ghg">
  <ghg:FacilitySiteInformation>
    <ghg:CertificationStatement>The designated representative or alternate designated representative must sign (i.e., agree to) this certification statement. If you are an agent and you click on "SUBMIT", you are not agreeing to the certification statement, but are submitting the certification statement on behalf of the designated representative or alternate designated representative who is agreeing to the certification statement. An agent is only authorized to make the electronic submission on behalf of the designated representative, not to sign (i.e., agree to) the certification statement.</ghg:CertificationStatement>
    <ghg:ReportingYear>2010</ghg:ReportingYear>
    <ghg:FacilitySiteDetails>
      <ghg:FacilitySite>
        <ghg:FacilitySiteIdentifier>524117</ghg:FacilitySiteIdentifier>
        <ghg:FacilitySiteName>Test Facility AA-1</ghg:FacilitySiteName>
      </ghg:FacilitySite>
      <ghg:LocationAddress>
        <ghg:LocationAddressText>1 Main St.</ghg:LocationAddressText>
        <ghg:LocalityName>Charlottesville</ghg:LocalityName>
        <ghg:StateIdentity>
          <ghg:StateCode>VA</ghg:StateCode>
          </ghg:StateIdentity>
        <ghg:AddressPostalCode>22911</ghg:AddressPostalCode>
      </ghg:LocationAddress>
      <ghg:CogenerationUnitEmissionsIndicator>N</ghg:CogenerationUnitEmissionsIndicator>
      <ghg:PrimaryNAICSCode>211112</ghg:PrimaryNAICSCode>
      <ghg>TotalNonBiogenicCO2eFacilitySubpartsCtoJJ massUOM="Metric
Tons">0</ghg>TotalNonBiogenicCO2eFacilitySubpartsCtoJJ>
      <ghg>TotalBiogenicCO2FacilitySubpartsCtoJJ massUOM="Metric
Tons">0</ghg>TotalBiogenicCO2FacilitySubpartsCtoJJ>
      <ghg>TotalCO2eSupplierSubpartsKKtoPP massUOM="Metric Tons">341.5</ghg>TotalCO2eSupplierSubpartsKKtoPP>
      <ghg:SubPartInformation>
        <ghg:SubPartNN>
          <ghg:GHGasInfoDetails>
            <ghg:GHGasName>Carbon Dioxide</ghg:GHGasName>
            <ghg:GHGasQuantity massUOM="Metric Tons">
              <ghg:CalculatedValue>341.5</ghg:CalculatedValue>
            </ghg:GHGasQuantity>
          </ghg:GHGasInfoDetails>
          <ghg:NGLDetails>
            <ghg:NGLFuelDetails>
              <ghg:NGLSupplied>
                <ghg:ProductCategoryName>Propane</ghg:ProductCategoryName>
                <ghg:Quantity volUOM="bbl">
                  <ghg:MeasureValue>7777</ghg:MeasureValue>
                  <ghg:NumberOfTimesSubstituted>5</ghg:NumberOfTimesSubstituted>
                </ghg:Quantity>
                <ghg:MeasureMethodName>AGA
standard</ghg:MeasureMethodName>
              </ghg:NGLSupplied>
              <ghg:NGLReceived>
                <ghg:ProductCategoryName>Propane</ghg:ProductCategoryName>
                <ghg:Quantity volUOM="bbl">
                  <ghg:MeasureValue>7777</ghg:MeasureValue>
                  <ghg:NumberOfTimesSubstituted>7</ghg:NumberOfTimesSubstituted>
                </ghg:Quantity>
                <ghg:DevelopedEF7>
                  <ghg:EFDetails>
                    <ghg:DevelopedEF efUOM="MT CO2/bbl">
                      <ghg:MeasureValue>0.237</ghg:MeasureValue>
                      <ghg:NumberOfTimesSubstituted>9</ghg:NumberOfTimesSubstituted>
                    </ghg:DevelopedEF>
                    <ghg:IndustryStandardforEF>GPA
standard</ghg:IndustryStandardforEF>
                  </ghg:EFDetails>
                </ghg:DevelopedEF7>
              </ghg:NGLReceived>
            </ghg:NGLFuelDetails>
            <ghg>NN2CO2MassTotal massUOM="Metric Tons">
              <ghg:CalculatedValue>1905.4</ghg:CalculatedValue>
            </ghg>NN2CO2MassTotal>
            <ghg>NN7CO2MassTotal massUOM="Metric Tons">
              <ghg:CalculatedValue>1843.1</ghg:CalculatedValue>
            </ghg>NN7CO2MassTotal>
          </ghg:SubPartNN>
        </ghg:SubPartInformation>
      </ghg:SubPartInformation>
    </ghg:FacilitySiteDetails>
  </ghg:FacilitySiteInformation>
</ghg:GHG>

```

```

    </ghg:NN2EquationDetails>
      <ghg:DevelopedEF efUOM="MT CO2/Mbbl">
        <ghg:MeasureValue>0.245</ghg:MeasureValue>
        <ghg:NumberOfTimesSubstituted>6</ghg:NumberOfTimesSubstituted>
      </ghg:DevelopedEF>
      <ghg:IndustryStandardforEF>Industry standard practices</ghg:IndustryStandardforEF>
    </ghg:NN2EquationDetails>
  </ghg:NGLFuelDetails>
  <ghg:NGLFuelDetails>
    <ghg:NGLSupplied>
      <ghg:ProductCategoryName>Ethane</ghg:ProductCategoryName>
      <ghg:Quantity volUOM="bbl">
        <ghg:MeasureValue>4444</ghg:MeasureValue>
        <ghg:NumberOfTimesSubstituted>2</ghg:NumberOfTimesSubstituted>
      </ghg:Quantity>
      <ghg:MeasureMethodName>ASTM standard</ghg:MeasureMethodName>
    </ghg:NGLSupplied>
    <ghg:NGLReceived>
      <ghg:ProductCategoryName>Ethane</ghg:ProductCategoryName>
      <ghg:Quantity volUOM="bbl">
        <ghg:MeasureValue>3333</ghg:MeasureValue>
        <ghg:NumberOfTimesSubstituted>3</ghg:NumberOfTimesSubstituted>
      </ghg:Quantity>
      <ghg:DevelopedEF7>
        <ghg:EFDetails>
          <ghg:DevelopedEF efUOM="MT CO2/bbl">
            <ghg:MeasureValue>0.253</ghg:MeasureValue>
          </ghg:DevelopedEF>
        </ghg:EFDetails>
      </ghg:DevelopedEF7>
    </ghg:NGLReceived>
    <ghg:NN1CO2MassTotal massUOM="Metric Tons">
      <ghg:CalculatedValue>112.4</ghg:CalculatedValue>
    </ghg:NN1CO2MassTotal>
    <ghg:NN7CO2MassTotal massUOM="Metric Tons">
      <ghg:CalculatedValue>843.2</ghg:CalculatedValue>
    </ghg:NN7CO2MassTotal>
    <ghg:NN1EquationDetails>
      <ghg:DevelopedHHV heatUOM="MMBtu/bbl">
        <ghg:MeasureValue>4.032</ghg:MeasureValue>
      </ghg:DevelopedHHV>
      <ghg:DevelopedEF efUOM="kg CO2/MMBtu">
        <ghg:MeasureValue>62.64</ghg:MeasureValue>
      </ghg:DevelopedEF>
    </ghg:NN1EquationDetails>
  </ghg:NGLFuelDetails>
  <ghg:AnnualVolumeGasReceived volUOM="Mscf">
    <ghg:MeasureValue>1000</ghg:MeasureValue>
  </ghg:AnnualVolumeGasReceived>
  <ghg:AnnualQuantityBulkNGLReceived volUOM="bbl">
    <ghg:MeasureValue>2000</ghg:MeasureValue>
  </ghg:AnnualQuantityBulkNGLReceived>
  <ghg:AnnualQuantityPropaneOdorized volUOM="bbl">
    <ghg:MeasureValue>3000</ghg:MeasureValue>
  </ghg:AnnualQuantityPropaneOdorized>
</ghg:NGLDetails>
</ghg:SubPartNN>
</ghg:SubPartInformation>
</ghg:FacilitySiteDetails>
<ghg:CalculationMethodologyChangesDescription>None</ghg:CalculationMethodologyChangesDescription>
<ghg:BestAvailableMonitoringMethodsUsed>N/A</ghg:BestAvailableMonitoringMethodsUsed>
<ghg:StartDate>2010-01-01</ghg:StartDate>
<ghg:EndDate>2010-12-31</ghg:EndDate>
<ghg:DateTimeReportGenerated>2011-08-08T13:24:34</ghg:DateTimeReportGenerated>
</ghg:FacilitySiteInformation>
</ghg:GHG>

```



## Appendix C - Sample XML Document for Subpart NN - LDC

(Note: Data values do not reflect an actual facility's emissions.)

```

<ghg:GHG xmlns="http://www.ccdsupport.com/schema/ghg">
  <ghg:FacilitySiteInformation>
    <ghg:CertificationStatement>The designated representative or alternate designated representative must sign (i.e., agree to) this certification statement. If you are an agent and you click on "SUBMIT", you are not agreeing to the certification statement, but are submitting the certification statement on behalf of the designated representative or alternate designated representative who is agreeing to the certification statement. An agent is only authorized to make the electronic submission on behalf of the designated representative, not to sign (i.e., agree to) the certification statement.</ghg:CertificationStatement>
    <ghg:ReportingYear>2010</ghg:ReportingYear>
    <ghg:FacilitySiteDetails>
      <ghg:FacilitySite>
        <ghg:FacilitySiteIdentifier>524117</ghg:FacilitySiteIdentifier>
        <ghg:FacilitySiteName>Test Facility AA-1</ghg:FacilitySiteName>
      </ghg:FacilitySite>
      <ghg:LocationAddress>
        <ghg:LocationAddressText>1 Main St.</ghg:LocationAddressText>
        <ghg:LocalityName>Charlottesville</ghg:LocalityName>
        <ghg:StateIdentity>
          <ghg:StateCode>VA</ghg:StateCode>
        </ghg:StateIdentity>
        <ghg:AddressPostalCode>22911</ghg:AddressPostalCode>
      </ghg:LocationAddress>
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