

EPA Greenhouse Gas Reporting Program Update

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GHGRP Overview

Goal of GHGRP : To collect accurate GHG data to inform future policy decisions

- Rule covers 41 source categories for reporting, accounting for 85-90% of U.S. GHG emissions.
 - Monitoring began in 2010 for 29 source categories.
 - 1st reporting deadline was September 30, 2011.
 - An additional 12 source categories began collecting data in 2011 to report in 2012.
- Reporting only, no control or use requirements.



GHGRP vs. U.S. GHG Inventory



- **The U.S. GHG Inventory is a comprehensive top-down assessment of national GHG emissions and removals which presents emissions across multiple years starting in 1990.**
 - U.S. GHG emissions calculated using internationally-accepted methods and nationally appropriate statistics
 - Emissions estimates not provided at the geographic or facility level
 - Includes small industrial emitters, residential and commercial sectors
 - Includes agriculture and land-use/forestry sectors
- **When compared in aggregate, some of the summary emissions totals for specific industries appear different in the Inventory and GHGRP.**
 - Different Source Category Definitions
 - Reporting Threshold
 - Lack of Disaggregated Data to Represent Certain Industries
 - Use of Continuous Emissions Monitoring Technologies
 - Differences in use of Default International Factors from Facility-Specific Methods

Uses of GHG Data



- Provide comprehensive and comparable GHG data to external stakeholders for a variety of purposes:
 - Enable industries to compare their emissions to similar facilities and identify emissions reductions strategies.
 - Provide states and localities with GHG emissions data from facilities within their borders and to compare with emissions in other areas.
 - Educate the public about large sources of GHG's
 - Make GHG data available to the financial community leading to more informed investment decisions.
 - Provide detail on GHG emissions by gas, sector, and location that can be used by the research community.
 - Inform policy decisions at the local, state or other level.
- Establish a baseline for facilities to track emissions over time.
- Help identify industry leaders.

GHGs Reported



- CO_2
- CH_4 (methane)
- N_2O (nitrous oxide)
- Fluorinated GHGs
 - HFCs (hydrofluorocarbons)
 - PFCs (perfluorocarbons)
 - SF_6 (sulfur hexafluoride)
 - Other fluorinated gases – NF_3 , HFEs, HFOs



Source Categories for 2010

- **Adipic Acid Production (Subpart E)**
- **Aluminum Production (Subpart F)**
- **Ammonia Manufacturing (Subpart G)**
- **Cement Production (Subpart H)**
- **Electricity Generation (Subpart D)**
- **Ferrous Alloy Production (Subpart K)**
- **General Stationary Fuel Combustion Sources (Subpart C)**
- **Glass Production (Subpart N)**
- **HCFC-22 Production HFC-23 Destruction (Subpart O)**
- **Hydrogen Production (Subpart P)**
- **Iron and Steel Production (Subpart Q)**
- **Lead Production (Subpart R)**
- **Lime Manufacturing (Subpart S)**
- **Manure Management Systems (Subpart JJ)** [*EPA will not be implementing subpart JJ due to a Congressional restriction prohibiting the expenditure of funds for this purpose.*]
- **Municipal Solid Waste Landfills (Subpart HH)**
- **Miscellaneous Uses of Carbonates (Subpart U)**
- **Nitric Acid Production (Subpart V)**
- **Petrochemical Production (Subpart X)**
- **Petroleum Refineries (Subpart Y)**
- **Phosphoric Acid Production (Subpart Z)**
- **Pulp and Paper Manufacturing (Subpart AA)**
- **Silicon Carbide Production (Subpart BB)**
- **Soda Ash Production (Subpart CC)**
- **Suppliers of Coal-based Liquid Fuels (Subpart LL)**
- **Suppliers of Petroleum Products (Subpart MM)**
- **Suppliers of Natural Gas and Natural Gas Liquids (Subpart NN)**
- **Suppliers of Industrial Greenhouse Gases (Subpart OO)**
- **Suppliers of Carbon Dioxide (Subpart PP)**
- **Titanium Dioxide Production (Subpart EE)**
- **Zinc Production (Subpart GG)**

2010 GHG Data Summary

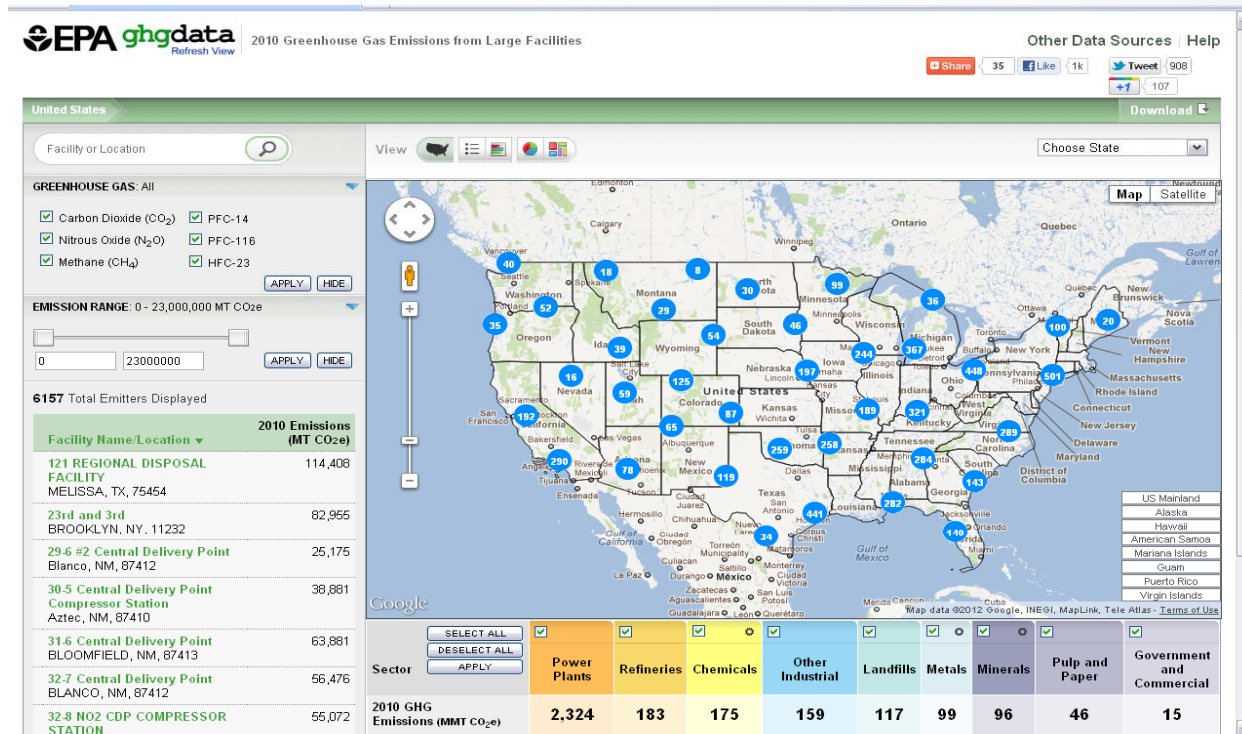


- Reports from over 6,700 entities
- Power plants are largest stationary source of direct emissions- 2,324 MMTCO₂e
- Refineries are second at 183 MMTCO₂e
- 100 facilities reported over 7 MMTCO₂e including 96 power plants, 2 iron and steel mills, 2 refineries
- 2010 data accounts for roughly 80 percent of total U.S. emissions.
 - This percentage reflects both upstream suppliers and direct emitters.
 - Among the data not covered are GHG emissions from smaller sources, and from agricultural and land-use activities.



Data Publication

- <http://GHGdata.epa.gov/ghgp/main.do>
- Data publication tool allows stakeholders and the public to access the key data elements quickly and easily and to sort data by location, sector, and by gas.
- 2010 data published in January 2012.





New Source Categories for 2011

The twelve new source categories for reporting year 2011 and beyond include:

- Electronics Manufacturing (Subpart I)
- Fluorinated Gas Production (Subpart L)
- Magnesium Production (Subpart T)
- Petroleum and Natural Gas Systems (Subpart W)
- **Use of Electric Transmission and Distribution Equipment (Subpart DD)**
- Underground Coal Mines (Subpart FF)
- Industrial Wastewater Treatment (Subpart II)
- Imports and Exports of Equipment Pre-charged with Fluorinated GHGs or Containing Fluorinated GHGs in Closed-cell Foams (Subpart QQ)
- Carbon dioxide injection and geologic sequestration (Subpart RR)
- **Manufacture of electric transmission and distribution (Subpart SS)**
- Industrial waste landfills (Subpart TT)
- Injection of carbon dioxide (Subpart UU)

Looking Ahead



Milestone	Date
Reporting Year 2010 Publication	January 2012
Reporting Deadline for Reporting Year 2011 (Track 1)	April 2012
e-GGRT Registration Overview Webinar for Track 2	May 10, 2012
e-GGRT Subpart DD & SS testing	June 4-14, 2012
E-GGRT Registration Deadline	July 30, 2012
Reporting Deadline for Track 2 data	September 28, 2012
Preliminary Data Verification	Oct.-Dec. 2012
Reporting Year 2011 Publication	January 2013

Additional Information



GHGRP: <http://www.epa.gov/climatechange/emissions/ghgrulemaking.html>

GHG data publication: <http://ghgdata.epa.gov/ghgp/main.do>

How Will Emissions Be Verified?



- **Self certification**
 - Designated representative certifies and submits report
 - GHG Reporting Program allows one designated representative for each facility and supplier
- **EPA verification**
 - Reports submitted through an electronic system
 - Built-in completeness checks for reporters
 - Electronic QA/QC and consistency checks
 - On-site audits

Relationship to State and Regional Programs



- Rule does not preempt states from regulating or requiring reporting of GHGs.
 - EPA rule is a limited action developed in response to a specific request from Congress and is narrower in focus than many existing State programs that are coupled with reduction programs
- No state delegation of program implementation
- Reporting entities must report directly to EPA
 - To reduce reporting burden, EPA is working on a data exchange standard
 - EPA is committed to working with state and regional programs to provide timely access to verified emissions data, establish mechanisms to share data efficiently, and harmonize data systems to the extent possible

Relationship to EPA Voluntary Partnership for Electric Power Systems



- Purpose of Partnership is to identify and support efforts to reduce emissions
- Voluntary Partnership will continue
- Facilities required to report under GGRP report only once through e-GGRET system
- Facilities not covered under the GGRP expected to continue reporting per voluntary agreement

Additional Information



- www.epa.gov/climatechange/emissions/ghgrulemaking.html
 - Preamble and rule
 - Technical background documents on source categories
 - Comment response documents
 - Link to rulemaking docket
 - Technical assistance materials
- Email: GHGMRR@epa.gov



Q & As for Subpart DD

Selected Subpart DD FAQs



- **Subpart DD facility definition**
- **Aggregation of nameplate capacity for threshold determinations**
- **Subpart D vs. subpart DD facility boundaries**

Subpart DD Facility Definition



- Facility definition in §98.308 must be applied to each electric power system to determine what constitutes a facility.
- Key characteristics of equipment that constitute a subpart DD facility are:
 - “Linked through electric power transmission and distribution lines”
 - “Functions as an integrated unit”
 - Associated in its entirety with a single entity (either through ownership or operational control)

Aggregation of Nameplate Capacity for Threshold Determinations.



- Per §98.301(a), when determining threshold applicability, each facility must sum its own nameplate capacity with all nameplate capacity not within its facility but under common ownership or control.
- For example, a parent company owns electric utility in Midwest and electric utility on East Coast that are both distinct facilities, the nameplate capacity of both utilities must be summed.
 - Still report separately if above threshold in aggregate.

Subpart D vs. Subpart DD Facility Boundaries



- Different facility definitions for subpart D (electric generating units) and subpart DD (T&D)
- No overlap between subpart D and subpart DD facilities.
 - Subpart D facility never reports SF₆ emissions from electrical transmission and distribution equipment
 - If T&D equipment is co-located at a generating site, same company owns/operates both the generating equipment and T&D equipment, the T&D equipment is still distinct facility that reports separately from the EGU facility.

Other Questions?



- Feel free to raise any questions you have for subpart DD.
- Questions can also be submitted to GHGMRR@epa.gov.



Electrical Transmission and Distribution Equipment Use

Subpart DD

What are the Reporting Requirements?



Subparts DD: Source-Specific Requirements

- Definition of source category
- Definition of facility
- GHGs to report
- Calculation methods
- Monitoring and QA/QC
- Missing data procedures
- Reporting and recordkeeping elements unique to this subpart

Subpart DD: Overview



- **Definition of Source Category**

- All electric transmission and distribution equipment and servicing inventory insulated with or containing SF₆ or PFCs used within an electric power system.
- Includes
 - Gas-insulated substations
 - Circuit breakers and other switchgear, including both closed-pressure and sealed-pressure
 - Gas containers, such as pressurized cylinders
 - Gas carts
 - Electric power transformers

Subpart DD: Overview



- **GHGs That Must Be Reported**
 - SF₆ and PFCs emissions from:
 - Fugitive equipment leaks, installation, servicing, equipment decommissioning and disposal
 - Storage cylinders and other containers
 - Emissions from equipment installation and recently purchased equipment must be reported under subpart DD once equipment user has the title to equipment
- **Reporting Threshold**
 - Total nameplate capacity of SF₆ and PFC insulated equipment located within the facility, when added to total nameplate capacity not located within the facility but under common ownership or control, exceeds 17,820 pounds **(excluding sealed-pressure)**
 - Capacity-based equivalent to emissions-based threshold of 25,000 MTCO₂e

Subpart DD: Facility Definition



How is “Facility” defined?

- Due to the unique physical characteristics of electric power systems, subpart DD provides the following facility definition exclusively for the subpart:
 - **Facility (electric power system facility):** *all electric transmission and distribution equipment insulated with or containing SF₆ or PFCs that is linked through electric power transmission or distribution lines and functions as an integrated unit, that is owned, serviced, or maintained by a single electric power transmission or distribution entity (or multiple entities with a common owner), and that is located between: (1) the point(s) at which electric energy is obtained from an electricity generating unit or a different electric power transmission or distribution entity that does not have a common owner, and (2) the point(s) at which any customer or another electric power transmission or distribution entity that does not have a common owner receives the electric energy. The facility also includes servicing inventory for such equipment that contains SF₆ or PFCs.*
- Not Corporate-based, although may align with corporate boundaries
- Each distinct facility submits emissions report to EPA



Subpart DD: Monitoring Method

- Emissions are measured at the electric power system facility level using a mass-balance approach as follows:

$$\textit{Emissions} = \textit{Decrease in SF}_6 \textit{ Inventory} + \textit{Acquisitions of SF}_6 - \textit{Disbursements of SF}_6 - \textit{Net Increase in Total Nameplate Capacity of Equipment Operated}$$

- Inventory refers to gas inside containers or non-energized equipment
- Gas or nameplate associated with hermetically sealed-pressure equipment *should be included* in all of the inputs of the mass-balance formula.
- PFC emissions must be calculated in the same way, substituting the PFC for SF₆ in the equation above.

Subpart DD: Monitoring Method (cont.)



How much SF₆ has arrived inside equipment from electrical equipment manufacturer?

- The recordkeeping requirements in subpart SS require that each electrical equipment manufacturer must retain
 - *“certifications of the quantity of gas, in pounds, charged into equipment at the electrical equipment manufacturer or refurbishment facility as well as the actual quantity of gas, in pounds, charged into equipment at installation.”*
- Subpart SS Preamble: OEMs *“should provide copies of the certifications to electric power system facilities upon request.”*

Subpart DD and Subpart SS: Equipment Installation & Reporting Boundary



- Emissions that occur during installation while filling the equipment off-site from the electrical equipment manufacturing facility must be calculated and reported by the electrical equipment manufacturer under Subpart SS until the title of the equipment has transferred to the electric power T&D entity.
- Once the title has transferred to the equipment user, the subpart DD facility is responsible for reporting emissions even if third-party conducts installation.
 - Emissions are captured in subpart DD mass-balance monitoring methods
- For subpart SS facilities, emissions associated with equipment installation off-site from the manufacturing facility are estimating using a specified mass-balance formula provided in subpart SS.

Subpart DD: Scale Accuracy



- **Accuracy:** EPA eased the proposed accuracy requirement for scales (of ± 1 percent of the true mass or weight) as follows:
 - Scales used to weigh cylinders must be accurate to within ± 2 pounds
 - For determining the amount of gas returned to the supplier in cylinders, a detailed monthly accounting may be obtained from the gas supplier as long as the gas supplier measured the cylinders using scales that were accurate to within ± 2 pounds

Subpart DD: Recalibration Requirements



- **Recalibration:** EPA eased the proposed recalibration requirement (of at least annually or as specified by the manufacturer, whichever more frequent) as follows:
 - Recalibration must be performed per manufacturer specifications

Subpart DD: Cylinder Weighing for Storage Inventory



- EPA eased the requirement for the frequency of storage inventory cylinder weighing
 - Initial proposal: cylinders must be weighed when entering and leaving storage inventory
 - Final subpart DD: cylinders must be weighed for beginning and end of year inventory measurements only
- Beginning and end of year inventory measurements must be developed by physically weighing the cylinders
 - Beginning and end of year measurements should match
 - Data from software inventory tracking system not sufficient

Subpart DD: Data Reporting Requirements



- Each component of mass-balance inputs must be reported
 - SF₆ and PFCs
 - stored in containers at the beginning and end of the year (decrease in inventory)
 - purchased in bulk (acquisition)
 - purchased from equipment manufacturers or distributors inside equipment (acquisition)
 - returned from off-site after recycling (acquisition)
 - contained in equipment sold to other entities (disbursement)
 - returned to suppliers (disbursement)
 - sent off site to be recycled (disbursement)
 - sent off site for destruction (disbursement)
 - new nameplate capacity commissioned during the year (change in nameplate capacity)
 - nameplate capacity retired during the year (change in nameplate capacity)
- Other data must be reported to confirm accuracy of emission estimates:
 - System-wide nameplate capacity at beginning of year (excluding sealed pressure)
 - Transmission line miles (above 35 kV)
 - Distribution line miles (at or below 35 kV)