

Greenhouse Gas Reporting Rule

Ward Burns, P.E.

Air Permitting and Compliance Branch

EPA Region 7

Burns.Ward@epamail.epa.gov

(913) 551-7960



Overview: U.S. EPA GHG Reporting Program (GHGRP)



Goal of GHGRP is to collect accurate and timely data on GHG information to inform future policy decisions.

- Monitoring began in 2010 for most emission sources with first reports due by Sept. 30, 2011.
- An additional 12 source categories began collecting data in 2011 and report by March 31, 2012.
- Rule covers 41 source categories for reporting, accounting for 85-90% of U.S. GHG emissions.
- Reporting only, no control or use requirements.



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)**
- **Ferroalloy 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)**

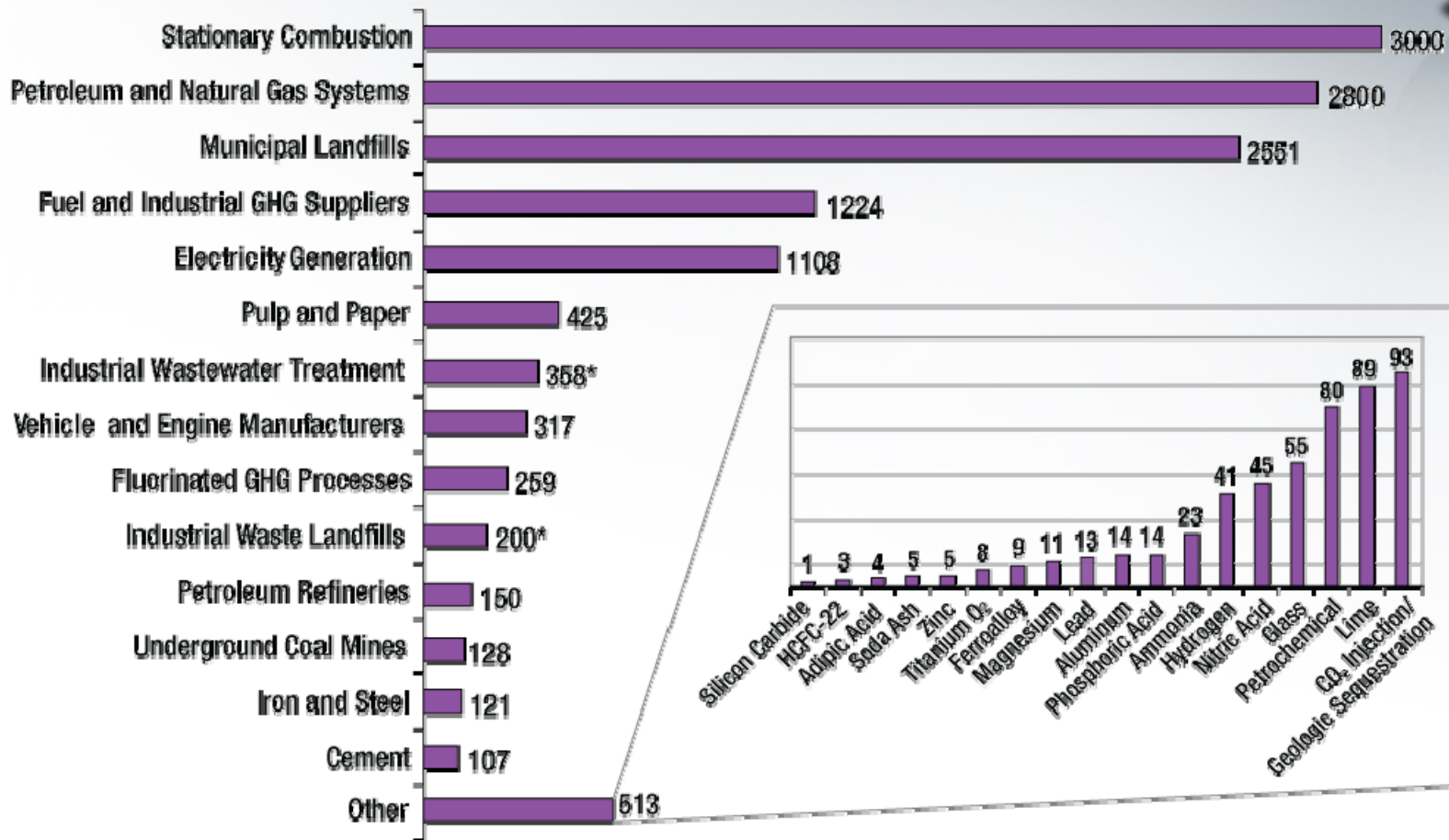
New Source Categories for 2011



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)

More Than 13,000 U.S. Facilities Covered



*The majority of these facilities already have to report under other subparts (e.g., pulp and paper, petroleum refining)

Key Elements of the Rule



- Annual reporting of GHG by:
 - 41 source categories, which includes:
 - 33 types of direct emitters
 - 6 types of suppliers of fuel and industrial GHG
 - Facilities that inject CO₂ underground for geologic sequestration, enhanced oil recovery, or any other purpose.
- 25,000 metric tons CO₂e or more per year reporting threshold for most sources; capacity-based thresholds where feasible
- Direct reporting to EPA electronically
- EPA verification of emissions data

What GHGs Are Reported?



- CO₂
- CH₄ (methane)
- N₂O (nitrous oxide)
- Fluorinated GHGs
 - HFCs (hydrofluorocarbons)
 - PFCs (perfluorocarbons)
 - SF₆ (sulfur hexafluoride)
 - Other fluorinated gases (except CFC and HCFC and gases <1 mm Hg @25° C)

What Is CO₂e?



- GHGs have varying heat-trapping ability and atmospheric lifetimes.
- Global warming potential (GWP) is a metric used to compare emissions among GHGs.
- The GWP of CO₂ is 1.0, and the GWP of other GHGs are expressed relative to CO₂
 - For example, CH₄ has a GWP of 21. Each metric ton of CH₄ emissions would have 21 times as much impact on global warming (over a 100-year time horizon) as a metric ton of CO₂ emissions.
- Mass emissions x GWP = CO₂e (metric tons)

*Table A-1 of Subpart A lists GWPs**

**Fluorinated Greenhouse Gases source categories can use a default GWP of 2,000 for GWPs not listed in Table A-1.*

Assessing Applicability to the Rule



- A facility can have multiple source categories.
- You must evaluate each source category separately to assess applicability to the rule.
- If rule applies, report emissions for all source categories at your facility for which methods are provided in the rule.

Does the Rule Apply to My Facility?

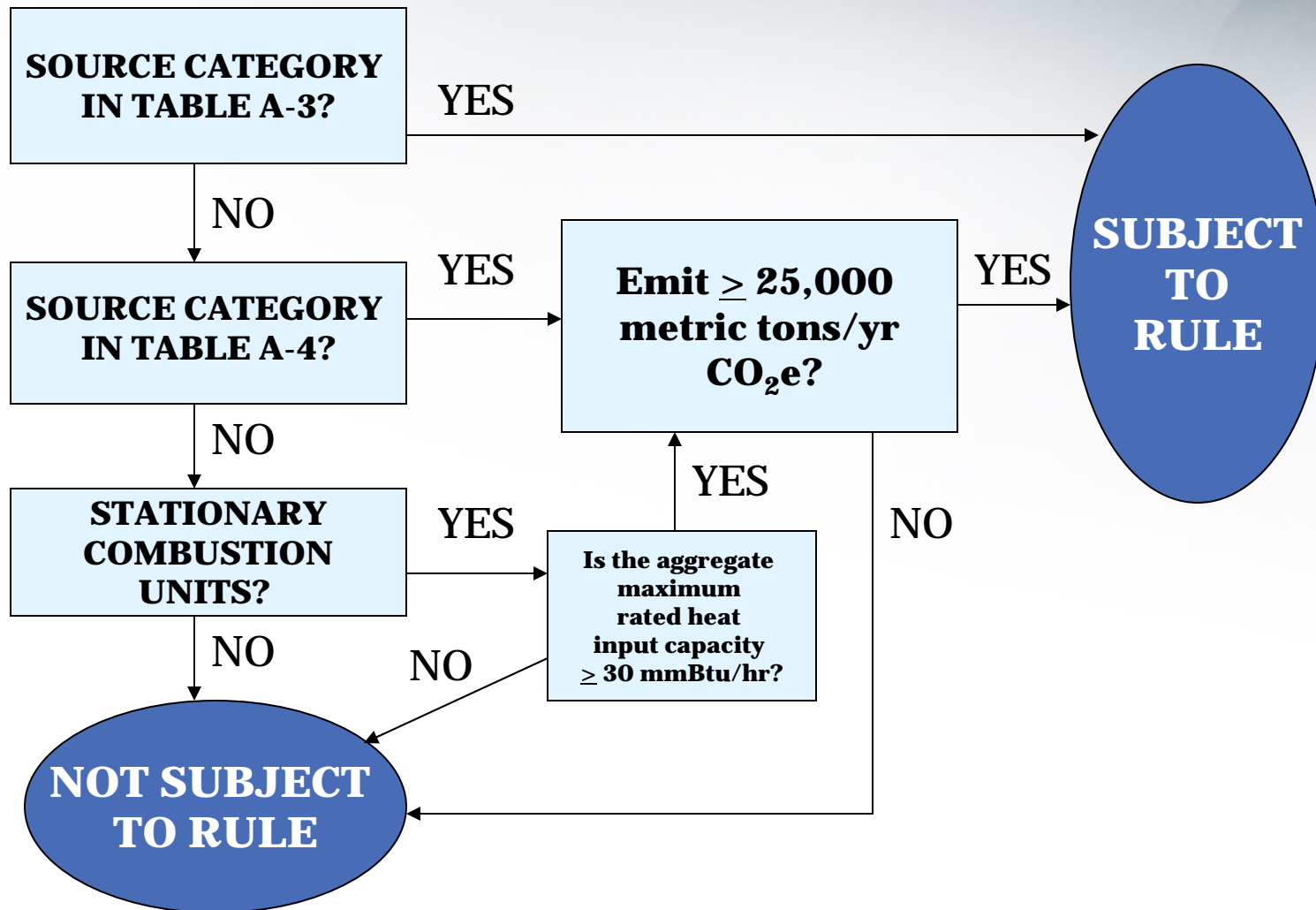




Table A-3: All-in Source Categories

Applies in 2010

Electricity Generation if report CO₂
year-round through Part 75

Adipic Acid Production

Aluminum Production

Ammonia Manufacturing

Cement Production

HCFC-22 Production/
HFC-23 Destruction Processes

Lime Manufacturing

Nitric Acid Production

Petrochemical Production

Petroleum Refineries

Phosphoric Acid Production

Manure Management Systems*

Silicon Carbide Production

Soda Ash Production

Titanium Dioxide Production

Municipal Solid Waste Landfills that
generate CH₄ ≥ 25,000 metric tons CO₂e per
year

Applies in 2011

Carbon Dioxide Injection

Electrical Equipment Use

Electrical Equipment Manufacturing

Fluorinated GHG processes

Geologic Sequestration

Underground Coal Mines that are subject
to quarterly sampling by MSHA

**The rule for manure management systems will not be implemented due to a Congressional restriction prohibiting the expenditure of funds for this purpose.*



Table A-4: Threshold Source Categories*

Applies in 2010

Ferroalloy Production
Glass Production
Hydrogen Production
Iron and Steel Production
Lead Production
Pulp and Paper
Manufacturing
Zinc Production

Applies in 2011

Electronics Production
Fluorinated GHG Production
Industrial Wastewater
Treatment
Industrial Waste Landfills
Magnesium Production
Petroleum and Natural Gas
systems

** $\geq 25,000$ metric tons CO_2e per year from all source categories, combustion units, and miscellaneous use of carbonates.*

What Combustion Units Will Emit 25,000 MT CO₂e per Year?



| Fuel | Design Capacity* (mmBtu/hr) | Annual Fuel Use |
|-------------|--------------------------------|-----------------------------|
| Coal | 30 | 10,800 tons |
| Fuel Oil | 35 | 2.3 million gallons |
| Natural Gas | 50 | 460 million ft ³ |

**Assuming full utilization and 8,760 hours/yr.*

25,000 MT CO₂e per year is equivalent to using 131 rail cars of coal



Applicability Tool

To help determine if facilities must report...

- Indicate reporting year
- Check-off list of source categories
- Combustion calculator
- Municipal landfill calculator
- Electronics Manufacturing calculator
- Petroleum and Natural Gas Production calculators

<http://www.epa.gov/climatechange/emissions/GHG-calculator/index.html>

** Calculators provide conservatively high emission estimates*

How Do I Estimate Emissions for Applicability Purposes?



- Estimate actual emissions
- Use applicable equations in the rule
- Monitoring data not required—use available company records
- Simplified methods allowed for combustion sources
- Include CO₂ transferred off-site
- Exclude CO₂ emissions from biomass combustion, but include CH₄ and N₂O emissions
- Exclude research and development activities, unless otherwise specified in an applicable subpart (e.g. subpart RR)
- Include an F-GHG only if listed in Table A-1 of rule

If you are close to 25,000 MT CO₂e/yr based on available records, it may be prudent to monitor.

When Can I Stop Annual Reporting?



- Notify EPA by March 31 of the year after you meet one of the following conditions:
 - If annual reports demonstrate CO₂e <25,000 metric tons/yr for 5 consecutive years.
 - If annual reports demonstrate CO₂e <15,000 metric tons/yr for 3 consecutive years.
 - If you shut down all processes/units/supply operations covered by the rule. (Does not apply to landfills)
- You must resume reporting in future year if conditions are no longer met

Electronic Reporting System



- All reporting under the GHG Reporting Program will be electronic.
- Web-based system for facility/supplier to EPA reporting
 - Web-forms will guide reporters through data entry and submission.
 - Include a mechanism to submit file directly using Extensible Markup Language (XML) format.
 - XML schema is available on the EPA website.
- For updates on the data system, training schedule, and to view the XML schema:

<http://www.epa.gov/climatechange/emissions/data-reporting-system.html>

Note: Subparts LL and MM must report using the Office of Transportation and Air Quality Fuels Registration (OTAQREG) system.

e-GGRT User and Facility Registration



e-GGRT Help

- About e-GGRT
- Climate Change Home Page
- Applicability Tool for the Mandatory Greenhouse Gas Reporting Rule

About the e-GGRT One-time User Registration Process

SHOULD YOU REGISTER TO USE e-GGRT?

You will need to create an e-GGRT user account, if you plan to register or represent a Facility or Supplier affected by EPA's Mandatory Greenhouse Gas Reporting Rule.

If you are uncertain, the [Applicability Tool](#) may help you assess whether your facility is required to report greenhouse gas (GHG) emissions. Note that information tailored to Suppliers and other affected entities can also be found there.

You are already registered if:

- You have a CDX Account.** CDX and e-GGRT are integrated so that both will work with your existing CDX account.

Login to e-GGRT with your username and password.

- On screen directions explain each step of user registration.

| | |
|---|--|
| 1 Create User Profile | Provide your contact information and create a user profile. |
| 2 Pick Challenge Questions | Pick and supply answers to five challenge questions. You will be asked one of those questions anytime you login and sign a submission in e-GGRT. |
| 3 Electronic Signature Agreement | Print the Electronic Signature Agreement (ESA). Sign the form, then mail or courier to EPA. You will not be able to use e-GGRT until EPA has received and processed this paper agreement with your signature. |
| 4 Print Summary | Print the summary of your registration for your records. If you have questions regarding your registration, including the status of your ESA, you can refer to this document. |
| Start Using e-GGRT | EPA will not activate your account until your ESA has been received and processed. An account activation notice will be sent to the email address you used for registration. You will then be able to use e-GGRT. |

BEGIN REGISTRATION

If your facility is not subject to the GHG reporting rule in 2010, your facility is not required to register with the e-GGRT system by January 30, 2011. If your facility triggers the rule during 2011, you would be required to register your facility 60 days before submission of your initial report (i.e., January 31, 2012).

GHG Data Publication



- EPA plans to publish collected through the GHG RP on the web
- EPA will only publish non-CBI data
 - CBI data will be aggregated to shield sensitive information
- EPA is developing a publication tool for the GHG RP data
 - Display facilities on a map
 - Create charts, graphs, and lists
 - Download data
 - Leverage social media

Goals for Data Publication



- Increase understanding of the sources of GHG emissions in the U.S. among the public
- Encourage voluntary reductions of emissions
- Improve quality of reported data
- Support regional, state, and local programs
- Information to be displayed in a simple, transparent manner

Confidential Business Information (CBI)



- EPA will protect any information claimed as CBI in accordance with regulations in 40 CFR Part 2, subpart B
- In general, emissions data collected under CAA sections 114 and 208 cannot be considered CBI
- EPA is deferring the reporting of certain data elements that are inputs to emission equations to better assess implications of its collection and public release. See 12/27/10 FR notice for list of data elements not required to be reported in March 2011.



Reporters must submit their 2010 GHG Reports by Sept. 30, 2011. The Interim Final deferral action published on December 27, 2010 in the Federal Register applies only to specific data elements listed in that action and does not defer reporting of any other GHG data.



Reporting Rule

- ❑ Requires only monitoring and reporting of GHGs
- ❑ CO₂, CH₄, N₂O, SF₆, HFCs, PFCs, & other fluorinated gases
- ❑ Actual emissions from specific equipment or sources
- ❑ Excludes some biogenic emissions
- ❑ Emissions calculated according to the method specified in the rule
- ❑ Uses CO₂e
- ❑ Uses metric tons

Permitting

- ❑ Requires obtaining permits and control of GHGs
- ❑ CO₂, CH₄, N₂O, SF₆, HFCs, & PFCs
- ❑ Potential to emit
- ❑ May exclude fugitive emissions
- ❑ Emissions calculated using the best information available
- ❑ Uses CO₂e and mass
- ❑ Uses short tons



Additional Information

- www.epa.gov/climatechange/emissions/ghgrulemaking.html
 - Preamble and rule
 - Technical background documents on source categories
 - Response to comment documents
 - Link to rulemaking docket
 - Technical assistance materials (e.g., Information Sheets, Monitoring Checklists, FAQs, optional forms)
 - Data reporting system information (e-GGRT)
 - On-line applicability tool
- Rule questions: GHGMRR@epa.gov
- e-GGRT questions: GHGReporting@epa.gov