

# **Greenhouse Gas Reporting Program**

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**October 5, 2010**



# Outline



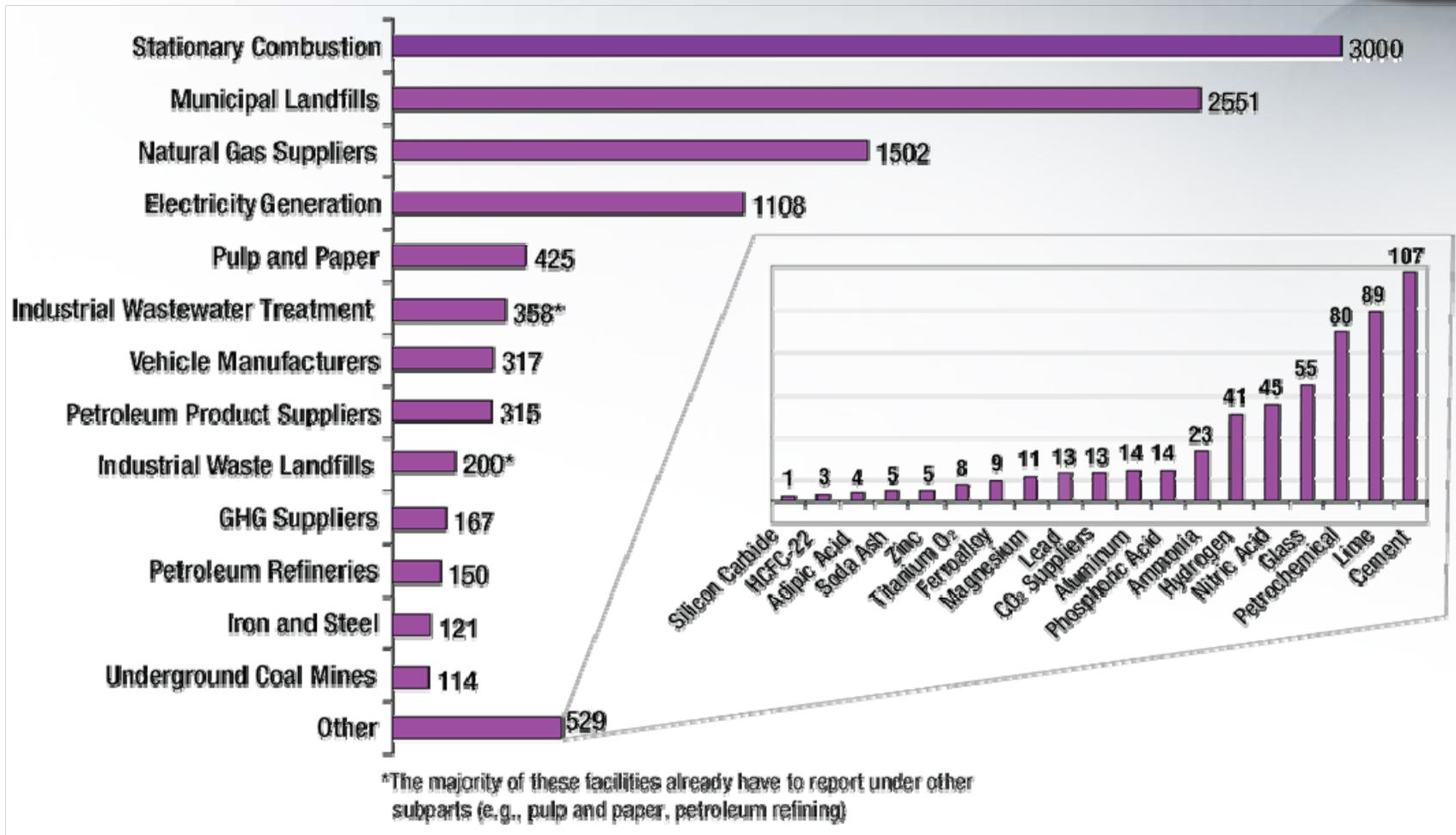
- Background
- Overview of General Provisions
- More Information

# Purpose of 40 CFR Part 98



- Part 98 requires reporting of greenhouse gas (GHG) emissions and other relevant information from certain source categories in the United States
  - Better understand relative emissions of specific industries, and of individual facilities within those industries
  - Better understand factors that influence GHG emission rates and actions facilities could take to reduce emissions
- Does not require control of GHG

# About 10,000 U.S. Facilities Covered



# Key Elements



- Annual reporting of GHG by:
  - Direct emitting source categories
  - Suppliers of fuel and industrial GHG
  - Motor vehicle and engine suppliers (except light duty sector)
- 25,000 metric tons CO<sub>2</sub>e 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?



- CO<sub>2</sub>
- CH<sub>4</sub> (methane)
- N<sub>2</sub>O (nitrous oxide)
- Fluorinated GHGs
  - HFCs (hydrofluorocarbons)
  - PFCs (perfluorocarbons)
  - SF<sub>6</sub> (sulfur hexafluoride)
  - Other fluorinated gases (except CFC and HCFC and gases <1 mm Hg @25° C)

# What is CO<sub>2</sub>e?



- 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 CO<sub>2</sub> is 1.0, and the GWP of other GHGs are expressed relative to CO<sub>2</sub>
  - For example, CH<sub>4</sub> has a GWP of 21. Each metric ton of CH<sub>4</sub> emissions would have 21 times as much impact on global warming (over a 100-year time horizon) as a metric ton of CO<sub>2</sub> emissions.
- Mass emissions x GWP = CO<sub>2</sub>e (metric tons)

Table A-1 of Subpart A lists GWPs

# **Applicability for Direct Emitters is Facility-based**



A facility is defined as...

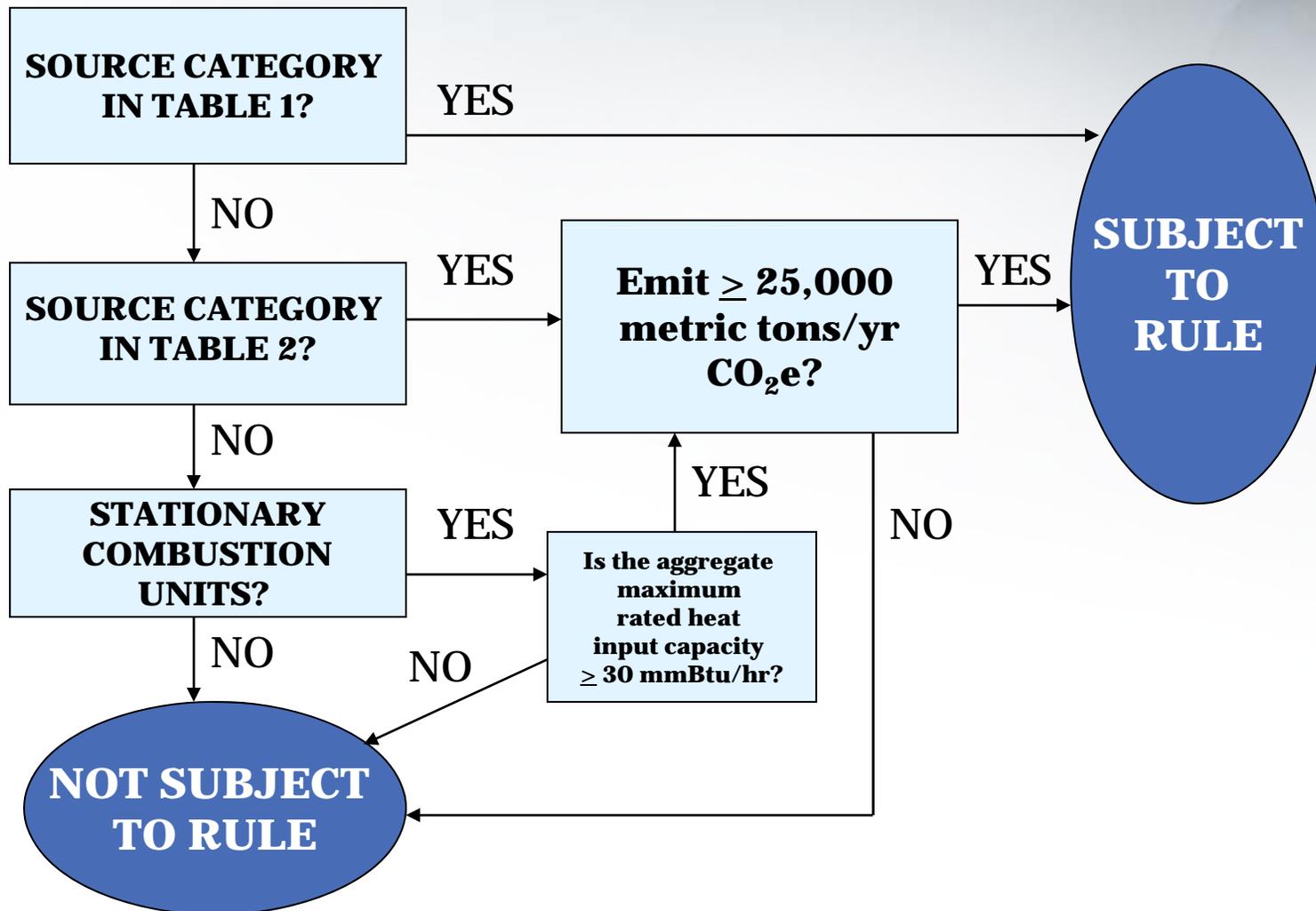
- Physical property, plant, building, structure, source, or stationary equipment;
- on contiguous or adjacent properties;
- in actual physical contact or separated solely by public roadway or other public right of way; and
- under common ownership or common control

# Assessing Applicability to the Rule



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

# Does the Rule Apply to My Facility?





# Table 1: All-in Source Categories

Electricity Generation if report  
CO<sub>2</sub> 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

Silicon Carbide Production

Soda Ash Production

Titanium Dioxide Production

Municipal Solid Waste Landfills

Manure Management Systems\*\*

Underground Coal Mines

\*Applies in reporting year 2011 and beyond.

\*\*EPA will not be implementing the manure management rule due to a Congressional restriction]



## **Table 2: Threshold Source Categories<sup>1</sup>**

Ferroalloy Production	Iron and Steel
Glass Production	Production
Hydrogen Production	Lead Production
Industrial Wastewater <sup>2</sup>	Magnesium Production <sup>2</sup>
Treatment	Pulp and Paper
Industrial Waste	Manufacturing
Landfills <sup>2</sup>	Zinc Production

<sup>1</sup>  $\geq 25,000$  metric tons CO<sub>2</sub>e per year from all source categories, combustion units, and miscellaneous use of carbonates.

<sup>2</sup> Reporting applies in year 2011 and beyond.

# What Combustion Units May Emit 25,000 MT CO<sub>2</sub>e per year?



Fuel	Design Capacity <sup>1</sup> (mmBtu/hr)	Annual fuel Use
Coal	30	10,800 tons
Fuel Oil	35	2.3 million gallons
Natural Gas	50	460 million ft <sup>3</sup>

<sup>1</sup>Assuming full utilization and 8,760 hours/yr.



# Applicability Tool

To help determine if facilities must report...

- Check-off list of source categories
- Combustion calculator
- Municipal landfill calculator

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

# What are the Reporting Requirements?



- **Subpart A: General Provisions**
  - Applicability provisions
  - Schedule
  - Reporting and recordkeeping requirements common to all reporters
  - Definitions
  - Report submission procedures
  - Other (e.g., calibration procedures, monitoring plan)
- **Subparts C-PP: Source-Specific Requirements**
  - Definition of source category
  - GHG to report
  - Calculation methods
  - Monitoring and QA/QC
  - Missing data procedures
  - Reporting and recordkeeping elements unique to each subpart

# General Monitoring Approaches



- **Continuous emission monitoring systems (CEMS)**
  - Required if already used (e.g., NSPS, Acid Rain Program) and meet specified criteria
  - Optional for other sources
- **Source category-specific GHG calculation methods**
  - Monitor process parameters, fuel use
  - Calculate GHG using equations in applicable subparts
  - Example approaches (varies by source category)
    - Mass balance calculation
    - Site-specific emission factors
    - Default emission factors

# **Special Provisions: Best Available Monitoring Methods**



- Best available monitoring methods may be used during all or part of 2011, if approved by the Administrator.
  - Use emission estimation equations provided in the rule
  - Obtain equation inputs using best available monitoring method (e.g., current monitoring methods, engineering calculations, company data)
- No extension will be approved beyond December 31, 2011

# What Do Facilities Report?



- Identifying information
- Annual GHG emissions excluding biomass CO<sub>2</sub>, metric tons CO<sub>2</sub>e
- Annual CO<sub>2</sub> emissions from biomass combustion, metric tons
- Annual emissions of each GHG for each source category, metric tons each gas
- Other emissions data required by an applicable subpart (e.g., by unit or process line)
- Verification data required by each subpart (e.g., data used to calculate emissions)
- Data elements for which a missing data procedure was used
- Certification by the “Designated Representative”

# What Is Not Reported?



- Indirect emissions (e.g., electricity use)
- Mobile source emissions (e.g., fleet emissions)
- Emission offsets

# **Retain These Records for 3 Years:**



- List of all units, operations, processes, and activities for which GHG emission were calculated
- All data used to calculate the GHG emissions for each unit, operation, process, and activity, categorized by fuel or material type
- The annual GHG reports
- Missing data computations
- Written GHG Monitoring Plan
- Certification and QA tests
- Maintenance records for measurement equipment
- Other data required by applicable subparts

# Monitoring Plan



- Identifies responsibilities (i.e., job titles) for data collection
- Explains processes and methods used for data collection
- Describes QA/QC procedures for monitors
- May rely on references to existing corporate documents (e.g., existing QA plans, standard operating procedures)

# How Will Emissions Be Verified?



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

# Electronic Reporting System



- All reporting under the GHG Reporting Program will be electronic.
- EPA's Electronic Greenhouse Gas Reporting Tool (e-GGRT) is under development.
- Web-based system for facility/supplier to EPA reporting
  - Web-forms will guide reporters through data entry and submission.
  - Built-in emissions calculations.
  - Will include a mechanism to submit file directly using Extensible Markup Language (XML) format.
  - Draft XML schema is available on the EPA website.
- For updates on the data system, training schedule, and to view the draft XML schema:

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

# 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
- On July 7, 2010, EPA proposed in the *Federal Register* a determination of CBI status of all GHG data to be reported.
- A final determination is expected in early 2011.

# Schedule for Monitoring and Reporting



<b>1/1/10</b>	<b>Start collecting data using required methods</b>
<b>4/1/10</b>	<b>Complete Monitoring Plan (does not have to be submitted)</b>
<b>12/31/10</b>	<b>Complete 2011 data collection</b>
<b>1/31/11</b>	<b>Submit certificate of representation</b>
<b>3/31/11</b>	<b>Submit GHG report for 2011</b>
<b>Ongoing</b>	<b>Submit corrected report 45 days after each discovery</b>
<b>Ongoing</b>	<b>Submit annual reports on 3/31 each year</b>

# What Stationary Fuel Combustion Units are Covered?



- Devices that combust solid, liquid, or gaseous fuel for:
  - producing electricity, generating steam, or providing useful heat or energy for industrial, commercial, or institutional use, or
  - reducing the volume of waste by removing combustible matter
- Examples:
  - Boilers
  - Stationary Internal Combustion Engines
  - Process Heaters
  - Combustion Turbines
  - Incinerators
  - Other Stationary Fuel Combustion Equipment (e.g. control devices)
- Covers any fuel combustion device, unless specifically exempted

# **Subpart C does not apply to:**



- Portable equipment
- Emergency generators and emergency equipment
- Agricultural irrigation devices
- Flares, unless otherwise required by another subpart
- Electricity Generating Units subject to subpart D
- Hazardous waste combustion (co-fired fossil fuels only)
- Pilot fuels

# What GHGs are Reported?



- **CO<sub>2</sub> from stationary combustion**
  - Four different methods (Tiers) for calculating CO<sub>2</sub> emissions
  - Different tiers used based on unit size, fuel type, other factors
  - Separately estimate CO<sub>2</sub> from sorbent used for acid gas control (unless CO<sub>2</sub> is measured with CEMS)
- **CH<sub>4</sub> and N<sub>2</sub>O**
  - Emission factors

# CO2 Emission Calculation Tiers



Tier	For this fuel...	Measure these parameters...	And use a default factor for...
1	55 fuels <sup>1</sup>	Annual fuel use	HHV CO2 emission factor
2	55 fuels <sup>1</sup> MSW	Annual fuel use HHV Steam generation	CO2 emission factor CO2 emission factor
3	Solid/liquid Gas	Annual fuel use Carbon content Annual fuel use Carbon content Molecular weight	--
4	All	CO2	--

<sup>1</sup>Any of the 55 fuels listed in Table C-1 of subpart C, except MSW units that generate steam.



# More Information - Hotline

U.S. ENVIRONMENTAL PROTECTION AGENCY

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[Background](#) | [Rule Help Center](#)

For general questions about the final Mandatory Reporting of Greenhouse Gases Rule, please refer to the [Frequently Asked Questions](#) page. Additional resources, including information sheets, checklists, and technical support documents for each subpart of the rule are available through the [Resources by Subpart](#) page.

EPA is also operating a hotline for general and administrative questions about the rule. The hotline can be accessed via phone at 1-877-GHG-1188 or through the [Contact Us](#) page.

Additional information related to the rule will be posted on this site as it becomes available.

#### Resources and Tools

- [BAMM Petition Form \(PDF\)](#) (5 pp, 30K, [About PDF](#))
- [Special Provisions 2010 Fact Sheet](#) (6 pp, 55K, [About PDF](#))
- [Frequently Asked Questions](#)
- [Applicability Tool](#)
- [Power Point Presentation of the Mandatory Reporting of GHG Rule \(PDF\)](#) (31 pp, 273K, [About PDF](#))
- [Information Sheets/Checklists for Source Categories](#)
- [Technical Support Documents](#)
- [General Fact Sheet \(PDF\)](#) (3 pp, 35K, [About PDF](#))
- [Major Changes to the Rule Since Proposal \(PDF\)](#) (1 p, 46K, [About PDF](#))
- [Press Release, 9/22/09](#)

You will need Adobe Reader to view some of the files on this page. See [EPA's PDF page](#) to learn more.

# More Information- Web site



[www.epa.gov/climatechange/emissions/ghgrulemaking.html](http://www.epa.gov/climatechange/emissions/ghgrulemaking.html)

- Information sheets and monitoring checklists for each subpart
- FAQs (by topic areas)
- Preamble and rule
- Technical background documents on source categories
- Comment response documents
- Training and Webinar schedule
- Other technical assistance materials (e.g. applicability tool)
- Hotline

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