# MANDATORY REPORTING OF GREENHOUSE GASES

## FACT SHEET

## ACTION

- On September 22, 2009, the U.S. Environmental Protection Agency (EPA) issued a final rule for mandatory reporting of greenhouse gases (GHG) from large GHG emissions sources in the United States.
- This reporting rule will provide a better understanding of where GHGs are coming from and will guide development of the best possible policies and programs to reduce emissions. This comprehensive, nationwide emissions data will help in the fight against climate change.
- In general, this national reporting requirement will provide EPA with accurate and timely GHG emissions data from facilities that emit 25,000 metric tons or more of carbon dioxide (CO2) per year. This publically available data will allow the reporters to track their own emissions, compare them to similar facilities, and aid in identifying cost effective opportunities to reduce emissions in the future.
- This action includes final reporting requirements for 31 of the 42 emission sources listed in the proposal. At this time, EPA is not finalizing the remaining source categories as we further consider comments and options.

## BACKGROUND

- EPA Administrator signed the proposed rule for mandatory reporting of GHGs from large emission sources in the United States on March 10, 2009. It was published in the Federal Register on April 10, 2009.
- EPA received almost 17,000 written comments on the proposal and heard from approximately 60 people at the two public hearings. The final rule reflects changes EPA made as it carefully considered and responded to significant comments.
- The GHG reporting methods for this final rule were built upon existing GHG reporting programs and guidance documents including those developed by the private sector, state and regional programs, and national voluntary programs.

## FINAL RULE OVERVIEW

- In general, the threshold for reporting is 25,000 metric tons or more of carbon dioxide ($CO_2$) equivalent per year. Reporting is at the facility level, except that certain suppliers of fossil fuels and industrial greenhouse gases along with vehicle and engine manufacturers will report at the corporate level. Facilities and suppliers will begin collecting data on January 1, 2010. The first emissions report is due on March 31, 2011, for emissions during 2010. Manufacturers of vehicles and engines outside of the light-duty sector will begin reporting $CO_2$ for model year 2011 and other GHGs in subsequent model years as part of existing EPA certification programs.
- An estimated 85 percent of the total U.S. GHG emissions, from approximately 10,000 facilities, are covered by this final rule.

- Most small businesses would fall below the 25,000 metric ton threshold and are not required to report GHG emissions to EPA.
- Reports are submitted annually unless they are facilities with electric generating units that also report to the Acid Rain Program. Those reporters will continue with current practices, as well as submit annual GHG emission reports under this rule.
- EPA will verify the data submitted and will not require third party verification. Prior to EPA verification, reporters will be required to self-certify the data they submit to EPA. This is consistent with other Clean Air Act programs.
- The only emission source in the agriculture sector covered by the rule is manure management systems at livestock operations with GHG emissions that meet or exceed the threshold of 25,000 metric tons. EPA modeling estimates that just over 100 manure management systems at large livestock operations meet this threshold.
- EPA estimates the average cost of reporting for the private sector under this rule will be approximately $115 million in the first year of reporting and $72 million in subsequent years.
- Some key changes from the proposed rule to the final rule are as follows:
  - **Applicability**. Reduced the number of source and supply categories that facilities and suppliers must report under this final rule. The following source and supply categories are not required to report at this time:

| | |
|---|---|
| Electronics manufacturing | Oil and natural gas systems |
| Ethanol production | $SF_6$ from electrical equipment |
| Fluorinated GHG production | Underground coal mines |
| Food processing | Wastewater treatment |
| Industrial landfills | Suppliers of coal |
| Magnesium production | |

  - **Exiting the Program**. Added a mechanism for facilities and suppliers to cease annual reporting by reducing their GHG emissions.
    - Cease reporting after 5 consecutive years of emissions below 25,000 metric tons $CO_2e$/year.
    - Cease reporting after 3 consecutive years of emissions below 15,000 metric tons $CO_2e$/year.
    - Cease reporting if the GHG-emitting processes or operations are shut down.
  - **Measuring Devices**. Added a provision to allow use of best available data in lieu of the required monitoring methods for January - March 2010. Facilities can request a date extension beyond March 2010, but EPA will not approve any requests for an extension beyond 2010.
  - **Monitoring Equipment**. In several subparts, added monitoring options, changed monitoring locations, or allowed engineering calculations to reduce the need for installing new monitors.
  - **Sampling Frequency**. For fuel combustion and some other source categories, reduced the required frequency for sampling and analysis.
  - **Exemption**. Excluded R&D activities from reporting.
  - **Quality Assurance**. Added calibration requirements for flow meters and other monitoring devices including a five percent accuracy specification.

- **Report Revision**. Added provision to require submittal of revised annual GHG reports if needed to correct errors.

- **Records Retention**. Changed the general records retention period from 5 years to 3 years.

- **Verification**. In several subparts, required more data to be reported rather than kept as records to allow EPA to verify reported emissions.

- **Combustion Sources**. Added exemptions for unconventional fuels, flares, hazardous wastes, and emergency equipment. Reduced the need for mass flow monitors for some units or fuels. Allowed more facilities to aggregate reporting of emissions from smaller units rather than report emissions for each individual unit.

- **Manure Management Systems**. Added an animal population threshold to reduce the burden of determining applicability. Reduced the monitoring requirements.

## PUBLIC INVOLVEMENT

- Since the publication of the proposal, EPA has held more than 150 public meetings involving over 4,000 stakeholders including trade associations, industries, states, and state- and regional-based groups since the proposal was issued. This is in addition to over 100 meetings that were held prior to issuing the proposed rule.

## NEXT STEPS AND IMPLEMENTATION

- The preamble and final regulatory text will be published in the *Federal Register* shortly, and will be made available at www.regulations.gov.
- A prepublication version is available on our website at: www.epa.gov/climatechange/emissions/ghgrulemaking.html
- To assist reporters in complying with this regulation, EPA has developed a suite of information and training resources including:
    - An on-line applicability tool that will assist potential reporters to assess if they meet the threshold for reporting
    - A series of webinars on the reporting requirements of the rule
    - A variety of guidance documents for different audiences
    - Information sheets on reporting requirements for each of the covered sectors
    - A comprehensive website with information on upcoming training opportunities along with all the available information on this website.

## MORE INFORMATION

For more information, including guidance and a schedule of training opportunities, please visit EPA's GHG Mandatory Reporting Rule Website: www.epa.gov/climatechange/emissions/ghgrulemaking.html .

# Final Mandatory Greenhouse Gases Reporting Rule

## Overview

## Agenda

- Outline
  - Background
  - Purpose of Rule
  - Key Elements of Rule
  - Assessing Applicability
  - Special Provisions for 2010
  - Confidential Business Information
  - Electronic Reporting System
  - Major changes from proposed rule
  - For more information
- Q&A



## Background

- Directed by Congress in 2008 Appropriations Act
- Proposal signed March 10, 2009
- Public Comment Period (April 10 – June 10, 2009)
- Final rule signed September 22, 2009
- Published in Federal Register October 30, 2009

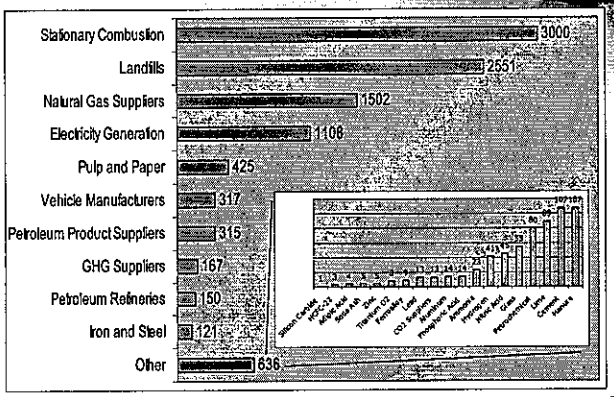


## Purpose of the Rule

- Requires reporting of greenhouse gas (GHG) emissions from all sectors of the economy in the United States
- Provides accurate and timely data to inform future climate change policies and programs
- Does not require control of GHG



## About 10,000 U.S. Facilities Covered






## Key Elements of the Rule

- Annual reporting of GHG by:
  - 25 source categories
  - 5 types of suppliers of fuel and industrial GHG
  - Motor vehicle and engine suppliers (except light duty sector)
- 25,000 metric tons $CO_2e$ per year reporting threshold for most sources; capacity-based thresholds where feasible
- Monitoring begins January 1, 2010; first reports due March 31, 2011
- Direct reporting to EPA electronically
- EPA verification of emissions data

## How much is 25,000 $MTCO_2e$?

- Equivalent to:
  - Annual greenhouse gas emissions from the energy use of approximately 2,300 homes
  - Annual greenhouse gas emissions from approximately 4,600 passenger vehicles
- Majority of commercial building owners not likely to meet reporting threshold
- Applicability Tool available online to help facilities assess whether they are required to report



## What GHGs are Reported?

- $CO_2$
- $CH_4$ (methane)
- $N_2O$ (nitrous oxide)
- Fluorinated GHGs
  - HFCs (hydrofluorocarbons)
  - PFCs (perfluorocarbons)
  - $SF_6$ (sulfur hexafluoride)
  - Other fluorinated gases



## Who Reports?

- Facility based reporting for all source categories for which there are methods
- Limited exceptions for a few reporters (e.g., fuel importers, vehicle and engine manufacturers outside of the light-duty sector)



## What is a facility?

A facility is defined as...

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

Military installations may be classified as more than one facility.



## How Does a Facility Assess Applicability?

- A facility can have multiple source categories.
- A facility must evaluate each source category separately to assess applicability to the rule.
  - "All-in" source categories: All of the facilities that have an "all-in" source category within their boundaries are subject to the rule.
  - Threshold categories: Aggregate these categories to meet the 25,000 metric tons $CO_2e$ per year reporting threshold
- If rule applies, report emissions for all source categories for which methods are provided in the rule.



## All-in Source Categories

Electricity Generation if report $CO_2$ year-round through Part 75
Adipic Acid Production
Aluminum Production
Ammonia Manufacturing
Cement Production
HCFC-22 Production
HFC-23 Destruction Processes that are not collocated with a HCFC-22 production facility and that destroy more than 2.14 metric tons of HFC-23 per year
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 that generate $CH_4$ equivalent to 25,000 metric tons $CO_2e$ or more per year
Manure Management Systems that emit 25,000 metric tons $CO_2e$ or more per year
[Note: EPA will not be implementing subpart JJ of the Mandatory GHG Reporting Rule using funds provided in its FY2010 appropriations due to a Congressional restriction prohibiting the expenditure of funds for this purpose.]

*Source categories are defined in each subpart.

# Threshold Source Categories

- Stationary Combustion Units
- Ferroalloy Production
- Glass Production
- Hydrogen Production
- Iron and Steel Production
- Lead Production
- Pulp and Paper Manufacturing
- Zinc Production

Note: Report if emissions are ≥25,000 metric tons $CO_2e$ per year from all source categories, combustion units, and miscellaneous use of carbonates.



# Source Categories Not Included in Final Rule

**EPA plans to further review public comments and other information before deciding on these subparts:**

- Electronics manufacturing
- Ethanol production
- Fluorinated GHG production
- Food processing
- Magnesium production
- Oil and natural gas systems
- Sulfur hexafluoride ($SF_6$) from electrical equipment
- Underground coal mines
- Industrial landfills
- Wastewater treatment
- Suppliers of coal
- Geologic sequestration

*Facilities with these source categories could be covered by the rule based on GHG emissions from stationary fuel combustion sources.*



# What Suppliers Are Covered?

- All producers of:
  - Petroleum products
  - Coal-based liquids
  - Industrial GHGs (F-GHG and $N_2O$)
  - $CO_2$
- Exporters of 25,000 metric tons $CO_2e$ per year
- Importers of 25,000 metric tons $CO_2e$ per year
- Natural gas and natural gas liquids
  - All fractionators
  - All local gas distribution companies



# What do Suppliers Report?

- Quantity of each product introduced into the economy (e.g., barrels, tons)
- GHG emissions associated with:
  - 100% oxidation of fuels ($CO_2e$)
  - 100% release of gases ($CO_2e$)



# How are Emissions Monitored?

General Approach:

- 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



# 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., standard operating procedures)
- Not a reporting requirement, but must be prepared by April 1, 2010

## Special Provisions for 2010: Best Available Monitoring Methods

- Best available monitoring methods may be used during January 1, 2010 through March 31, 2010
  - 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)
- Must begin following all applicable monitoring and QA/QC requirements on April 1, 2010
- If extension is needed (equipment purchase, process unit shutdown etc.), facility may request an extension.
  - Extension request must be submitted to EPA no later than 30 days after effective date of the rule.
  - No extension will be granted beyond December 31, 2010



## Special Provisions for 2010: Abbreviated Emissions Report

- Available to facilities with stationary combustion sources only
- Can report total facility emissions only (not unit level)
- Can use any calculation methodology in Subpart C



## When Can I Stop Annual Reporting?

- If annual reports demonstrate $CO_2e$ <25,000 metric tons/yr for 5 consecutive years.
- If annual reports demonstrate $CO_2e$ <15,000 metric tons/yr for 3 consecutive years.
- If you shut down all processes/units/supply operations covered by the rule.
- Must notify EPA
- However, if threshold is subsequently triggered, must start reporting again



## What are the Requirements for Mobile Sources?

- Emissions from mobile sources will be captured by reports from fuel suppliers and manufacturers of vehicles and engines (outside of the light-duty sector).
- No requirements for fleet operators or state and local governments.
- Manufacturers of vehicles and engines—including heavy-duty trucks, motorcycles, and nonroad engines—will report $CO_2$ starting with model year 2011 and other GHGs in subsequent model years.



## 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
  - Additional EPA electronic QA and consistency checks
  - Site-specific and on-site audits



## Electronic Data Reporting System

- Electronic format and system under development
- Web-based system
  - Will guide reporters through data entry and submission
  - Built-in emissions calculations
- Mechanism to submit file directly using standard format (e.g., XML)
- Continued stakeholder input during system development
- Outreach, training, and hotline to assist reporters using the system

## 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 will undertake a separate notice and comment process next year on CBI status of data collected.



## 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
- Reporting entities will report directly to EPA
  - To reduce reporting burden, EPA staff is working with the Climate Registry and the Exchange Network 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



## Major Changes from Proposal

- **Applicability.** Reduced the number of source and supply categories that facilities and suppliers must report under this final rule.
- **Exiting the Program.** Added a mechanism for facilities and suppliers to cease annual reporting by reducing their GHG emissions.
- **Measuring Devices.** Added a provision to allow use of best available monitoring methods in lieu of the required monitoring methods for January - March 2010. Facilities can request a date extension beyond March 2010, but EPA will not approve any requests for an extension beyond 2010.
- **Monitoring Equipment.** Added monitoring options, changed monitoring locations, or allowed engineering calculations to reduce the need for installing new monitors.
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## Major Changes from Proposal (continued)

- **Quality Assurance.** Added calibration requirements for flow meters and other monitoring devices including a five percent accuracy specification.
- **Report Revision.** Added provision to require submittal of revised annual GHG reports if needed to correct errors.
- **Records Retention.** Changed the general records retention period from 5 years to 3 years.
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- **Manure Management Systems.** Added an animal population threshold to reduce the burden of determining applicability. Reduced the monitoring requirements. [EPA will not be implementing the manure management rule due to a Congressional restriction prohibiting expenditure of funds for this purpose.]



## Technical Assistance

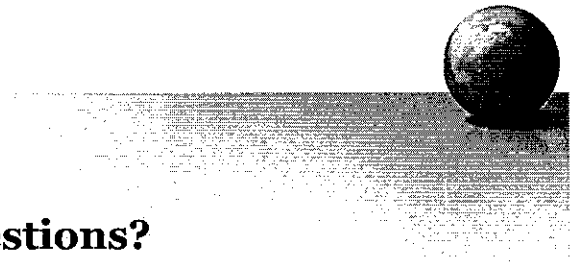
- On-line applicability tool: Assists potential reporters in assessing whether they are required to report
- Technical assistance materials (e.g., Information Sheets, Monitoring Checklists)
- Trainings and webinars
- Other materials later
- RSS available to announce new outreach materials

For complete list of materials and training schedule, see:
www.epa.gov/climatechange/emissions/ghgrulemaking.html



## 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



## Questions?

# Final Mandatory Greenhouse Gases Reporting Rule

## Applicability Tool Demonstration



## Agenda

Background

Applicability

Applicability Tool Demonstration

Q&A



## Background

- Mandatory Greenhouse Gases Reporting Rule was signed on September 22, 2009
- Provide accurate and timely data to inform future climate change policies and programs
  - 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



## Key Elements of the Rule

- Annual reporting of GHGs by:
  - 25 source categories
  - 5 types of suppliers of fuel and industrial GHG
  - Motor vehicle and engine suppliers (except light duty sector)
- 25,000 metric tons $CO_2e$ per year reporting threshold for most sources; capacity-based thresholds where feasible
- Direct reporting to EPA electronically
- EPA verification of emissions data

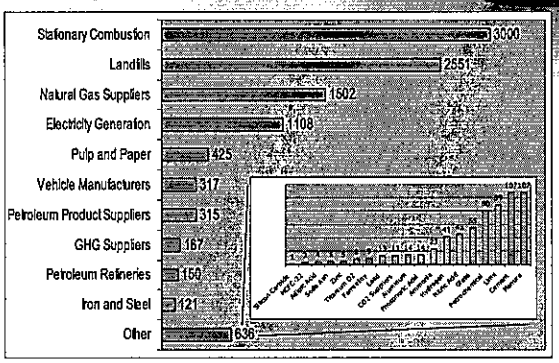


## What GHGs are Reported?

- $CO_2$
- $CH_4$ (methane)
- $N_2O$ (nitrous oxide)
- Fluorinated GHGs
  - HFCs (hydrofluorocarbons)
  - PFCs (perfluorocarbons)
  - $SF_6$ (sulfur hexafluoride)
  - Other fluorinated gases



## About 10,000 U.S. Facilities Covered



# Applicability



## Assessing Applicability

- Assessing applicability is covered under Section 98.2, subpart A of the rule.
- Applicability is assessed based on a *facility's* annual emissions or *supplier's* annual quantity of product supplied.
- Facilities and suppliers are to assess applicability based on 2010 data.



## Assessing Applicability

- A *facility* is defined as a physical property, plant, building, structure, source, or stationary equipment; in actual physical contact or separated solely by public roadway or other public right of way; and under common ownership or common control
- A facility can have multiple source categories. You must evaluate each source category separately to assess applicability to the rule.
- If the rule applies, report emissions for all source categories for which methods are provided in the rule.



## Source Categories are Grouped

- **All-in Source Categories** – Listed source categories that are automatically required to report.
- **Threshold-based Source Categories** – Listed source categories that emit 25,000 mTCO2e or more per year.
- **Stationary Combustion Only** – Source categories with only stationary combustion emissions.
- **Suppliers** - Listed source categories that produce, import or export fossil fuels and industrial GHGs



## Table 1: All-in Source Categories*

Electricity Generation if report $CO_2$ year-round through Part 75
Adipic Acid Production
Aluminum Production
Ammonia Manufacturing
Cement Production
HCFC-22 Production
HFC-23 Destruction Processes that are not collocated with a HCFC-22 production facility and that destroy more than 2.14 metric tons of HFC-23 per year
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 that generate $CH_4$ equivalent to 25,000 metric tons $CO_2e$ or more per year
Manure Management Systems with combined $CH_4$ and $N_2O$ emissions in amounts equivalent to 25,000 metric tons $CO_2e$ or more per year.

*Source categories are defined in each subpart.



## Table 2: Threshold Source Categories*

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

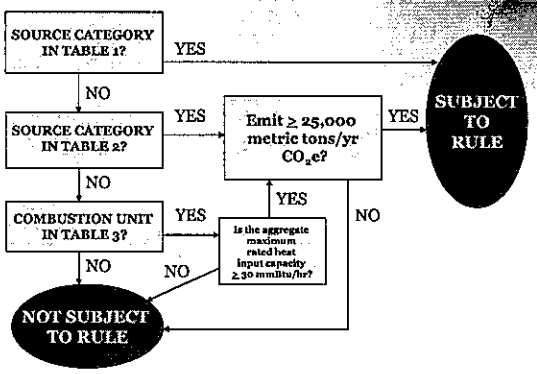
* ≥25,000 metric tons $CO_2e$ per year from all source categories, combustion units, and miscellaneous use of carbonates.

## Table 3: Stationary Combustion Units

Boilers
Stationary Internal Combustion Engines
Process Heaters
Combustion Turbines
Incinerators
Other Stationary Fuel Combustion Equipment

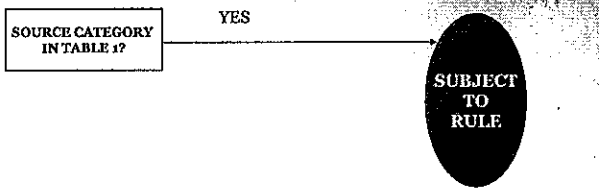


## Does the Rule Apply to My Facility?






## Does the Rule Apply to My Facility?



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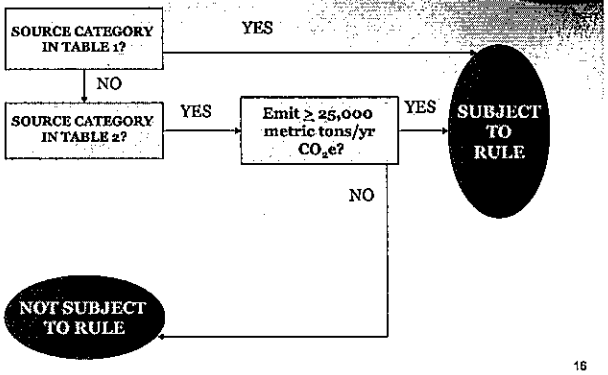




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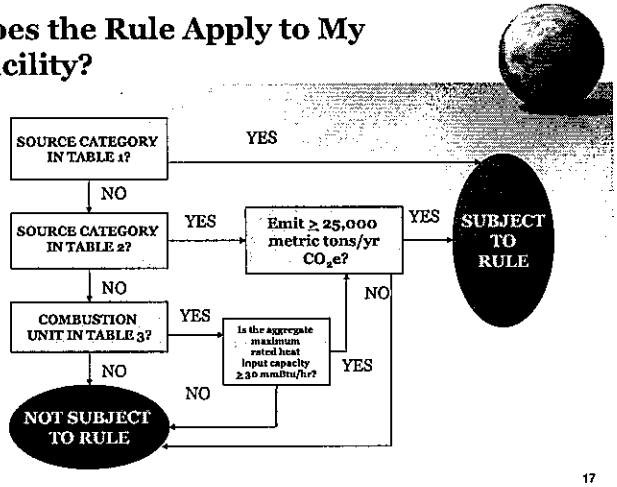




## How Do I Estimate Emissions for Applicability Purposes?

- Estimate actual emissions
- Use applicable equations in the rule
- Monitoring data not required—use available company records
- Simplified methods allowed for combustion sources
- Include $CO_2$ transferred off-site
- Exclude $CO_2$ emissions from biomass combustion
- Include an F-GHG only if listed in Table A-1 of rule

*If you are close to 25,000 MT $CO_2e$/yr based on available records, it may be prudent to monitor.*

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

| | | |
|---|---|---|
| Coal | 30 | 10,800 tons |
| Fuel Oil | 35 | 2.3 million gallons |
| Natural Gas | 50 | 460 million ft³ |

[1]Assuming full utilization and 8,760 hours/yr.



## What Suppliers Are Covered?

- All Producers of:
  - Petroleum products
  - Coal-based liquids
  - Industrial GHGs (F-GHG and $N_2O$)
  - $CO_2$
- Exporters of 25,000 metric tons $CO_2e$ per year
- Importers of 25,000 metric tons $CO_2e$ per year
- Natural gas and natural gas liquids
  - All fractionators
  - All local gas distribution companies



## Agriculture and Livestock

- Applicability is based on GHG emissions from manure management systems only.
- Most GHG emissions associated with farming and agriculture are not covered by the rule.
- About 100 large livestock operations are estimated to trigger reporting based on 25,000 metric ton $CO_2e$ threshold.
- Livestock facilities do not report emissions from other source categories unless those source categories independently trigger applicability.



## Applicability Tool

To help determine if facilities must report...

- Check-off list of source categories
- Combustion calculator
- Assistance on municipal landfills and manure management

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