Overview and Lessons Learned

U.S. GHG Reporting Program

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U.S. EPA
World Bank Partnership for Market Readiness
Regional GHG MRV Training Workshop
17 – 19 September, 2014
Izmir, Turkey
Presentation Outline

• U.S. Greenhouse Gas Reporting Program Basics
• Regulatory Process
• Programmatic Requirements
• Data Collection and Management
• RY2012 Data Results
US GHGRP Basics
History

- Required by Congressional Appropriation Act (2008 budget)
- Data collected from upstream (suppliers) and downstream (direct emitters)
- Cornerstone for monitoring, reporting, and verifying (MRV) activity that enables EPA to provide accurate and timely GHG data to inform future policy
- Program is policy neutral
- Authority for the rule given under U.S. Clean Air Act
Regulatory Timeline, Stakeholder Outreach

- 26 December, 2007: Appropriations Act
- January, 2008: Rule Development
- **10 April, 2009:** Proposed Rule
- 10 April – 9 June, 2009: Notice & Comment Period
- 6 April and 16 April, 2009: Public Hearings
- **30 October, 2009:** Final Rule
- 1 January, 2010: First reporting year begins
- 30 September, 2011: First data collected

Stakeholder Engagement
US GHG Reporting Program

• Annual mandatory reporting of GHG:
  – Rule covers 41 source categories for reporting, accounting for 85-90% of total U.S. GHG emissions:
    – 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.

• Direct reporting to EPA electronically
• EPA verification of emissions data
• Monitoring began in 2010 for most emission sources with first reports submitted to EPA in September, 2011
• 2010 to 2012 data now publicly available
# U.S. GHGRP: Source Categories Covered

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<td>- Offshore Production</td>
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<td>- Natural Gas Processing</td>
<td>- Natural Gas Distribution Companies</td>
<td>- Geologic Sequestration of CO2</td>
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- Suppliers of CO2
- Injection of CO2
- Geologic Sequestration of CO2
- Underground Coal Mines

Direct Emitters
CO2 Injection
• In 2012, Reported Direct Emissions totaled 3.13 billion metric tons CO2e, about half of total U.S. greenhouse gas emissions.
The GHGRP covers additional GHGs by requiring suppliers of certain fossil fuels and industrial gases to report.

Some GHGs are reported by the fuel supplier and emitting facility.

CO2 received for injection is also reported.
US GHGRP Requirements
Reporting Threshold

• **All-In Category:**
  Any source category listed under Table A-3 of rule, including: Adipic Acid, Aluminum, Cement, Lime, EGUs (Part 75), Petroleum Refineries etc...

• **Threshold Category:**
  Any facility that emits **25,000 metric tons CO2e** or more per year from:
  - All applicable source categories (Table A-4) at single facility (i.e. Ferroalloy production, Glass production, Iron & Steel etc...)
  - Stationary fuel combustion units
  - Miscellaneous use of carbonates

• **Suppliers:**
  Any supplier listed under A-5, including: Petroleum products, Coal-Based Liquids, Industrial GHGs
Threshold Determination (2008 estimate)

- Emissions coverage is for downstream sources only. Including upstream sources increases emissions coverage by 30-35%.
- Facility coverage represents both upstream and downstream sources.

**Downstream Facility and Emissions Coverage by Threshold**

- **Facilities Covered**
  - 59,587 facilities at a threshold of 1,000 mtCO₂e, covering 56.0% of facilities.
  - 20,765 facilities at a threshold of 10,000 mtCO₂e, covering 55.5% of facilities.
  - 13,205 facilities at a threshold of 25,000 mtCO₂e, covering 54.9% of facilities.
  - 6,598 facilities at a threshold of 100,000 mtCO₂e, covering 52.4% of facilities.

- **% of National Emissions Covered**
  - 56.0%
  - 55.5%
  - 54.9%
  - 52.4%

Threshold in mtCO₂e
- Facilities Covered
- Emissions Covered
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 Not Reported?

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

- Methodologies developed from extensive review of existing GHG programs
- Tiering approach used in many sub parts (lower order to higher order)
- Example: Stationary Combustion employs 4 Tier Approach
- In addition to calculation methodologies, the GHG Rule Requires:
  - Adherence to and reference of Standards (ASTM, ISO etc...)
  - Calibration requirements
  - Missing data procedures
  - Extensive recordkeeping requirements
Recordkeeping Requirements

• 3 year retention
• Format suitable for inspection/review
• Include
  – List of units, operations, processes, activities
  – Data used to calculate GHG emissions
  – GHG emissions calculations and methods used
  – Documentation for site-specific emissions factors
  – Results of any required HHV, carbon content analyses
  – Facility operating data or process information
  – Missing data computations (+duration, cause, actions)
  – Written GHG Monitoring Plan
Data Collection: e-GGRT

• EPA’s electronic Greenhouse Gas Reporting Tool (e-GGRT)
• Web-based application for facilities/suppliers to report directly to EPA
• For Reporting Year 2010, included 29 individual sub-part modules, each with self-guided web forms
• Additional 12 Source Category modules added in mid-2012
• Also includes option for **direct data upload** via XML
• Annual Reports are electronically submitted and **CROMERR** Compliant
High Quality Data begins with High Quality Submissions

- Real Time Data Quality Feedback
- Comprehensive GHGRP Help Site
  - www.ccdsupport.com
- Context-Sensitive Help within e-GGRT
- Staffed Help Desk
- Multi-Tier Ticket Triage
  - Received and resolved over 3,000 tickets during RY2010 Reporting Season
- Training Webinars
  - Part 98 overviews, e-GGRT overviews, registration, testing and subpart webinars
- Beta Testing
  - e-GGRT Sandbox
Direct Use

- Replace the entire estimate - e.g., categories where the Reporting Program has complete coverage
  - Semiconductor Manufacture, Magnesium Production and Processing

Indirect Use for Calculations (Non-CBI)

- Develop a more accurate national emission factor based on plant measurements
  - Landfills, Wastewater Treatment (Industrial), Natural Gas Systems, Petroleum Systems
- Disaggregate national estimates to show more detail: Industrial sector fossil fuel combustion

Indirect Use for QA/QC

- General QA/QC on a national estimate
For More Information

• Part 98 (U.S. GHG Reporting Rule) Info:
  – www.epa.gov/ghgreporting

• Published Data:
  – ghgdata.epa.gov

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