

Overview and Lessons Learned

U.S. GHG Reporting Program



Kong Chiu

U.S. EPA

World Bank Partnership for Market Readiness

Regional GHG MRV Training Workshop

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Presentation Outline



- U.S. Greenhouse Gas Reporting Program Basics
- Regulatory Process
- Programmatic Requirements
- Data Collection and Management
- RY2012 Data Results



US GHGRP Basics



- 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



- 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

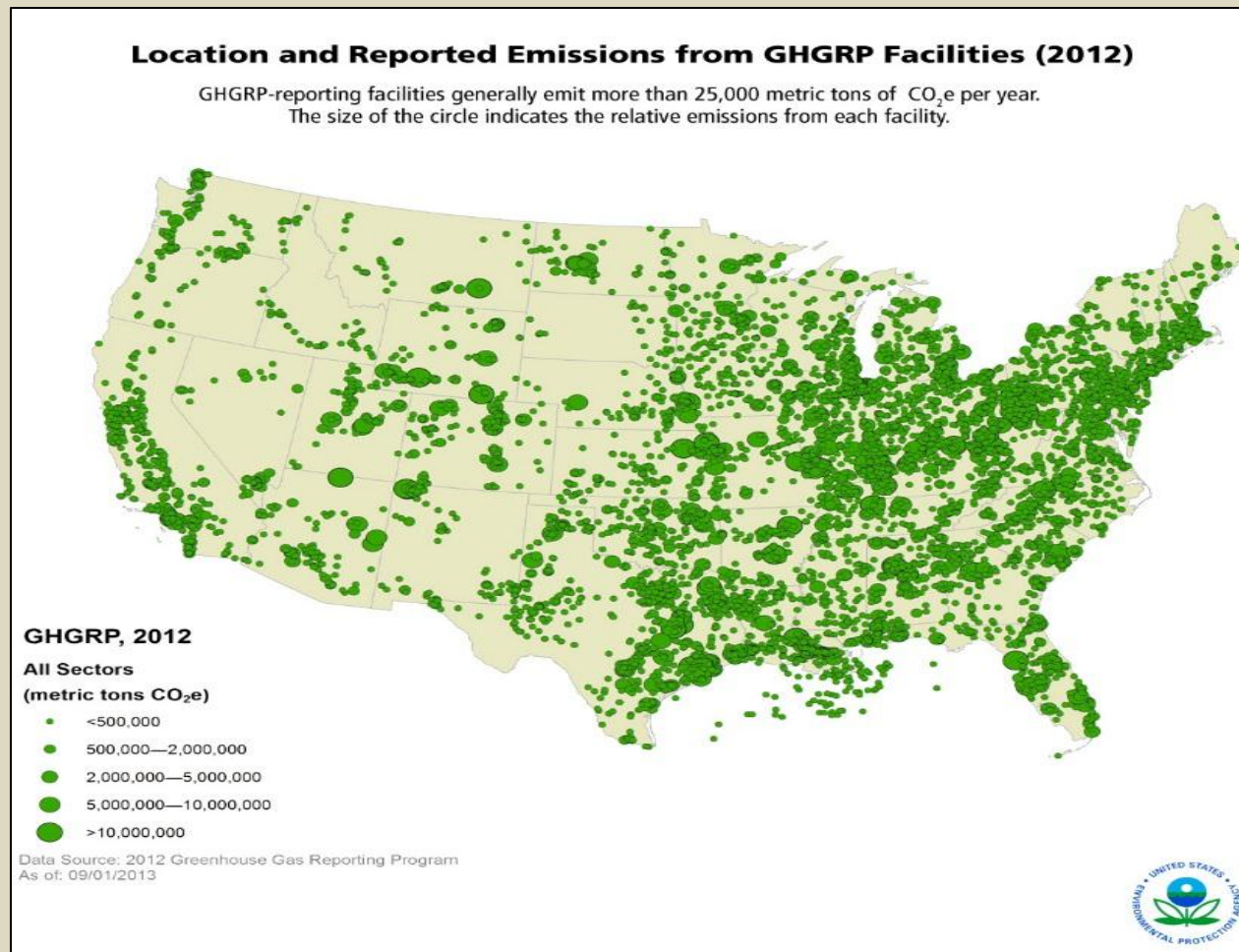


Power	Refining & Petrochem.	Other Chemicals	Combustion	Waste	Metals	Minerals	Pulp & Paper	High GWP Gases
<ul style="list-style-type: none"> -Electricity Generation - Electrical Equipment Mfg. - Use of Electrical Equip. 	<ul style="list-style-type: none"> - Petroleum Refineries - Petrochem. Production 	<ul style="list-style-type: none"> - Adipic Acid -Ammonia -Hydrogen Production - Nitric Acid - Titanium Dioxide - Phosphoric Acid 	<ul style="list-style-type: none"> - Stationary Combustion 	<ul style="list-style-type: none"> - Municipal Landfills - Industrial Waste Landfills - Waste Water Treatment 	<ul style="list-style-type: none"> - Aluminum - Ferroalloy - Iron & Steel - Lead - Zinc - Magnesium - Silicon Carbide 	<ul style="list-style-type: none"> - Cement - Glass - Lime - Misc. Carbonate Use - Soda Ash Production 	<ul style="list-style-type: none"> - Pulp & Paper 	<ul style="list-style-type: none"> - Fluorinated GHG Prod. - HCFC-22 Prod./HFC-23 Destruction - Electronics Mfg. - Pre-Charged Equip. Imp./Exp. - Suppliers of Industrial Gases
Petroleum & Natural Gas Systems – Direct Emissions			Fuel Suppliers			Carbon Capture & Sequestration		Mining
<ul style="list-style-type: none"> - Onshore Production - Offshore Production - Natural Gas Processing - Natural Gas Transmission/Compression - Natural Gas Distribution - Underground Natural Gas Storage - Liquefied Natural Gas Storage - Liquefied Natural Gas Import/Export 			<ul style="list-style-type: none"> - Coal based Liquid Suppliers - Petroleum Product Suppliers -Natural Gas Distribution Companies -Natural Gas Liquids Suppliers 			<ul style="list-style-type: none"> - Suppliers of CO2 - Injection of CO2 - Geologic Sequestration of CO2 		<ul style="list-style-type: none"> - Underground Coal Mines
								<p style="text-align: right;">Direct Emitters Suppliers CO2 Injection</p>

GHGRP Coverage – Direct Emissions



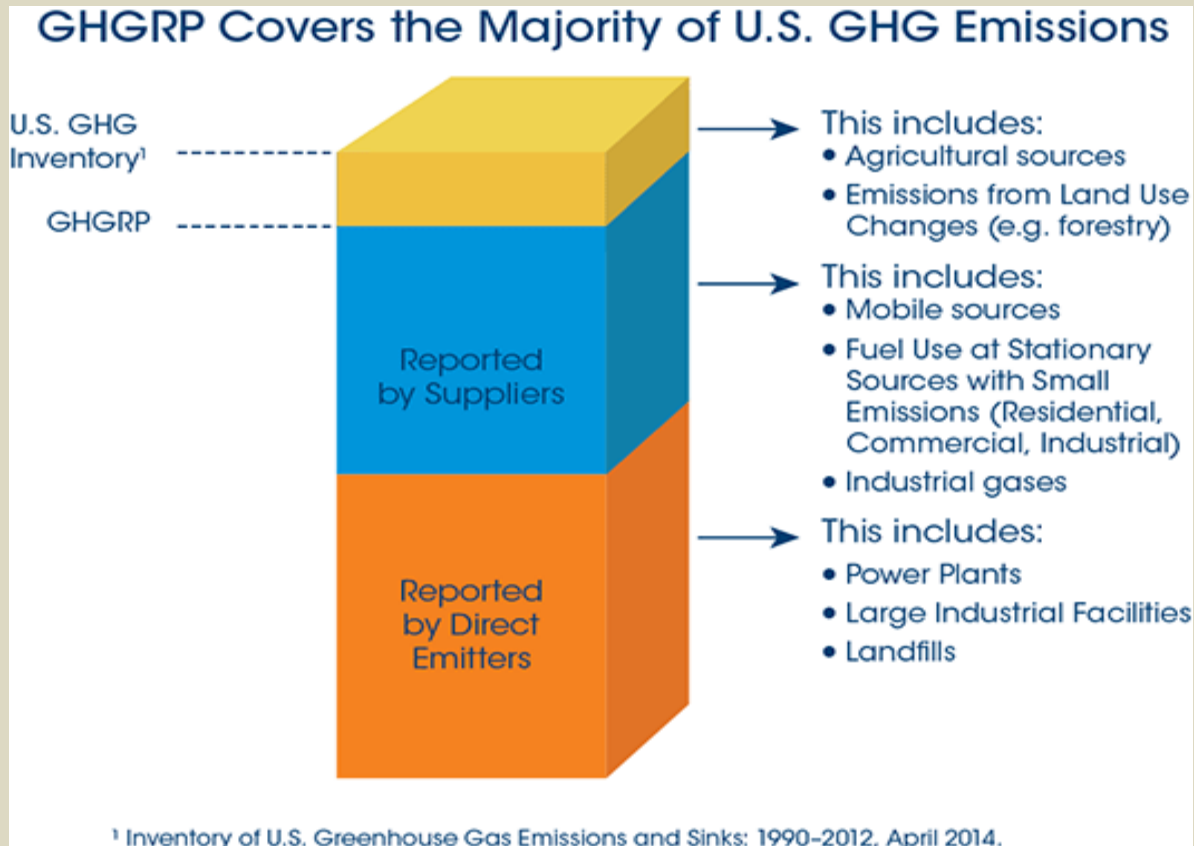
- In 2012, Reported Direct Emissions totaled 3.13 billion metric tons CO₂e, about half of total U.S. greenhouse gas emissions.



GHGRP Coverage vs U.S. Inventory



- 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

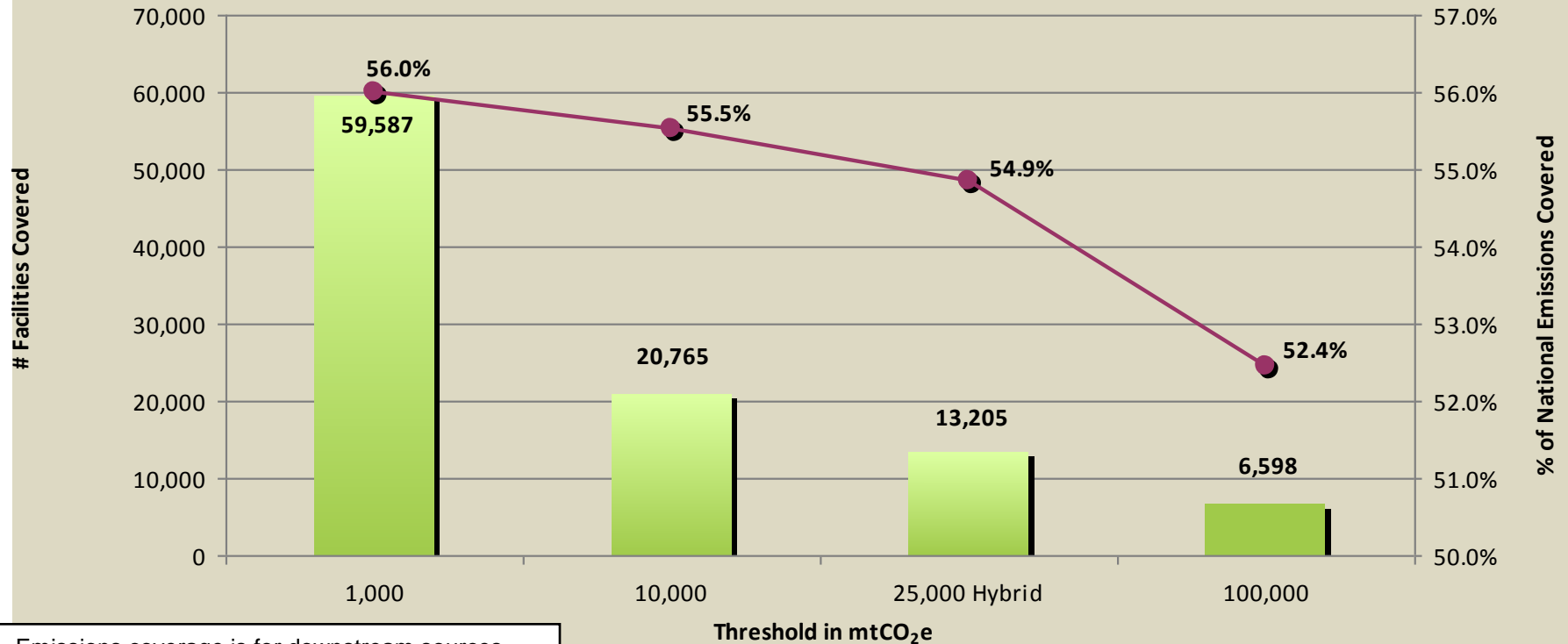


- **All-In Category:**
Any source category listed under Table A-3 of rule, including:
Adipic Acid, Aluminum, Cement, Lime, EGUs (Part 75),
Petroleum Refineries etc...
- **Threshold Category:**
Any facility that emits **25,000 metric tons CO₂e** or more per year from:
All applicable source categories (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)



Downstream Facility and Emissions Coverage by Threshold



• Emissions coverage is for downstream sources only. Including upstream sources increases emissions coverage by 30-35%

• Facility coverage represents both upstream and downstream sources

■ 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 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

- 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

Electronic Reporting



EPA GHG Data System



EPA EnviroFacts:
Serviceable, searchable and
separately hosted copy of non-CBI
dataset.



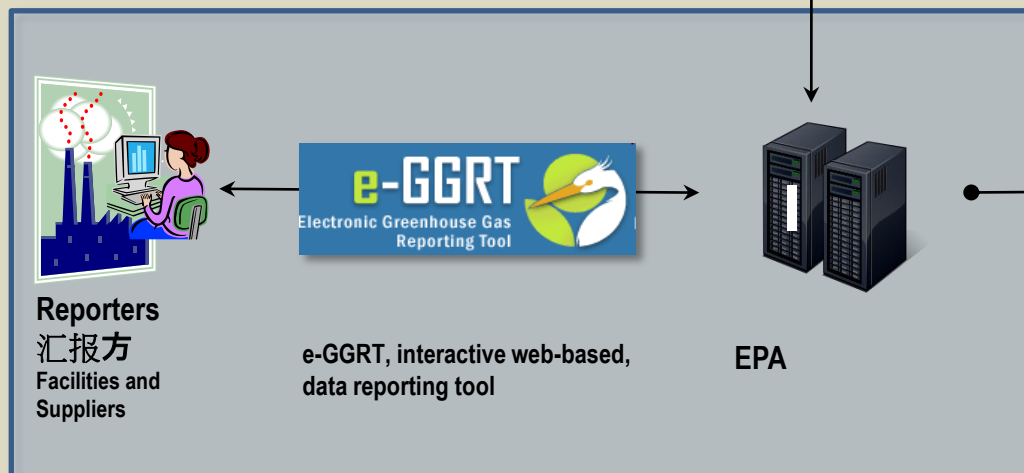
State-Specific Service
Oriented data flow using
EnviroFacts
API



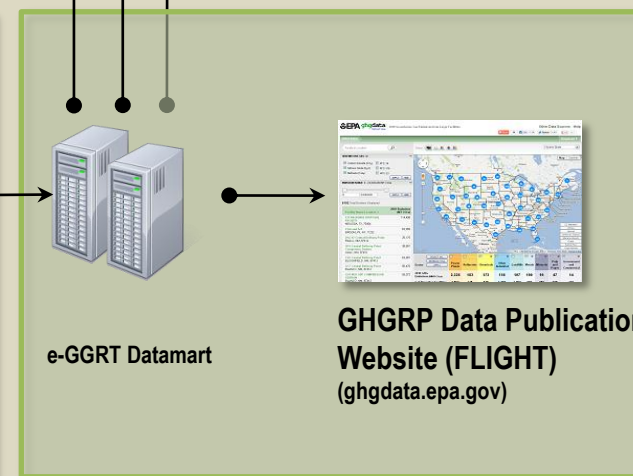
Data Verification
(EPA)



Downloadable XLS, XML &
HTML Data Files



Data Collection



Data Publication



- 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

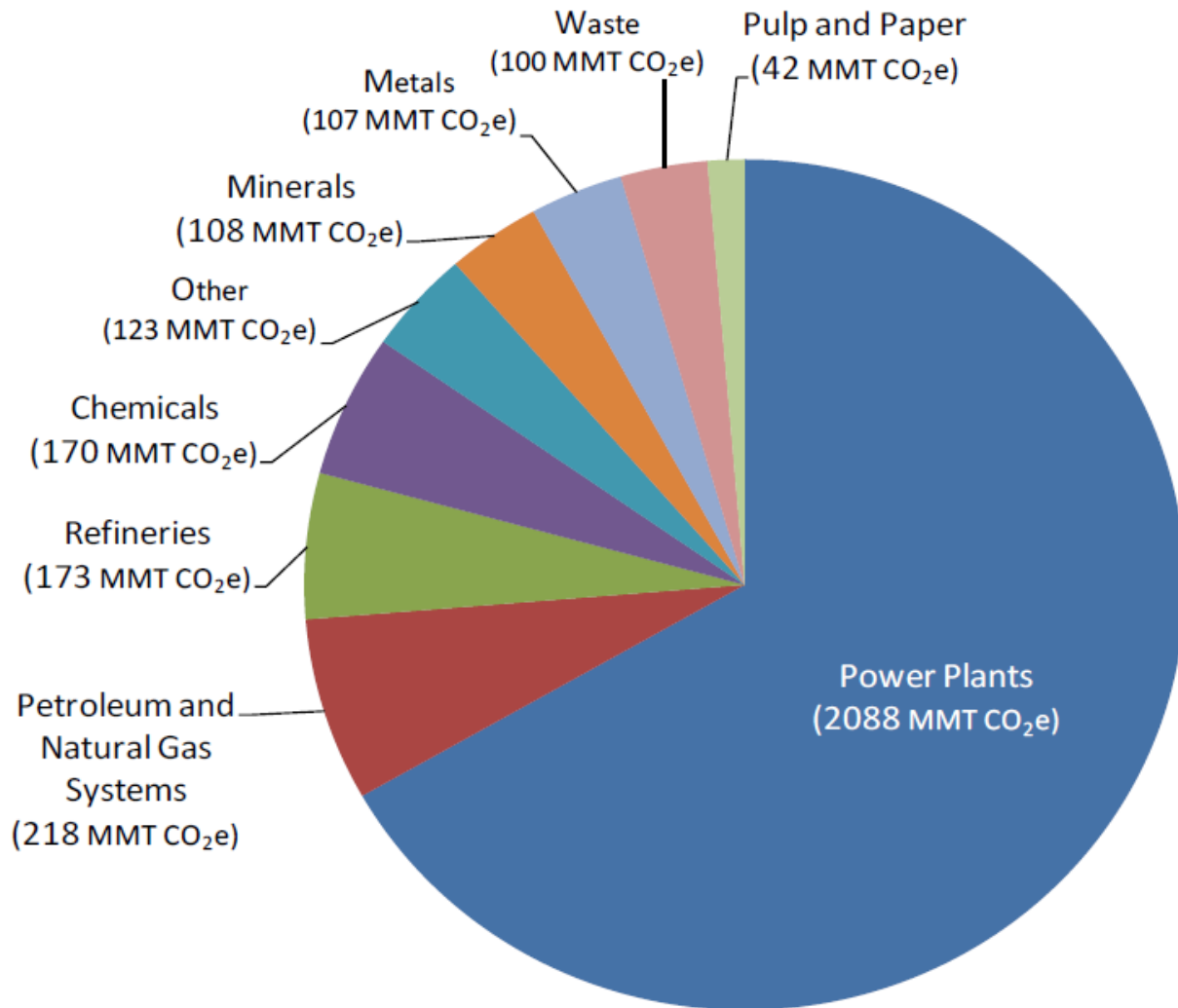
High Quality Data begins with High Quality Submissions



- 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



2012 Reporting Year Data





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

Kong Chiu

US EPA

1200 Pennsylvania Ave NW

Washington, DC 20460 USA

1+202-343-9309

chiu.kong@epa.gov