



Energy & Resources series presents:

New EPA Greenhouse Gas Reporting Requirement: Is Your Company Ready?

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Agenda

Background

GHG reporting: Who's involved?

Overview of EPA mandatory GHG reporting rule

Update on other pending federal GHG legislation

Reporting and technology considerations

Questions and answers

Background

Poll question #1

What is your industry?

- Energy
- Finance
- Manufacturing
- Consumer products
- Software / Technology Vendor
- Other

Background

- **April 2, 2007:** U.S. Supreme Court's decision in *Massachusetts v. EPA*, 549 U.S. 497 (2007), concluded that greenhouse gases (GHG) meet the Clean Air Act definition of an air pollutant and instructed EPA to regulate CO₂ as a pollutant.
- **March 10, 2009:** EPA's proposed GHG reporting rule was signed, in accordance to *FY2008 Consolidated Appropriations Act* (H.R. 2764; Public Law 110–161). EPA issued the rule pursuant to its authority under the Clean Air Act. Proposed rule received over 17,000 written comments.
- **April 17, 2009:** EPA's Proposed *Endangerment and Cause or Contribute Findings* for GHG under the Clean Air Act was signed.
- **September 22, 2009:** EPA's final GHG reporting rule was signed.

GHG reporting: Who's involved?

Poll question #2

Who is primarily responsible for developing the EPA greenhouse gas report(s) within your organization?

- Facility Operations / Management
- Corporate Environment, Health, and Safety
- General Counsel
- Finance
- Other
- I don't know

GHG reporting: Who's involved?

Historically ... EH&S

- Responsibility for GHG inventory and reporting has historically been with the Environmental Health & Safety (EH&S) function and at the facility or business unit levels.

Responsibility changes ... to CFO / Controller / Finance

- With the potential for carbon allowances and offset credits to be traded in ways similar to other commodity instruments (under the proposed cap-and-trade program), requirements for internal controls may be comparable to existing internal control requirements for financial data and reporting.
- Such controls may be required to meet future commodity and carbon market regulations, as well as management and disclosure requirements under Sarbanes-Oxley.

Overview of EPA mandatory GHG reporting rule

Overview of EPA GHG reporting rule

Key Elements	Proposed Requirements
Gases Covered	Six Kyoto GHGs (CO ₂ , CH ₄ , N ₂ O, SF ₆ , HFC, PFC) and other fluorinated gases
Coverage	Approximately 10,000 facilities. ~85% of GHG emitted in the US
Threshold	Generally 25,000 metric tons CO ₂ e per year, but also “all in” approach
Frequency	Annual
Compliance	Data collection begins January 1, 2010 First annual reports to be submitted to EPA on March 31, 2011 for 2010.
Verification	EPA
Record Retention	Documentation must be retained for 3 years including: <ul style="list-style-type: none">• Data used to calculate the GHG emissions for each unit, operation, process, and activity, categorized by fuel or material type• Documentation of the processes and methods used to collect data for the GHG emissions calculations• Documentation of GHG emissions calculations and methods used• Identification of key facility personnel responsible for collecting emissions data• Written GHG Monitoring Plan• Annual GHG reports• Missing data computations• Results of all required certification and quality assurance test of monitoring systems used to provide data for the annual GHG report

Applicability: What facilities must report?

Table 1 *

(Any facility that contains any source category listed below)

Adipic Acid Production
 Aluminum Production
 Ammonia Manufacturing
 Cement Production
 Electricity Generation
 HCFC-22 Production
 HFC-23 Destruction Processes
 Lime Manufacturing
 Manure Management Systems
 Municipal Solid Waste Landfills
 Nitric Acid Production
 Petrochemical Production
 Petroleum Refineries
 Phosphoric Acid Production
 Silicon Carbide Production
 Soda Ash Production
 Titanium Dioxide Production

Table 2 *

(Any facility that contains any source category listed below and that emits 25,000 MTCO₂e or more annually in combined emissions)

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

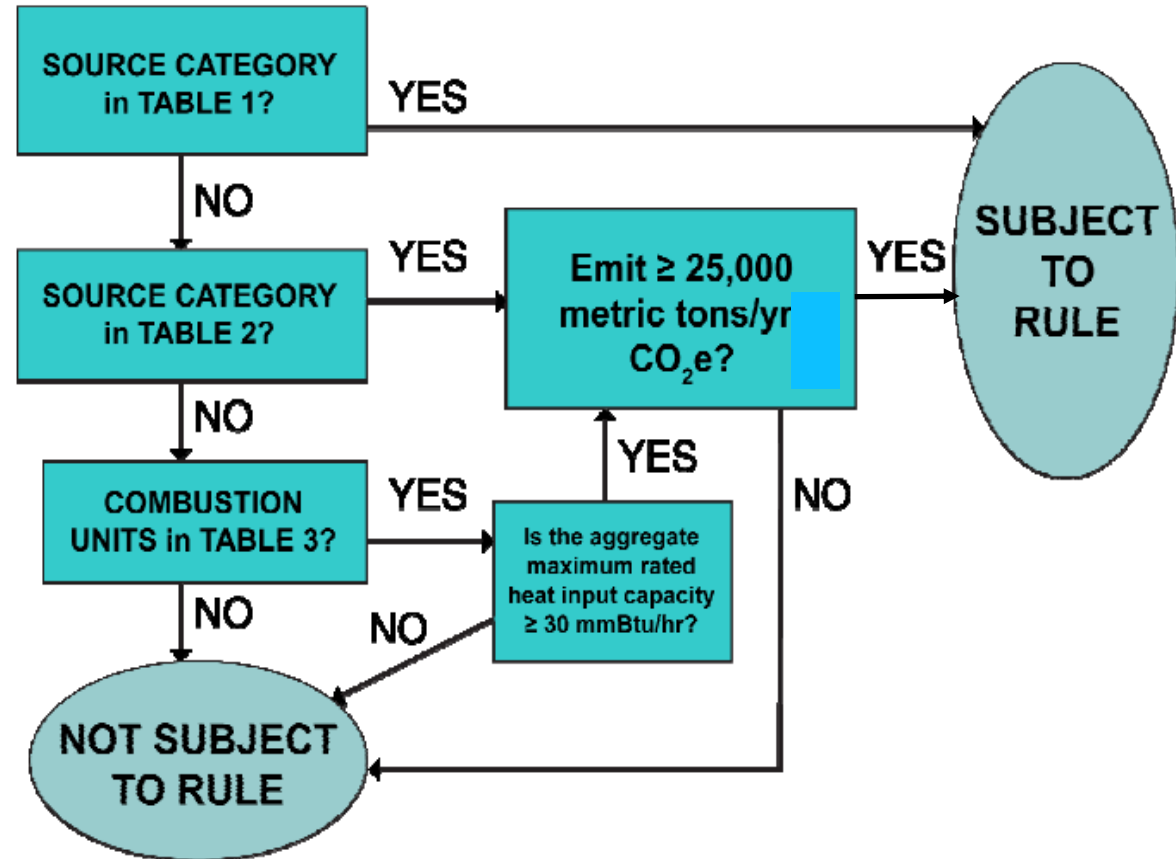


Table 3 *

(Any facility with aggregate maximum rated heat input capacity of 30 mmBtu/hr or greater)

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

* Source: U.S. Environmental Protection Agency Final Rule Mandatory Reporting of GHG/ October 2009 (56266-56267)
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Applicability: What suppliers must report?

*Table 4** and *Table 5** in the EPA GHG reporting rule describe suppliers of fossil fuels and industrial GHG that must report.

These suppliers include:

- All producers of:
 - Petroleum products
 - Coal-based liquid fuels
 - Industrial GHGs (Fluorinated Gases, Nitrous Oxide, Carbon Dioxide)
- Natural gas and natural gas liquids
 - All natural gas fractionators
 - All local gas distribution companies
- Exporters of 25,000 metric tons CO₂e per year or more
- Importers of 25,000 metric tons CO₂e per year or more

How much is 25,000 metric tons of CO₂e?

- Equivalent to *annual* GHG emissions from:
 - Energy use of approximately 2,300 homes*
 - Approximately 4,600 passenger vehicles*
 - Over 58,000 barrels of oil consumed
 - Burning approximately 130 railcars' worth of coal*
 - Approximately 1 million propane cylinders* used for home BBQs
- Majority of commercial building owners not likely to meet reporting threshold

Assumptions and Notes:

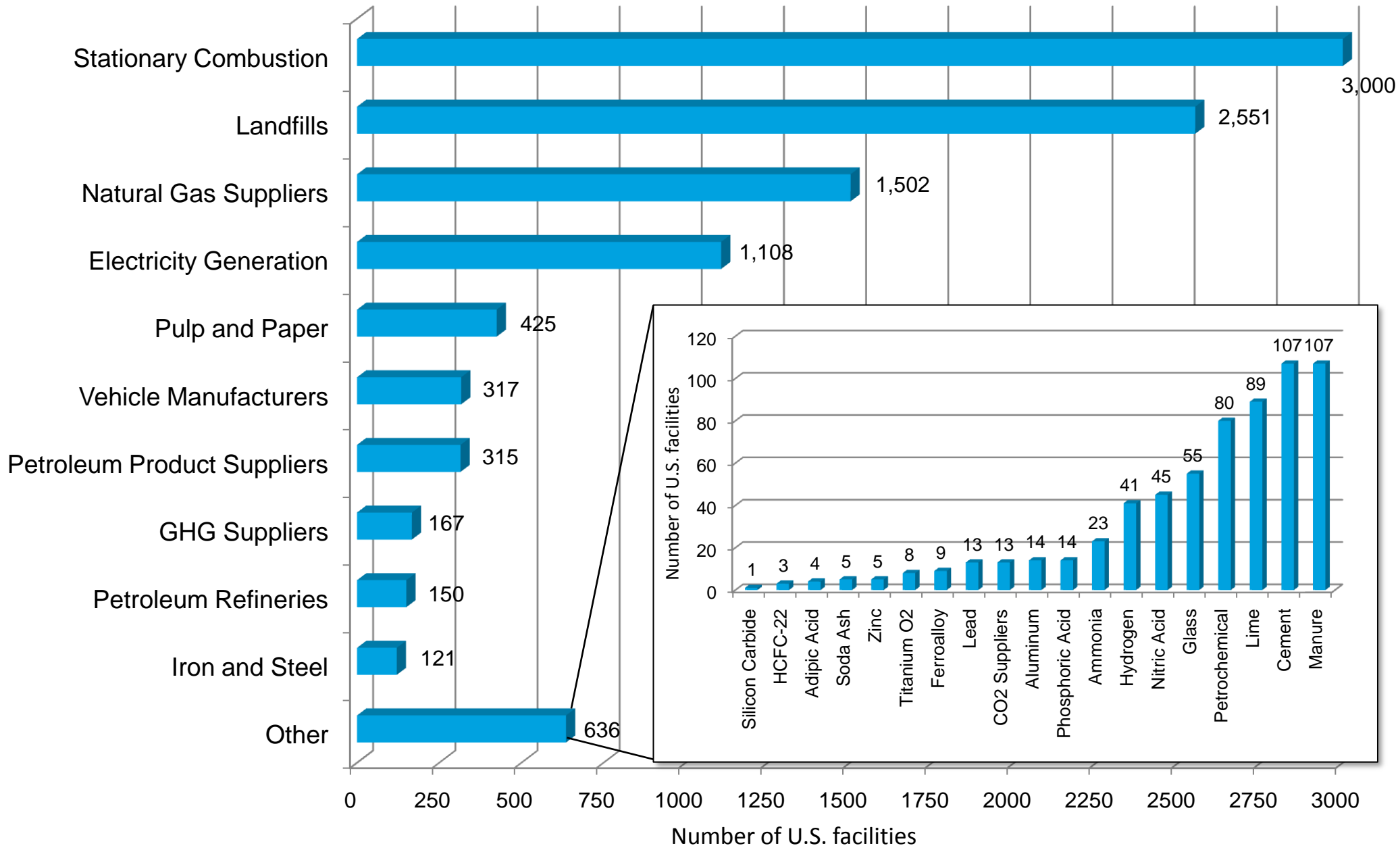
* Energy use of approximately 2,300 homes - assumes the following average energy consumption by each single-family home: 11,965 kWh of delivered electricity, 52.429 MMBtu of natural gas, 57.3 gallons of fuel oil, 46.6 gallons of liquid petroleum gas, and 2.6 gallons of kerosene.

* 4,600 passenger vehicles - assumes weighted average combined fuel economy of cars and light trucks combined of 19.7 miles per gallon and average vehicle miles traveled of 11,856 miles per year.

* Railcar – Assumes that the amount of coal in an average railcar to be 100.19 short tons, or 90.89 metric tons.

* Propane cylinders vary with respect to size - for the purpose of this equivalency calculation, a typical cylinder for home use was assumed to contain 18 pounds of propane.

Approximately 10,000 facilities will be covered



Source: U.S. Environmental Protection Agency Final Rule Mandatory Reporting of GHG/ October 2009

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How does EPA GHG reporting rule compare?

Key Elements	EPA GHG Reporting Rule	EPA Climate Leaders Program	The Climate Registry	Western Climate Initiative (WCI)
GHG Accounting & Reporting Principles	Selected elements from CAA, WRI/WBCSD GHG protocol	WRI/WBCSD GHG protocol	WRI/WBCSD GHG protocol, ISO 14064-1, CCAR, EPA Climate Leaders	WRI/WBCSD GHG protocol, ISO 14064-1
Reporting Entity	Facility-based reporting. Corporate for suppliers.	Parent company reports subsidiaries	Parent company reports subsidiaries	Facility-based reporting. Corporate for suppliers.
Reporting Threshold	25,000 metric tons CO ₂ e per year	N/A	10,000 metric tons CO ₂ e per year	10,000 metric tons CO ₂ e per year
Geographical Boundaries	Emissions in the U.S.	Emissions in the U.S.; International optional	Emissions in Canada, Mexico and the U.S.	Emissions in WCI jurisdiction; first-seller
Organizational Boundaries	Owner/Operator	Control or equity share	Control (with equity disclosure) or equity share	Owner/Operator
Operational Boundaries	Scope 1. Scope 3 for suppliers.	Scope 1 and 2. Scope 3 is optional (proposed).	Scope 1 and 2. Scope 3 is optional.	Scope 1 and 2. Scope 3 is optional.
Verification	Self-certification with EPA verification	EPA contractors audit. 3 rd party verification proposed	3 rd party verification	3 rd party verification
Program	Mandatory	Voluntary	Voluntary	Mandatory

CAA: Clean Air Act; WRI/WBCSD: World Resource Institute / World Business Council for Sustainable Development *GHG Protocol Corporate Accounting and Reporting Standard (Revised Edition)*; ISO: International Organization for Standardization; CCAR: The California Climate Action Registry *General Reporting Protocol* and various industry-specific protocols;

What are the reporting requirements of the EPA GHG reporting rule?

- Subpart A: General Provisions
 - Applicability provisions for facilities and suppliers
 - 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
- Special Provisions for 2010

What documents need to be retained in accordance with the EPA GHG reporting rule?

Each facility and supplier must retain the following records for *three years* in electronic or hardcopy format:

- A list of all units, operations, processes, and activities for which the reporter calculates GHG emissions
- All data used to calculate the GHG emissions for each unit, operation, process, and activity, categorized by fuel or material type
- Annual GHG reports
- Missing data computations
- A written GHG monitoring plan
- All required certification and QA test results
- Maintenance records for monitoring instrumentation
- Any other data specified in any applicable subpart of the rule

Poll question #3

Is your company prepared to start collecting greenhouse gas emissions data on January 1, 2010 and to submit a report to the EPA on March 31, 2011?

- Yes
- No
- I don't know
- Not applicable

When can facilities/suppliers cease reporting?

EPA final rule 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 CO₂e/year
- Cease reporting after 3 consecutive years of emissions below 15,000 metric tons CO₂e/year
- Cease reporting if the GHG-emitting processes or operations are shut down

Update on other pending
federal GHG legislation

Proposed U.S. federal GHG legislation

Waxman Markey H.R. 2454

American Clean Energy and Security Act of 2009

Passed the House with a 219-to-212 vote on June 26, 2009:

- Cap and trade program is addressed in *Title III—Reducing Global Warming Pollution*
- Reductions of **17% by 2020** and 83% by 2050, versus 2005 emissions
- Apply to facilities emitting over 25,000 tons of CO₂e
- Sectors phased in:
 - Refineries and power generation 2012
 - Energy intensive industries 2014
 - Natural Gas—LDC 2016
- **80% of allowances** freely allocated in early years
- Offsets capped at 2 billion tons/year (**50/50 US & International**)

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Clean Energy Jobs and American Power Act

Introduced on September 30, 2009:

- Cap and trade program is addressed in *Division B—Pollution Reduction and Investment (PRI)*
- Reductions of **20% by 2020** and 83% by 2050, versus 2005 emissions
- Apply to regulated facilities emitting over 25,000 tons of CO₂e
- Sectors phased in:
 - Refineries and power generation 2012
 - Energy intensive industries 2014
 - Natural Gas—LDC 2016
- **75% of allowances** freely allocated in early years
- Offsets capped at 2 billion tons/year (**three-quarters US & one-quarter International**)

If Congress does not pass a climate change bill, GHG emissions may be regulated under the Clean Air Act.

Canadian Federal Regulatory Activity

The Canadian government wants to align itself with the proposed U.S. federal cap-and-trade program to the extent possible, but will likely have a technology fund and no auction. Following are possible provisions of a Canadian program:

- GHG reduction target of 20% by 2020 from a 2006 baseline
- Starts in 2011 but the compliance targets are effective 2012
- High level policy may be released pre-Copenhagen
- Sectoral targets and allocation will depend on U.S. announcements
- Offset guidance documents have been released for comment
 - Guide for Protocol Developers (August 2008)
 - Program Rules and Guidance for Project Proponents
 - Verification of greenhouse gas reductions from projects

How does U.S. federal GHG legislation relate to EPA mandatory GHG reporting rule?

- GHG emissions data reported under the EPA mandatory GHG reporting rule – along with reporting under existing mandatory and voluntary GHG programs – will likely serve as the foundation for a federal carbon cap-and-trade program
 - Accurate and reliable emissions data are especially important if the reported emissions are used to determine compliance with a federal cap-and-trade program because the reported emissions will be reconciled with allowances to determine program compliance
 - Public regulated entities are expected to have significant assets and liabilities on their financial statements that are derived directly from measured emissions

Reporting and technology considerations

Poll question #4

Will your company be seeking third party verification for your EPA greenhouse gas report?

- Yes
- No
- I don't know

Carbon reporting considerations

- **Development of QA/QC protocols and self-certification:** EPA mandatory GHG reporting rule requires self-certification with EPA verification. To verify completeness and accuracy of reported GHG emissions, EPA may review certification statements and conduct a comprehensive review of GHG reports and periodic audits of selected reporting facilities.
- **Internal controls requirements** for emissions data should be robust and match existing internal control requirements for financial data and reporting.
- **Data management** should be streamlined to facilitate efficiency and nimbleness in reporting and data integrity.
- **Automation & scalability** will be key in adapting to multi-jurisdictional reporting and various disclosure requirements.
- **“One version of the truth” across the entity** as emissions data will likely serve as foundation for carbon markets, and compliance with financial, regulatory, and management reporting requirements.

Carbon technology considerations

- Increased spending on carbon-related activities, driven by EPA mandatory GHG reporting and increasing number of entities participating in voluntary GHG reporting
- Initial development of GHG inventories and GHG reporting is commonly accomplished through the use of simple available software tools (e.g., Microsoft Excel or Access)
- As carbon markets develop, requirements for internal controls for carbon data may be comparable to existing internal control requirements for financial data and reporting
- More robust carbon technology solutions and capabilities may be needed to support these internal control requirements
- Consideration for integration of carbon inventory projects with carbon trading solutions continue to be a focus of for organizations

Carbon management technology trends

- Along with increased spending on carbon, there is anticipated corresponding increased investment by vendors to strengthen GHG / carbon application functionality
- Enterprise Environment Management Information System solutions continue to emerge
- Two opposite trends happening at the same time
 - Vendor consolidation among traditional EH&S players
 - Fragmentation caused by a growth in a large number of start-ups offering range of “carbon” solutions
- Venture capital and other funding are financing the growth of start-ups
- Number of vendors offering carbon management technology solutions have grown dramatically
- Existing Commodity Trading and Risk Management vendors are potential players in the carbon trading technology space

Poll question #5

What type of solution has your company developed for EPA greenhouse gas emissions reporting?

- Primarily Microsoft Excel and/or Access-based solution(s)
- Implemented Emissions Monitoring & Information System
- No reporting solution in place
- I don't know
- Not Applicable

Questions & Answers

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Nuclear Renaissance: Making the Business Case for New Nuclear Plants

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