

# TNI / NEMC

## Green House Gas Rule and its Implications

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# Presentation Format

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# GHG Rule

## History

- Massachusetts v. EPA, 549 U. S. 497, 127 S. Ct. 1438 (2007) is the basis for promulgation of the GHG rule by EPA
- Petitioned by a Private Group of Organizations initially, upon denial of their petition by EPA, the State of MA intervened along with other state and local governments
- § 202(a)(1) of the CAA requires EPA by regulation to prescribe standards applicable to the emission of any air pollutant from any class of new motor vehicles.....which causes the endangerment of public health or welfare...
- 42 U.S.C. § 7521(a)(1) defines “air pollutant” to include “any air pollution agent.....including any physical, chemical....substance.....emitted into the ambient air”

# GHG Rule

## History

- The court cited that,  
“When Congress enacted these provisions, the study of climate change was in its infancy.<sup>8</sup> In 1959, shortly after the U. S. Weather Bureau began monitoring atmospheric carbon dioxide levels, an observatory in Mauna Loa, Hawaii, recorded a mean level of **316 ppm**. This was well above the highest carbon dioxide concentration—no more than **300 ppm**—revealed in the 420,000-year-old ice core record.<sup>9</sup> By the time Congress drafted § 202(a)(1) in 1970, carbon dioxide levels had reached **325 ppm**. <sup>10</sup>”[549 U.S. 507]

# GHG Rule

- THE GHG RULE (40 CFR Part 98) IS A EPA RULE NOT A STATE RULE
- REPORTING IS DIRECT TO EPA
- STATES ARE NOT PREEMPTED BY EPA - they can have their own program if they intended to protect the “health and welfare” of their people
- Texas Challenged the EPA with regards to its authority on the enforcement of the GHG rule
- As of January 14, 2011 the D.C. Appeals Court denied their challenge and not sure if Texas appealed to the U. S. S.Ct.
- My opinion is the ruling in **Massachusetts vs. EPA** will stay for a long time to come

# GHG Rule

- Mandatory Reporting of Greenhouse Gases
  - Final rule published on 10/30/09 (original rule)
  - Monitoring effective 01/01/2010 (original rule)
  - Reporting by March 31, 2011 (original rule)  
extended to September 30, 2011 on March 18, 2011
  - Some Industrial Categories were added to the requirement in 2010
  - The newly added categories are required to start monitoring Jan 1, 2011 and report on March 31, 2012
- Total of 41 source categories come under the GHG reporting rule

# GHG Rule

- Directive of Rule
  - Requires the reporting of annual emissions of carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), sulfur hexafluoride (SF<sub>6</sub>), hydrofluorocarbons (HFCs), perfluorochemicals (PFCs), and other fluorinated gases (e.g., nitrogen trifluoride, hydrofluorinated ethers [HFEs])
  
- Affected Industries
  - A broad spectrum of industries
  - Some industries are required to report irrespective of volume
  - Some industries only report if their emissions exceed 25,000 metric tons of GHG annually

# Criteria for Reporting Under the GHG Rule

- Once subject to the rule reporters must continue to submit GHG reports annually. A reporter can cease reporting if:
- If annual amount of CO<sub>2</sub> equivalents reported is less than 25000 MT/Y for 5 years; or
- If annual amount of CO<sub>2</sub> equivalents reported is less than 15000 MT/Y then must monitor for 3 years
- If a scenario arises such that even though one fulfills the above conditions and starts emitting above the limits at a later date they must resume the monitoring/reporting (forces monitoring no matter what).



# Who Has To Report and The Starting Year ?

- C - Stationary Fuel Combustion Sources (2010)
- D – Electricity Generation (2010)
- E – Adipic Acid Production (2010)
- F – Aluminum Production (2010)
- G – Ammonia Manufacturing (2010)
- H – Cement Manufacturing (2010)
- I – Electronics Manufacturing (2011)
- J – Ethanol Production (N/A)
- K – Ferroalloy Production (2010)
- L – Fluorinated Gas Production (2011)
- M – Food Processing (N/A)
- N – Glass Production (2010)
- O – HCHC-22 Production & HFC-23 Destruction (2010)
- P – Hydrogen Production (2010)
- Q – Iron and Steel Production (2010)
- R – Lead Production (2010)
- S – Lime Manufacturing (2010)
- T – Magnesium Production (2011)
- U – Misc. use of Carbonate (2010)
- V – Nitric Acid Production (2010)
- W – Petroleum and Natural Gas Systems (2011)
- X – Petrochemical Production (2010)
- Y – Petroleum Refineries (2010)
- Z – Phosphoric Acid Prod. (2010)

# Who Has To Report and The Starting Year ?

- AA – Pulp and Paper Manufacturing (2010)
- BB – Silicon Carbide Prod. (2010)
- CC – Soda Ash Manufacturing (2010)
- DD – Use of Electric Transmission and Distribution (2011)
- EE – Titanium Dioxide Prod. (2010)
- FF – Underground Coal Mines (2011)
- GG – Zinc Prod. (2010)
- HH – Municipal Solid Waste Landfills (2010)
- II – Industrial WW Treatment (2011)
- JJ - Manure Management (EPA will not be implementing due to funding restriction for this activity)
- KK – Suppliers of Coal (N/A)
- LL – Suppliers of Coal based Liquid Fuels (2010)
- MM – Suppliers of Petroleum Products (2010)
- NN – Suppliers of Natural Gas and NGL's (2010)
- OO – Suppliers of Industrial GHGs (2010)
- PP – Suppliers of CO2 (2010)

# Who Has To Report and The Starting Year ?

- QQ - Imports and Exports of Equipment Pre-charged with Fluorinated GHGs or containing Fluorinated GHGs in closed cell foams (2011)
- RR – Carbon Dioxide Injection and Geologic Sequestration (2011)
- SS – Manufacture of Electric Transmission and Distribution Equipment (2011)
- **TT – Industrial Waste Landfills (2011)**
- UU – Injection of Carbon Dioxide (2011)

# Industries Which Must Report

- Adipic Acid Production
- Aluminum Production
- Ammonia Manufacturing
- Cement Production
- Electricity Generation facilities that report CO<sub>2</sub> emissions year round through 40 CFR part 75
- 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 HFC23 per year
- Lime Manufacturing
- Municipal Solid Waste Landfills that *generate CH<sub>4</sub> in amounts equivalent to 25,000 metric tons CO<sub>2</sub>e per year or more*
- Soda Ash Production

# Industries Which Must Report

- Manure Management Systems with combined CH<sub>4</sub> and N<sub>2</sub>O emissions in amounts equivalent to 25,000 metric tons CO<sub>2</sub>e per year or more
- Nitric Acid Production
- Petrochemical Production
- Petroleum Refineries
- Phosphoric Acid Production
- Silicon Carbide Production
- Titanium Dioxide Production
- STATIONARY COMBUSTION SOURCES

# Industries Which Must Report If >25,000 Metric Tons Are Emitted

- Ferroalloy Production
- Glass Production
- Hydrogen Production
- Iron and Steel Production
- Lead Production
- Pulp and Paper Manufacturing
- Zinc Production
- Boilers
- Stationary Internal Combustion Engines
- Process Heaters Combustion
- Turbines
- Other Stationary Fuel Combustion Equipment

# Fossil Fuel Suppliers Which Must Report

- Coal-based Liquid Fuels: All producers. Importers and exporters above a threshold
  - Natural Gas and Natural Gas Liquids: All natural gas fractionators and all local distribution companies
  - Petroleum Products: All producers. Importers and exporters above a threshold.
- 
- \*Report annual quantity of fuel supplied into the economy and the emissions associated with the complete oxidation of the fuel

# GHG Suppliers Which Must Report

- Fluorinated Gases
  - Nitrous Oxide
  - Carbon Dioxide
- 
- \*Report annual quantity of each gas supplied into the economy and the emissions associated with their complete release



# GHG Rule

- What must be reported
- **Suppliers**
  - Annual metric tons of CO<sub>2</sub> equivalents of supplied GHGs
  - Annual metric tons of each GHG supplied
- **Direct Emitters**
  - Metric tons of CO<sub>2</sub> equivalents emitted annually for facility
  - Annual GHG emissions in metric tons of each source category located in the facility
  - Unit or process level emissions as applicable based on source category

# GHG Rule - Reporting

- Methods
  - Calculation utilizing default factors supplied in rule and process knowledge or records
  - **Direct Measurements**
  - **NOTE: MOST INDUSTRIES ARE USING CALCULATIONS....VERY FEW PERFORM DIRECT MEASUREMENTS**

# GHG Rule - Reporting

- No 3<sup>rd</sup> party audit requirements unlike the LDAR program
- Needs facility owner or designee's certification of the reports
- Responsibility for the reporting still lies with the owner of the facility
- All records must be maintained for 3 years
- All reporting must be filed electronically (electronic Greenhouse Gas reporting Tool -eGGRT)
- Registration to report has been extended to August 1, 2011 by Rule Making on March 18, 2011

# GHG Reporting – Confidential Business Information

- Potential harm to businesses due to reporting of required inputs of emissions data
- Required information (which include product compositions, raw materials used, fuel types and quantities, production volumes, and other process-specific information)
- Who is affected? – Subparts C through JJ and RR, SS, and TT and any future subparts
- On July 7, 2011 EPA issued the proposed confidentiality determinations to determine which Part 98 data elements that would be publicly available and which would be kept confidential

# GHG Rule - Reporting

- First round of reporting is due September 30, 2011
- Extended by Rule Making on March 18, 2011
- Does not change deadlines for future years
- You have until October 15<sup>th</sup>, 2011 to correct any errors from the reporting on September 30, 2011
- Next reporting is on March 31, 2012

# Implications of the GHG Rule

- The GHG rule has far reaching implications
  - The rule currently is a US EPA rule. Congress has not passed a bill
  - Legal Actions have already been brought against industry regarding GHG emissions
  - The 5<sup>th</sup> Circuit recently held that plaintiff's alleged injuries were "fairly traceable" to GHG emissions, global warming and Hurricane Katrina (*the ferocity of the hurricane was increased*) & therefore had standing to sue defendant companies who emitted GHG's (*Comer v. Murphy Oil USA*, 585 F.3d 855 (5 Cir.2009)(*appeal dismissed 5 Cir.2010*)(*the court stated that "the appeal may be presented to the United States Supreme Court"*)

# Implications of the GHG Rule

- **Note: The Comer case was decided before the rule went into effect in Jan 2010**
- The 2<sup>nd</sup> Circuit also found standing to bring public nuisance claims against power companies for contributing to global warming (*Connecticut v. Am. Elec. Power Co.*, 582 F.3d 309 (2 Cir.2009)(Plaintiffs: 8 states and NY City)
- On June 20, 2011, the Supreme Ct. ruled in the above case that the Federal Common Law right to seek abatement is displaced as EPA has till 2012 to implement regulations and remanded the case (*Am. Electric Power Co., Inc. V. Conn.* (June 20, 2011), No. 10-174.

# GHG Tailoring Rule

- On April 2, 2010 EPA published its final action regarding its interpretation of the timing of GHG emissions regulation at sources subject to CAA New Source Review of PSD and Title V programs (75 Fed. Reg. 17004, et.seq.,) (will be codified as C.F.R Parts 51, 52, 70 and 71) (also known as Green House Gas Tailoring Rule)
- January 2, 2011 the GHG emissions became subject to regulation under the CAA's PSD and Title V programs (affected sources will be coal fired plants, oil refineries and some other large industrial sources)



# GHG Tailoring Rule

- The largest GHG emitters must obtain permits
- Two step process – Jan 2, 2011 sources increasing GHG emissions by at least 75000 tons per year
- July 1, 2011 additional sources of at least 100000 tons per year and modifications at existing facilities that would result in an increase of 75000 tons per year of GHG emissions (affected sources will include a large number of industries)
- EPA may not regulate sources that emit less than 50000 tons per year before April 30, 2016
- Cases still in court challenging EPA

# Analytical Methods and Certifications

- **Testing Methods**
  - ASTM, AGA, ASM, ASME, GPA and ISO Methods
  - Example methods: ASTM D1945, ASTM D1946, ASTM D5291, ASTM D240, ASTM D3588, GPA 2172, and GPA 2261 (Stack Testing is also part of the GHG scheme)
- **Fuel Gas Measurement**
  - Measurement of fuel volumes is required in calculating CO<sub>2</sub>e
    - Calibration of flow meters
    - Orifice, Turbine, Ultrasonic, Venturi, Flow Nozzle, Wedge, etc.
- **CEMS (Continuous Emission Monitoring Systems)**

# Analytical Methods and Certifications

- Certifications
- Does NELAC want to play in the arena?
- Are AA's trained appropriately or possess knowledge and experience with the methods?
- Are there a lot of labs performing the tests?
- Do we have Auditors trained to perform assessments?
- Should NELAC organize a group to certify hydrocarbon/ASTM labs?
- Are we going to transform ASTM labs to confirm to Environmental lab standards?

# Information Collection Request for Refineries

- **Requesting Agency:** EPA's Office of Air and Radiation
- **Authority:** CAA sections 111(b), 112(d) and 112(f)(6) under CAA section 114
- **Affected entities:** One time information from Petroleum Refineries (Effective date March 28, 2011)
- **ICR Components: 4**
- **Component 1:** Questionnaire with a due date of **May 31, 2011**- General facility information
- **Component 2:** Emissions Inventory with a due date of **June 30, 2011** – Inventory from 2010 to be reported

# Information Collection Request for Refineries

- **Component 3:** Distillation Feed Composition Analysis with a due date of **August 31, 2011** – Analysis of the feed which is fed to each distillation column must be analyzed and composition **determined 3 times with each sampling to occur 30 days apart.**
- **Analyses include:** HHV ASTM D240, Density/API Gravity ASTM D287-92 , Hg, Chlorine(SW 846 or ASTM), Sulfur (ASTM D129-00), Sb, As, Be, Cd, Cr, Co, Pb, Mn, Ni and Se (SW-846 Methods) . Sampling Methods – ASTM D4057 or ASTM D4177.
- **Component 4:** Emissions testing for facilities with Process Units. Stacks and emissions test (3 runs per test method required). Fuel Gas analysis samples – triplicate grab samples for each drum associated with the fuel gas system. To be reported by **August 31, 2011.**

# Information Collection Request for Refineries

- Analyses: 23 page document outlining all the analytical requirements for component 4

# Summary

- EPA was forced to implement the GHG rule
- First GHG report due on September 30, 2011
- The GHG rule has affected Industries both in a regulatory mode as well as legally
- EPA is now tasked with reviewing the data to determine the impacts
- **Are we ready for some action as a certification body? (Don't breathe out you will need to be certified first !!!)**

# References

- <http://www.epa.gov/climatechange/emissions/ghgrulemaking.htm>
- <http://www.epa.gov/climatechange/emissions/CBI.htm>
- Louisiana Bar Journal, February/March 2010 June/July 2010 & August/September, 2010. (volume 57, Number 5, volume 58, Number 1 and volume 58, Number 2)
- The cases and the federal register citations listed in this presentation.
- <https://refineryicr.rti.org/>
- <http://www.epa.gov/climatechange/emissions/CBI.htm>
- <http://www.epa.gov/climatechange/emissions/training.html>