

# Update on Greenhouse Gas Regulations



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## Overview

- What are greenhouse gases?
- Federal Action
- EPA Authority/Interpretation
- Endangerment Finding
- GHG Mandatory Reporting Rule
- Light Duty Vehicle Rule
- Permit Requirements
- GHG Tailoring Rule
- Michigan GHG Regulation

## What are Greenhouse Gases?

- Carbon Dioxide (CO<sub>2</sub>) GWP = 1x (or 1 CO<sub>2</sub>e)
- Methane (CH<sub>4</sub>) GWP = 21x
- Nitrous Oxide (N<sub>2</sub>O) GWP = 298x
- Hydrofluorocarbons (HFC) GWP = 140-11,700x
- Perfluorocarbons (PFC) GWP = 6,500-9,200x
- Sulfur Hexafluoride (SF<sub>6</sub>) GWP = 23,900x

## What Type of Sources Emit Greenhouse Gases?

- CO<sub>2</sub> – Combustion
- CH<sub>4</sub> – Combustion, fermentation
- N<sub>2</sub>O – Sewage & manure management, adipic acid production used in nylon mfg
- HFC – Refrigeration coolant leakage
- PFC – aluminum production (byproduct of smelting), semiconductor mfg
- SF<sub>6</sub> – electric distribution industry (gas is used as insulation, arc quenching, substations)

## U.S. GHG Emissions by Sector

- Majority of GHGs are emitted from electricity consumption (34%), transportation (27%), and industrial sector (21%)

## Federal Action

- Legislative Action through Congress
  - Waxman-Markey Bill
    - The American Clean Energy and Security Act
  - Kerry Boxer Bill
    - Clean Energy Jobs and American Power Act
  - Kerry Lieberman Bill
    - Clean Energy and Climate Bill
    - New bill released May 12, 2010
    - Includes a cap and trade provision for industry
    - Includes the purchase of allowances for fuel producers and importers
- Regulatory Approach through EPA
  - Clean Air Act
  - Mobile and Stationary Sources

#### EPA Authority

- Massachusetts v EPA
- April 2, 2007, the U.S. Supreme Court found that GHGs are air pollutants covered under the Clean Air Act
- Stated EPA can regulate GHGs if:
  - Determine if GHG emissions from new motor vehicles cause or contribute to air pollution
  - Determine if this air pollution may reasonably be anticipated to endanger public health or welfare
  - Determine if insufficient scientific information to make an endangerment finding

#### Permitting Requirements Interpretation

- GHGs are not currently subject to regulation under the Clean Air Act
- Dec 18, 2008 Johnson Memo
  - EPA's interpretation of 'subject to regulation'
    - Excludes pollutants for which only monitoring is required
    - Excludes pollutants that are only regulated in an EPA-approved SIP
    - Includes pollutants subject to an EPA regulation that requires control of emissions
- Feb 15, 2009 – New EPA Administrator agrees to reconsider the Johnson Memo
- Oct 7, 2009 – EPA proposes to maintain the interpretation in the Johnson Memo
- Mar 29, 2010 – EPA's final action on the reconsideration of what is 'subject to regulation'

#### March 29, 2010 - Reconsideration of Interpretation of Regulations that Determine Pollutants Covered by Clean Air Act Permitting

- Affirmed EPA position that permitting is not triggered for a pollutant such as GHGs until a final nationwide rule requires actual control of emissions of that pollutant
- Interpreted the requirements to be triggered when the control requirement 'takes effect' rather than at signature
- Confirmed that there is no 'grandfathering' of pending permit applications
- Reinforced that new and modified large stationary sources must already consider energy efficiency when selecting Best Available Control Technology for non-GHG pollutants

#### Endangerment Finding

- Final December 15, 2009
- EPA Administrator found -
  - 1) The 6 GHGs in combination in the atmosphere endanger both the public health and the public welfare of current and future generations
  - 2) Combined emissions of GHGs from new motor vehicles contribute to the GHG air pollution that endangers public health and welfare under Section 202(a) of the CAA

#### GHG Mandatory Reporting Rule

- Effective December 29, 2009
- Designed to collect source specific data
- Data collection begins in 2010
- First report due March 31, 2011
- Report directly to EPA
- Additional MMR information available at:  
[www.epa.gov/climatechange/emissions/ghgrulemaking.html](http://www.epa.gov/climatechange/emissions/ghgrulemaking.html)

#### Light Duty Vehicle Rule

- Joint Regulatory Proposal by EPA and NHTSA signed September 15, 2009
- Becomes effective July 6, 2010
- Covers model year 2012-2016 passenger cars, light-duty trucks, and medium-duty passenger vehicles
- Establishes tailpipe emission standards for CO<sub>2</sub>, N<sub>2</sub>O, methane, and HFCs

#### Permitting Requirements

- Prevention of Significant Deterioration
  - Current thresholds for major source review are 250 tons per year of a regulated New Source Review pollutant, or 100 tons per year for certain source categories
- Renewable Operating Permit
  - Applicable for a major source at 100 tpy of a regulated NSR pollutant or a major source of hazardous air pollutants

#### Final PSD and Title V GHG Tailoring Rule

- The 'tailored' regulatory thresholds for GHGs are:
  - New PSD Major Source > 100,000 tpy CO<sub>2</sub>e
  - PSD Source Significance Level for Existing Source Modification > 75,000 tpy CO<sub>2</sub>e
  - ROP applicability >100,000 tpy
- New or modified facilities over these thresholds would have to implement Best Available Control Technology

#### Michigan GHG Regulation

- GHGs not currently regulated in Michigan, but will become subject to regulation on January 2, 2011
- Michigan's definition of NSR regulated pollutant is same as current EPA
- Existing thresholds for major source permitting per Michigan Rule are 250/100 tons per year
- MDNRE – Now that EPA has finalized the tailoring rule, AQD will determine its course of action; will most likely update state rules to coincide with the federally established 'tailored' thresholds

#### Summary

- Current approach is to regulate GHGs under the Clean Air Act
- Permitting requirements begin for large sources January 2, 2011
- Thresholds for determining if permitting requirements apply are 75,000/100,000 tpy
- Best available control technology applicable to major sources of GHGs
- Current Michigan rule conflicts with these thresholds