

United States EPA Regulation of Greenhouse Gases

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United States EPA Regulation of Greenhouse Gases

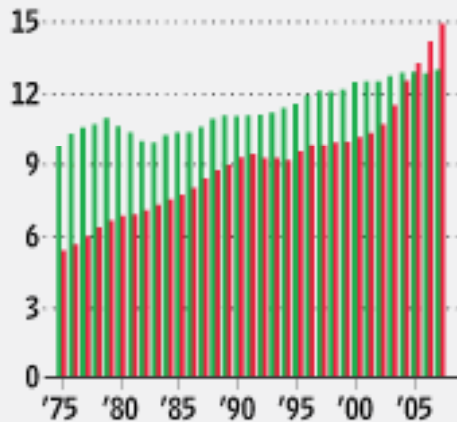
CO₂ Emissions Snapshot

Going to the Source

World-wide emissions

Carbon-dioxide emissions, in billions of metric tons

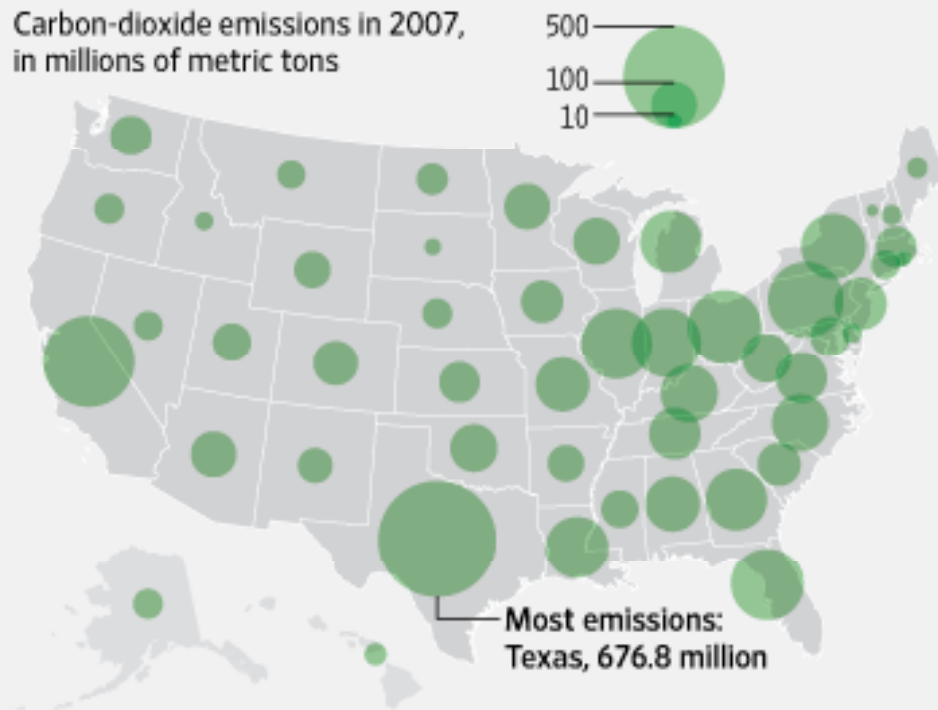
- OECD (Industrialized)
- Non-OECD



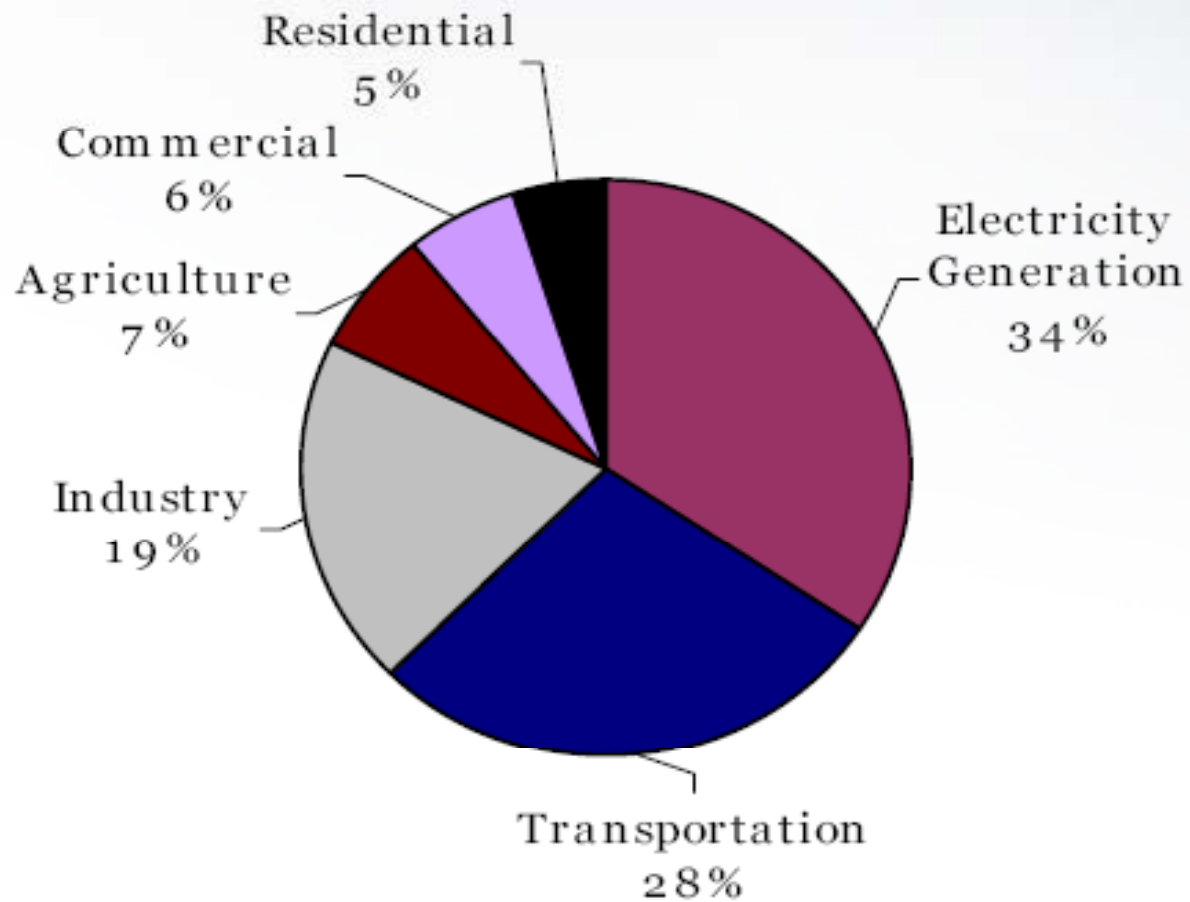
Sources: International Energy Agency; Environmental Protection Agency

The U.S. up close

Carbon-dioxide emissions in 2007, in millions of metric tons

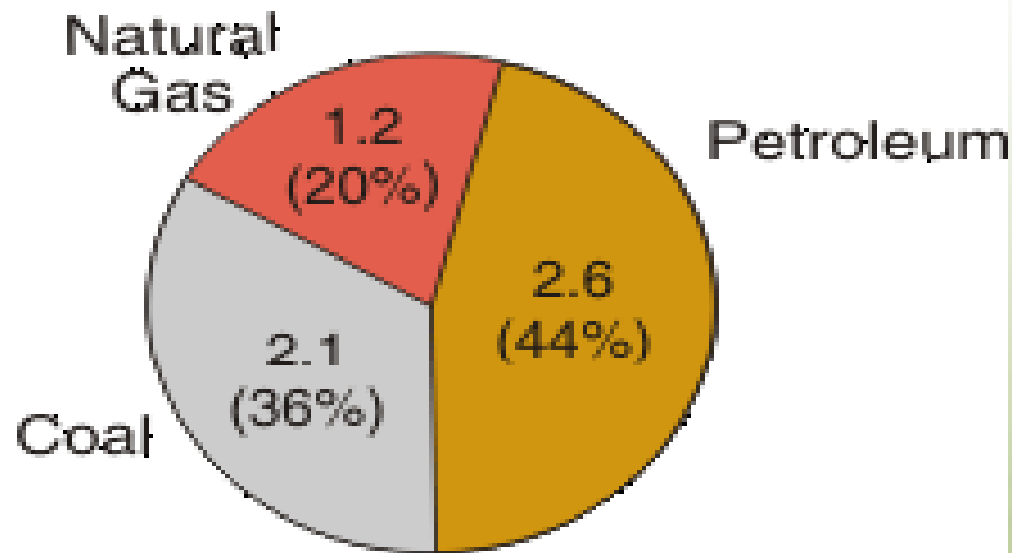


US GHG Emissions (CO₂e) (2007)



Fossil Fuel CO₂ Emissions

Billion Metric Tons CO₂e



Source: Energy Information Administration, *Emissions of Greenhouse Gases in the United States 2006* (Nov. 2007).

CO₂ Emissions from Fossil Fuel Combustion (by type and sector)

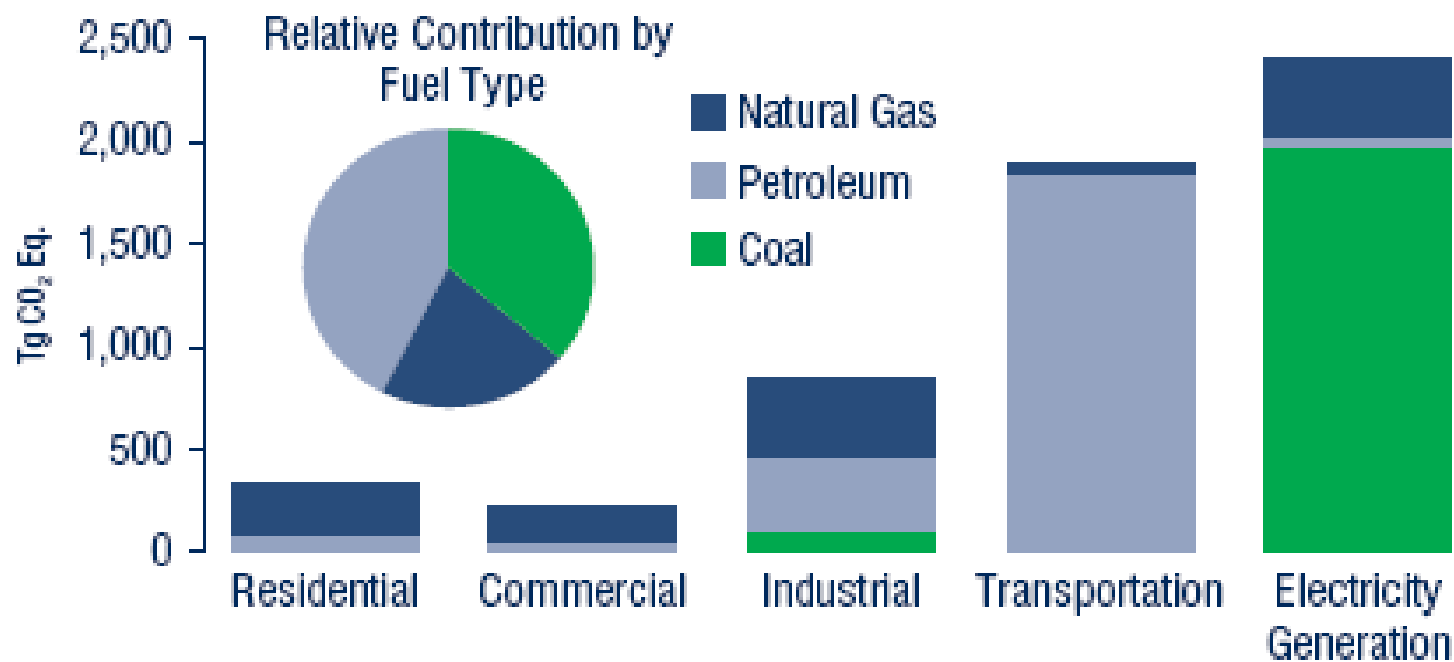
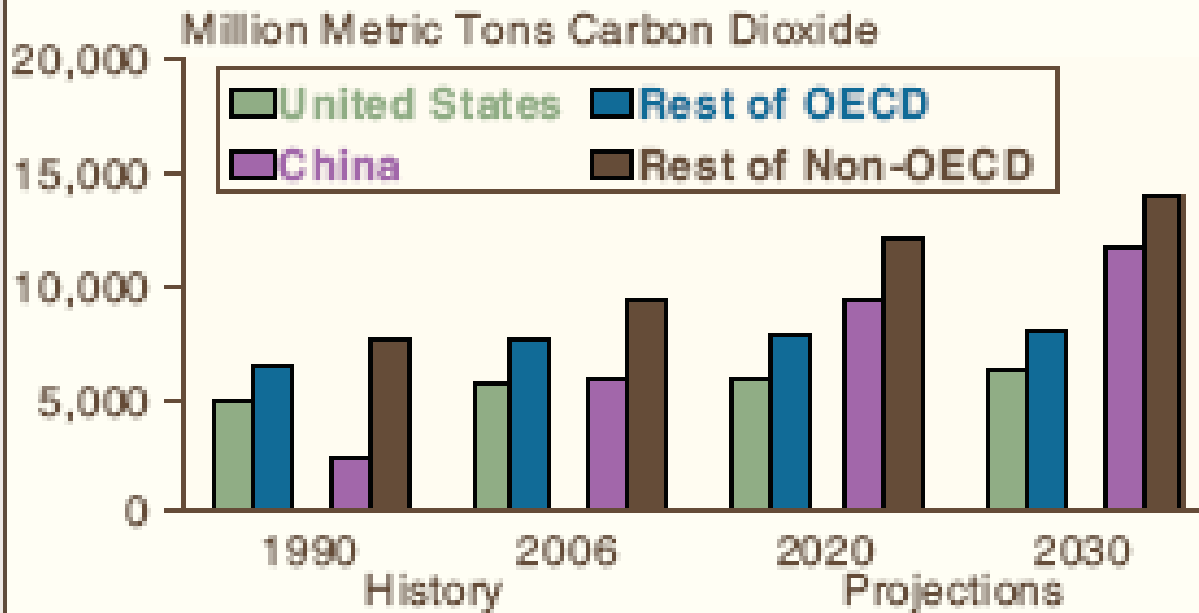
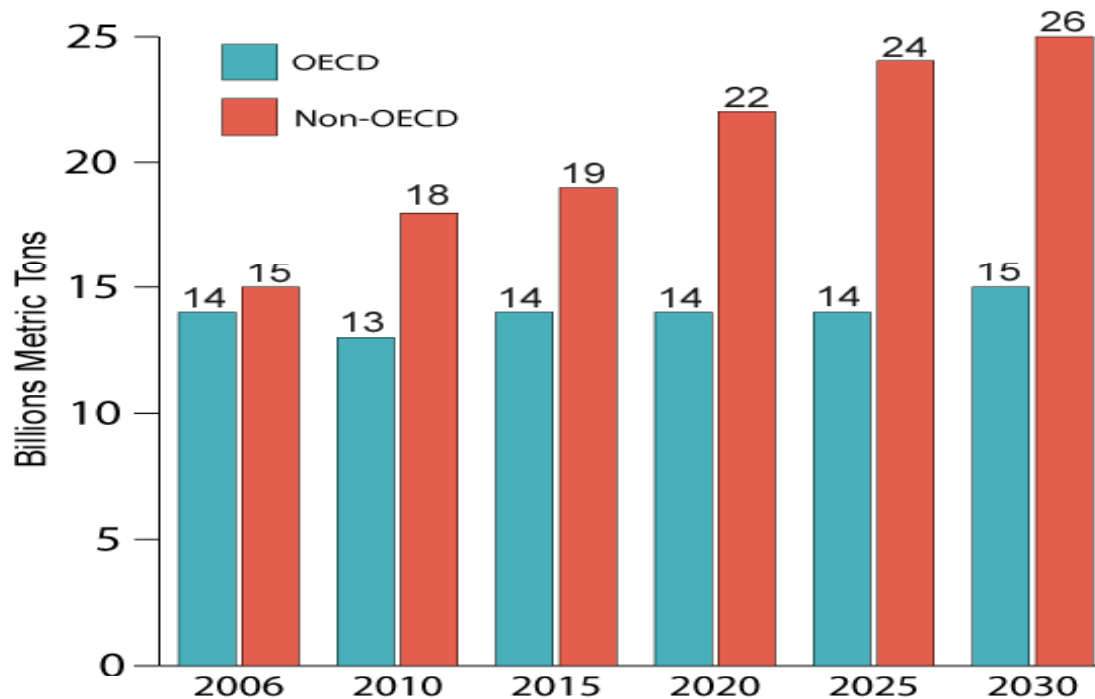


Figure 5. World Carbon Dioxide Emissions by Region, 1990, 2006, 2020, and 2030



Sources: This report and EIA, *Updated Annual Energy Outlook 2009 Reference Case* (April 2009), web site www.eia.doe.gov/oiaf/service/rpt/stimulus.

World Energy-Related Carbon Emissions, 2006-2030



Sources: **2006:** Energy Information Administration, International Energy Annual 2006 (June-December 2008), www.eia.doe.gov/iea. **Projections:** EIA, World Energy Projections Plus (2009).



Massachusetts v. EPA (2007)



- Massachusetts and 11 other states, 4 cities, and some environmental groups petitioned EPA to regulate vehicle emissions of four GHGs, including carbon dioxide
- Section 202 of the CAA requires the EPA Administrator to prescribe “standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines, which in his judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare”
- CAA defines the term “air pollutant” to include “any air pollution agent or combination of such agents, including any physical, chemical, biological, radioactive . . . substance or matter which is emitted into or otherwise enters the ambient air”



Massachusetts v. EPA (2007)



- In 1999, EPA denied the petition on two grounds:
 - First, EPA concluded that it lacked authority under the CAA to regulate GHGs as air pollutants
 - Second, EPA determined that even if it had authority to regulate GHGs, it would be unwise to do so
- U.S. Supreme Court agreed to hear the case



Massachusetts v. EPA (2007)



- US Supreme Court found (5-4) that GHG are air pollutants covered by the CAA
- As a result, EPA Administrator must determine whether GHG emissions from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or if science is too uncertain



Endangerment Finding



- As a direct result of the Massachusetts case, EPA issued a proposed finding that GHG “cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare”
- Proposal issued April 17, 2009
- Final finding of endangerment announced December 7, 2009 – just in time for Copenhagen



Endangerment Finding



- 2 Distinct Findings
- “Endangerment” finding
 - Six GHG threaten public health and welfare
 - CO₂
 - CH₄
 - N₂O
 - HFCs
 - PFCs
 - SF₆
- “Cause or contribute” finding
 - Combined emissions of GHGs from new motor vehicles “cause or contribute” to threat of climate change



Efforts to Regulate GHG



- **Congress**
 - Waxman-Markey Bill passed House earlier this year
 - Kerry-Boxer in Senate committees currently
- **EPA**
 - Reporting Rule
 - Tailoring Rule (PSD and Title V permits for GHG)
 - Emission Standards (light duty vehicles)

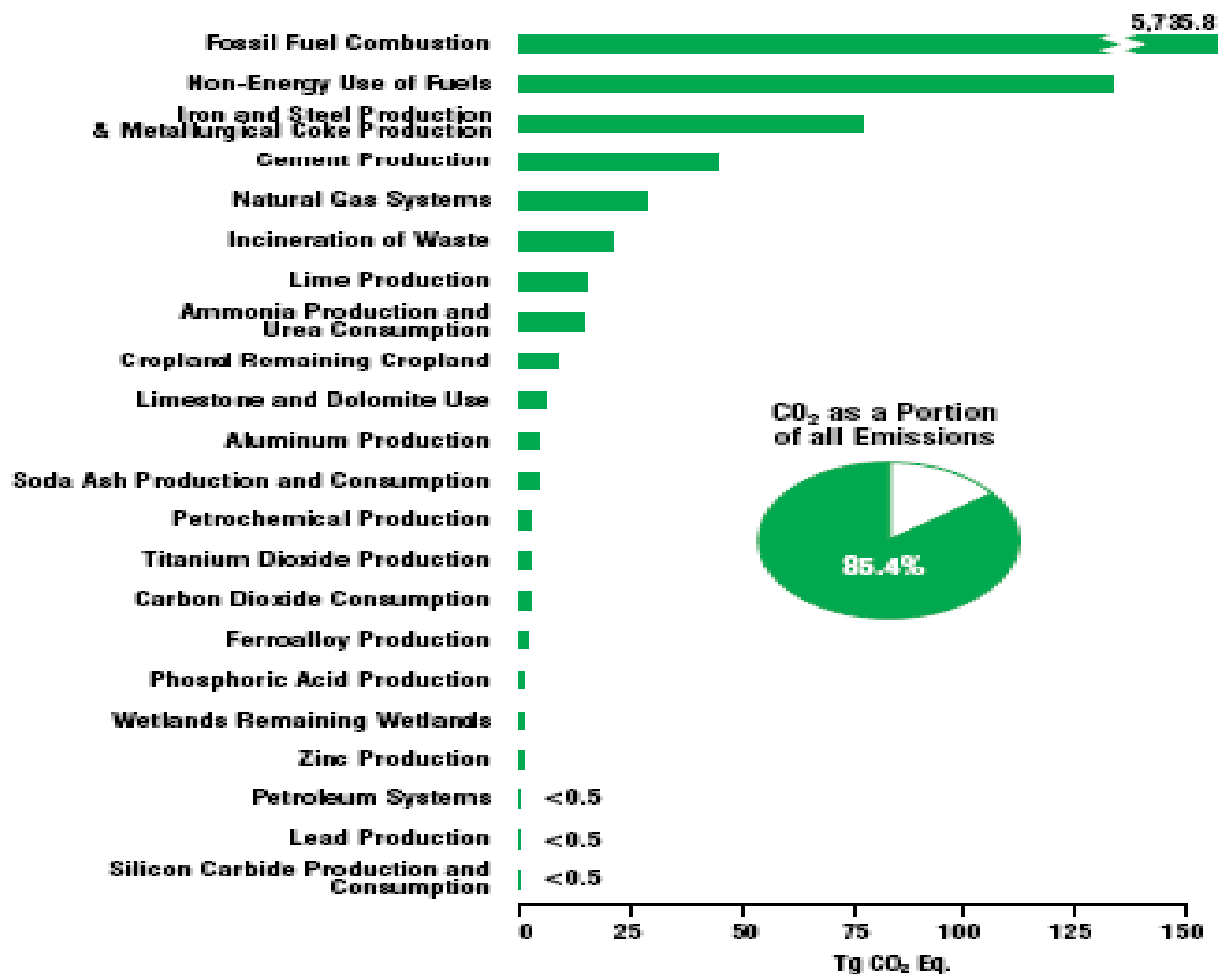


GHG Reporting Rule



- Rule finalized September 22, 2009
- Covers 85% of U.S. GHG emissions from approximately 10,000 facilities
- Requires reporting of annual GHG emissions
 - CO₂ – CH₄ – N₂O – SF₆
 - HFCs – PFCs & other fluorinated gases
- Reporting at facility level for most; corporate level for:
 - suppliers of fossil fuel and industrial GHG
 - vehicle and engine manufacturers
- Must begin collecting data on January 1, 2010
- First report due March 31, 2011 for calendar year 2010

2007 Sources of CO₂ Emissions





GHG Reporting Rule



- Among source categories required to report:
 - Electricity Generators
 - Aluminum Producers
 - Cement Producers
 - Ammonia Producers
 - Lime Manufacturers
 - Petroleum Refineries
 - Municipal Solid Waste Landfills ($\text{CH}_4 \geq 25,000$ metric tons CO_2e)



GHG Reporting Rule



- Source categories that must report if emissions are $\geq 25,000$ metric tons CO₂e
 - Stationary Combustion Units
 - Ferroalloy Production
 - Glass Production
 - Hydrogen Production
 - Iron and Steel Production
 - Lead Production
 - Pulp & Paper Manufacturing
 - Zinc Production

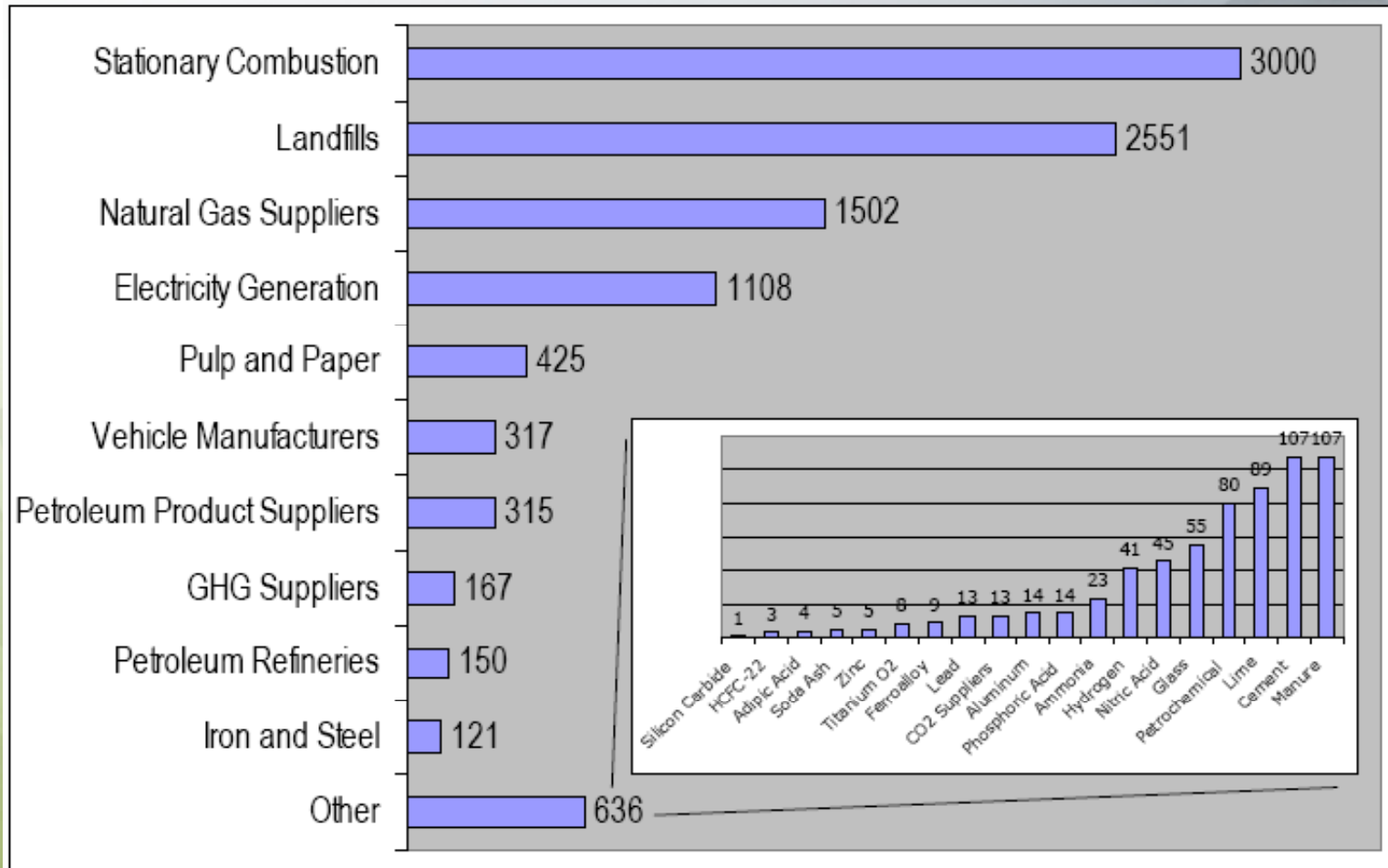


GHG Reporting Rule



- Sources proposed for inclusion but deferred in final rule, include:
 - Electronics Manufacturing
 - Ethanol Production
 - Food Processing
 - Oil and Natural Gas Systems
 - Underground Coal Mines
 - Suppliers of Coal
 - Industrial Landfills
 - Wastewater Treatment

Facilities covered by reporting rule





GHG Reporting Rule



- What is reported by GHG emitters?
 - Facility information
 - Months covered by report
 - All GHG emissions from facility, aggregated
 - Annual emissions of biogenic CO₂, aggregated
 - Annual GHG emissions for each source category at facility, by gas
 - Such additional data as required by rule for specific source category



GHG Reporting Rule



- What is reported by GHG suppliers?
 - Facility information
 - Annual quantities of each GHG that would be emitted from combustion or use of products supplied, imported, or exported
 - Total quantity of all GHGs that would be emitted, aggregated
 - Such additional data as required by rule for specific source category



GHG Reporting Rule



- Some facilities must report as both direct emitters and suppliers
- e.g., Petroleum Refineries
 - Suppliers of petroleum products
 - Direct emitters of GHG from refining, fuel combustion and other sources



GHG Reporting Rule



- Abbreviated GHG Report for facilities containing only stationary fuel combustion sources
 - Total facility GHG emissions aggregated for all combustion units and expressed as metric tons of CO₂, CH₄, N₂O and CO₂e
- Must retain records for 3 years



GHG Reporting Rule



- Facilities that reduce emissions can exit program
 - 5 consecutive years below 25,000 mT CO₂e
 - 3 consecutive years below 15,000 mT CO₂e
 - If GHG-emitting processes are shut down
- Can use best available data in lieu of required monitoring methods for 2010-Q1
 - Facilities can seek extension beyond March, but not beyond 2010



Light-Duty Vehicle GHG Rule



- EPA (with NHTSA) proposed regulation of GHG from light-duty vehicles on September 15, 2009
- Rule could become final as early as March 2010
- **If/when GHGs are regulated for light-duty vehicles, GHGs will be “regulated air pollutants” under CAA and will trigger PSD/Title V requirements**



Light-Duty Vehicle GHG Rule



- Proposal could drive cost of new cars and trucks up by \$1,300 according to EPA; more according to others
- Rule would cover model years 2012 – 2016 and include MPG requirements and first ever GHG emission standards
- EPA expects rule to reduce GHG emissions from light-duty fleet by 21% by 2030



GHG as “Regulated Air Pollutant”



- If GHG become “regulated air pollutants,” a Pandora’s Box of permitting woes ensues
- Current permitting thresholds for PSD/Title V are 100 or 250 tons per year
- For CO₂, this is a very low threshold/many sources emit above 250 tons per year
 - Office/apartment buildings
 - Hotels
 - Malls
 - Hospitals



GHG as “Regulated Air Pollutant”



- Regulating GHG emissions at CAA thresholds will paralyze permitting system
 - 40,000 PSD permits per year (currently 300)
 - 6,000,000 Title V permits (currently 15,000)
- Endangerment finding implies that primary health-based NAAQS for GHG is needed
- But... states can't use SIP process to affect atmospheric GHG concentrations to achieve NAAQS
- Unlike PM, NO_x, SO₂, etc., it's a “global” issue
- Perpetual “nonattainment”?



GHG Tailoring Rule



- Proposed September 30, 2009
- “Tailors” applicability thresholds for PSD and Title V
 - 100/250 tons per year under traditional permitting
 - 25,000 tons per year under Tailoring Rule
- Would require large facilities emitting >25,000 tons of GHG to obtain permits and use best practices and technologies to control emissions



GHG Tailoring Rule



- GHG emissions measured as CO₂ equivalents
 - CO₂ equivalent (CO₂e) based on global warming potential (GWP), or potency of GHG
 - Examples:
 - 1 ton CH₄ = 25 tons CO₂e
 - 1 ton N₂O = 298 tons CO₂e
- Rule would cover approximately 70% of GHG emissions from stationary sources



GHG Tailoring Rule – PSD



- Prevention of Significant Deterioration (PSD) is permitting program for major new sources and major modifications of existing sources
- Proposed major stationary source threshold for CO₂e is 25,000 tons
- Proposed significance level for major modification is between 10,000 and 25,000 tons (EPA taking comments before finalizing)



GHG Tailoring Rule – Title V



- Facilities newly subject to Title V because of GHG emissions would have 1 year to apply for Title V permit from date GHG become “regulated air pollutant”
 - i.e., date light-duty vehicle rules become effective or GHG otherwise become “regulated air pollutants” under CAA
- Existing Title V permits would incorporate GHG emissions upon renewal



Tailoring Rule “Streamlining”



- Redefines “Potential to Emit” for GHG
 - Would use actual, not potential, emissions when evaluating applicability
- Presumptive BACT for small GHG sources
 - Typically BACT is case-by-case review process
- General Permits for categories of GHG sources
- Electronic Permitting System



Tailoring Rule Burdens



- Even with Tailoring Rule, EPA estimates 400 new sources and modifications will be subject to PSD review for GHG emissions
- EPA estimates 14,000 GHG sources will be subject to Title V operating permit
- EPA estimates that it costs \$125,000 and takes 866 hours to complete a PSD permit application
 - That doesn't include the cost of the BACT controls



Next Steps



- If Tailoring Rule is finalized, states with approved programs will need to modify SIPs to incorporate GHG requirements
- States could opt to set lower permitting thresholds than Tailoring Rule
- EPA must re-evaluate final GHG thresholds after an initial phase (proposed to be 5 years)
- Based on evaluation, EPA could lower GHG thresholds



Problems with Proposal



- CAA clearly sets applicability thresholds for PSD and Title V at either 100 or 250 tons, depending on type of source
- EPA proposal to create rule with different threshold ignores statute
- EPA claims it can do so based on:
 - “Absurd Results” Doctrine
 - Doctrine of “Administrative Necessity”



Absurd Results



- Under *Chevron*, analysis is 2- part:
 - Step 1: is Congressional intent clear? If not,
 - Step 2: Agency may reasonably interpret statute
- In this case, language in CAA is very clear, but...
- Supreme Court has held that “plain meaning is not conclusive in rare case in which literal application of a statute will produce a result demonstrably at odds with the intention of the drafters,” in which case intent controls



Administrative Necessity



- Once GHGs are “regulated air pollutants,” PSD and Title V will be triggered at 100/250 ton per year threshold, with 0 ton significance level for modifications
- The volumes of permit applications would be so high that EPA would become “overwhelmed and essentially paralyzed”
- Under Administrative Necessity Doctrine, EPA can “tweak” the process to make it manageable



What Next?



- Lawsuits inevitable
 - Industry will undoubtedly challenge EPA’s ability to ignore statutory CAA thresholds and set thresholds for GHGs
 - e.g., no authority to “tailor” rule
 - Environmentalists may do the same, for different reasons
 - e.g., Tailoring Rule thresholds not stringent enough
 - Petitions to establish NAAQS for GHGs
 - Center for Biological Diversity and 350.org already filed one such petition December 2, 2009



What Next?



- Congressional action may preempt EPA
 - Waxman-Markey bill clearly removes EPA authority to regulate GHG under CAA and would create its own scheme (i.e., Cap & Trade)
 - Kerry-Boxer, while also a Cap & Trade bill, currently has language comparable to the Tailoring Rule authorizing EPA to regulate large (> 25,000 tons) GHG emitters



The meeting host will now open phone and chat lines for questions

To pose a question to the presenter, please click “Raise Your Hand”
and the host will open your phone line

You may also ask questions by typing your question
into the chat box on the lower right-hand portion of the screen

Thank you for participating!

January 2010

Marcellus Shale



Happy Holidays

