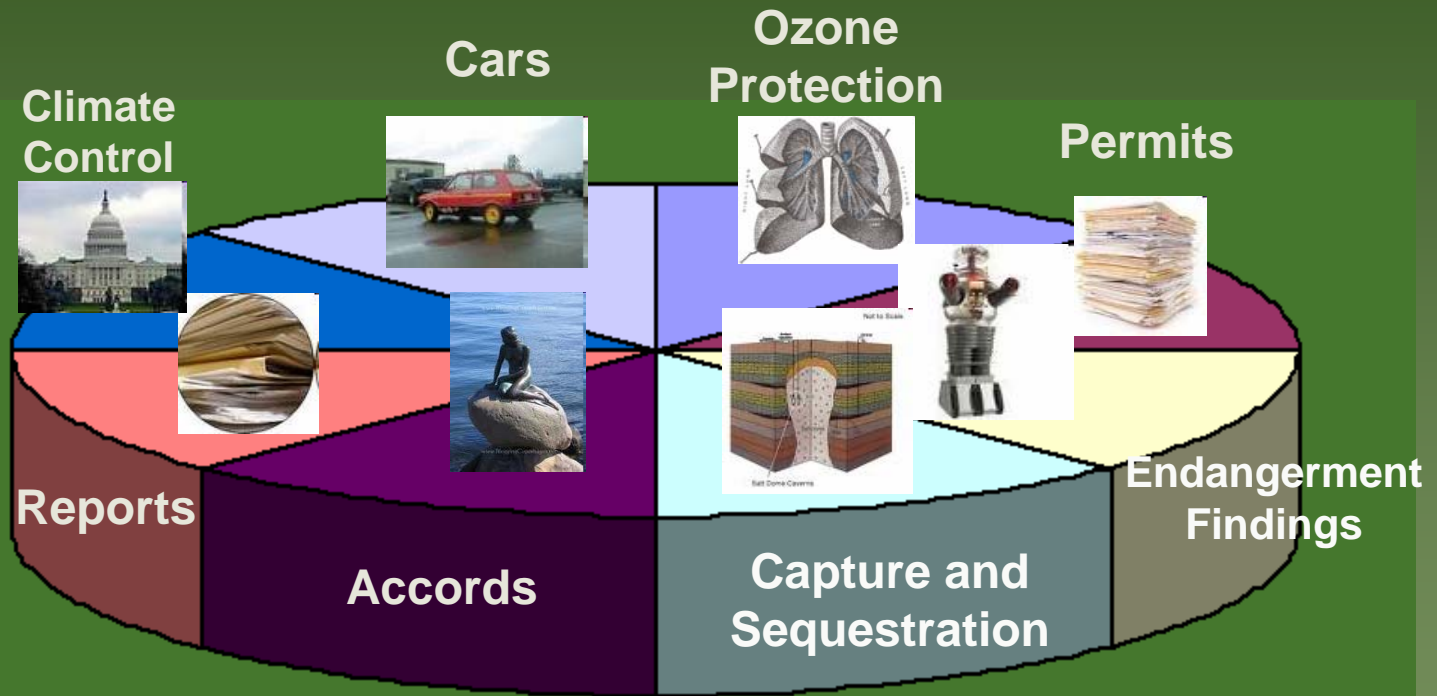


Greenhouse Gas Laws and Developments

Presented by:
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The GHG Wheel Of Fortune



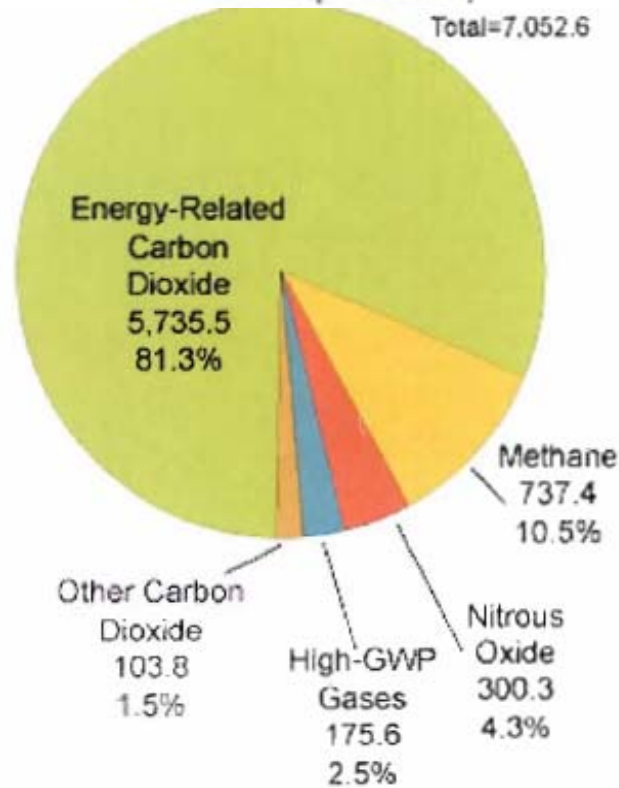
The Issues

- ◆ Climate Control Legislation
- ◆ EPA Greenhouse Gas (GHG) Regulation and Endangerment Finding

I. Climate Control Legislation

Background Information

U.S. Greenhouse Gas Emissions by Gas, 2008 (Million Metric Tons Carbon Dioxide Equivalent)



Source: EIA estimates, published in *Emissions of Greenhouse Gases in the United States 2008* (December 2009).

Note: Values expressed as carbon dioxide equivalents (CO₂e) are calculated based on their global warming potential (GWP). GWP is the ratio of the warming that would result from the emission of one kilogram of a greenhouse gas to that from the emission of one kilogram of carbon dioxide over a fixed period of time such as 100 years.

Table ES-2: Recent Trends in U.S. Greenhouse Gas Emissions and Sinks (Tg CO₂ Eq.)

Gas/Source	1990	1995	2000	2005	2006	2007
CO₂	5,076.7	5,407.9	5,955.2	6,090.8	6,014.9	6,103.4
Fossil Fuel Combustion	4,768.9	5,013.9	5,501.5	5,723.5	5,635.4	5,735.0
Electricity Generation	1,806.7	1,938.9	2,283.2	2,381.0	2,327.3	2,367.2
Transportation	1,484.5	1,598.7	1,800.3	1,881.5	1,890.9	1,867.4
Industrial	334.2	362.6	344.6	328.0	344.5	345.4
Residential	337.7	354.4	370.4	359.0	321.9	340.6
Commercial	214.5	224.4	226.0	221.8	206.0	214.4
U.S. Territories	38.0	35.0	36.2	53.2	54.8	50.8
Non-Energy Use of Fuels	117.0	137.5	144.5	138.1	145.1	133.9
Iron and Steel Production & Metallurgical Coke Production	109.8	103.1	95.1	73.2	78.1	77.4
Cement Production	33.3	36.8	41.2	45.9	46.6	44.5
Natural Gas Systems	33.7	33.8	29.4	29.5	29.5	28.7
Incineration of Waste	10.9	15.7	17.5	19.5	19.8	20.8
Lime Production	11.5	13.3	14.1	14.4	15.1	14.6
Ammonia Production and Urea Consumption	16.8	17.8	16.4	12.0	12.3	13.8
Cropland Remaining Cropland	7.1	7.0	7.5	7.9	7.9	6.0
Limestone and Dolomite Use	5.1	6.7	5.1	6.8	8.0	6.2
Aluminum Production	6.8	5.7	6.1	4.1	3.8	4.3
Soda Ash Production and Consumption	4.1	4.3	4.2	4.2	4.2	4.1
Petrochemical Production	2.2	2.8	3.0	2.8	2.6	2.6
Titanium Dioxide Production	1.2	1.5	1.8	1.8	1.9	1.9
Carbon Dioxide Consumption	1.4	1.4	1.4	1.3	1.7	1.9
Ferrous Alloy Production	2.2	2.0	1.9	1.4	1.5	1.6
Phosphoric Acid Production	1.5	1.5	1.4	1.4	1.2	1.2
Wetlands Remaining Wetlands	1.0	1.0	1.2	1.1	0.9	1.0
Zinc Production	0.9	1.0	1.1	0.5	0.5	0.5
Petroleum Systems	0.4	0.3	0.3	0.3	0.3	0.3
Lead Production	0.3	0.3	0.3	0.3	0.3	0.3
Silicon Carbide Production and Consumption	0.4	0.3	0.2	0.2	0.2	0.2
Land Use, Land-Use Change, and Forestry (Sink) ^a	(841.4)	(851.0)	(717.5)	(1,282.7)	(1,059.5)	(7,062.6)
Biomass—Wood	215.2	229.7	218.7	208.9	209.9	208.8
International bunker fuels ^b	114.3	101.6	99.0	77.5	110.5	108.8
Biomass—Ethanol ^c	4.2	7.7	9.2	22.6	30.5	38.0
CH₄	616.8	615.8	591.1	561.7	582.0	585.3
Enteric Fermentation	133.2	143.6	134.4	136.0	138.2	138.0
Landfills	149.2	144.3	122.3	127.8	130.4	132.9
Natural Gas Systems	129.6	132.6	130.8	106.3	104.8	104.7
Coal Mining	84.1	67.1	60.5	57.1	58.4	57.6
Manure Management	30.4	34.5	37.9	41.8	41.8	44.0
Forest Land Remaining Forest Land	4.6	6.1	20.6	14.2	31.3	29.0
Petroleum Systems	33.9	32.0	30.3	28.3	28.3	28.8
Wastewater Treatment	23.5	24.8	25.2	24.3	24.5	24.4
Stationary Combustion	7.4	7.1	6.6	6.7	6.3	6.6
Rice Cultivation	7.1	7.8	7.5	6.8	6.9	6.2
Abandoned Underground Coal Mines	6.0	8.2	7.4	5.6	5.5	5.7
Mobile Combustion	4.7	4.3	3.4	3.5	2.4	2.3

Table ES-2: Recent Trends in U.S. Greenhouse Gas Emissions and Sinks (Tg CO₂ Eq.) (continued)

Gas/Source	1990	1995	2000	2005	2006	2007
Composting	0.9	0.7	1.0	1.5	1.5	1.7
Petrochemical Production	0.9	1.1	1.2	1.1	1.0	1.0
Field Burning of Agricultural Residues	0.7	0.7	0.0	0.0	0.0	0.0
Iron and Steel Production & Metallurgical Coke Production	1.0	1.0	0.0	0.7	0.7	0.7
Formaldehyde Production	+	+	+	+	+	+
Silicon Carbide Production and Consumption	+	+	+	+	+	+
International bunker fuels ^b	0.2	0.1	0.1	0.1	0.1	0.1
N₂O	215.8	204.1	209.2	215.9	212.1	211.8
Agricultural Soil Management	200.3	200.2	204.5	210.6	208.4	207.9
Mobile Combustion	43.7	53.7	62.8	36.7	33.3	30.1
Nitric Acid Production	20.0	22.3	21.9	18.6	18.2	21.7
Mastern Management	12.1	12.9	14.0	14.2	14.6	14.7
Stationary Combustion	12.8	13.3	14.5	14.8	14.5	14.7
Adipic Acid Production	15.3	17.3	6.3	5.9	5.9	5.8
Wastewater Treatment	3.7	4.0	4.0	4.0	4.0	4.0
N ₂ O from Product Uses	4.4	4.5	4.9	4.4	4.4	4.4
Forest Land Remaining Forest Land	0.5	0.9	2.4	1.8	3.5	3.3
Composting	0.4	0.8	1.4	1.7	1.8	1.8
Settlements Remaining Settlements	1.0	1.2	1.2	1.5	1.5	1.6
Field Burning of Agricultural Residues	0.4	0.4	0.5	0.5	0.5	0.5
Incineration of Waste	0.5	0.5	0.4	0.4	0.4	0.4
Wetlands Remaining Wetlands	+	+	+	+	+	+
International bunker fuels ^b	1.1	0.9	0.9	1.0	1.0	1.0
HFCs	34.9	81.0	188.1	116.1	119.1	129.5
Substitution of Gases (excluding Solventuses) ^c	0.3	29.5	71.2	100.0	105.0	108.3
HFC-22 Production	34.4	33.0	28.6	15.6	13.9	17.0
Semiconductor Manufacture	0.2	0.5	0.3	0.2	0.3	0.3
PFCs	29.8	19.8	13.5	6.2	6.8	7.0
Aluminum Production	18.5	11.0	8.6	3.0	2.5	2.8
Semiconductor Manufacture	2.2	3.9	4.9	3.2	3.5	3.8
SF₆	02.8	20.1	19.2	17.9	17.8	18.5
Electrical Transmission and Distribution	20.8	21.8	15.1	14.0	13.2	12.7
Magnesium Production and Processing	5.4	5.8	3.0	2.9	2.9	3.0
Semiconductor Manufacture	0.5	0.9	1.1	1.0	1.8	0.8
Total	8,866.7	8,460.3	7,008.2	7,198.6	7,051.1	7,150.1
Net Withdrawals (Sinks and Sinks)	3,257.3	3,612.2	5,250.7	5,985.9	6,600.9	6,007.5

+ Does not exceed 0.05 Tg CO₂ Eq.

^a Withdrawals include negative values or sequestration. The net CO₂ flux total includes both emissions and sequestration, and contributes a sink in the United States. Sinks are only included in net emissions total.

^b Emissions from International Bunker Fuels and Biomass Combustion are not included in totals.

^c Small amounts of PFC emissions also result from this source.

Note: Totals may not sum due to independent rounding.

Political Roots

- ◆ Kyoto protocols (1997) favor CO2 emissions limits and “cap and trade.” The U.S. signed but never ratified or withdrew from it. It is largely symbolic.
- ◆ Gore’s An Inconvenient Truth (2006) popularized the fears.
- ◆ In 2007, the Intergovernmental Panel on Climate Change (“IPCC”) found that the global warming trend has manmade roots since the industrial era around 1750.
- ◆ Obama’s commitment at Copenhagen Accord (2009) to keep maximum temperature rise to 2 degrees Celsius. Developed countries agreed to reduction targets and mitigation action for 2020. Hundreds of billions of United States dollars for action by all countries. Not legally binding until Mexico meeting.
- ◆ The political and scientific history of the issue goes back to at least 1970’s, but we will leave that for now. A greenhouse effect in good for a planet; it is only when it heats us too fast that problems exist.

Climate Control Legislation

- ◆ Waxman-Markey – “American Energy and Security Act” (H.R. 2454).
- ◆ Renewable Electricity Standard – Large utilities produce increasing percentages of electricity from renewable resources.
- ◆ Six percent by 2012; 20 percent by 2020; 5 percent can be derived from efficiencies.
- ◆ Wind, solar, geothermal, biomass, landfill gas, waste water-treatment gas, coal-mine methane, hydropower, and waste-to-energy.

Emission Cuts

- ◆ Three percent by 2012
- ◆ Cap and trade by 2016.
 - Seventeen percent by 2020.
 - Forty-two percent by 2030.
 - Eighty percent by 2050.
- ◆ Permits (a/k/a carbon credits or pollution allowances).
- ◆ Modeled after Acid Rain program of the Clean Air Act.

Emission Cuts

- ◆ Most permits given away at start of program with the rest (fifteen percent) auctioned off and increasingly so over time:
 - Fifteen percent issued to industry until 2025.
 - Five percent issued to coal merchants and electricity producers until 2026-2030.
 - Two percent to oil refineries between 2015 and 2026.
 - Two percent to electric utilities between 2014 and 2026, and five percent thereafter.
 - Thirty percent to electrical distribution companies.
 - Ten percent to state governments.
 - Nine percent to local natural gas distribution companies until 2026 and 2030.
 - Three percent to auto industry from 2012 and 2017 and then one percent to 2025.

Examples

- ◆ If regulated Company A cuts its greenhouse gases by more than permits allow, it can sell excess credits to other companies.
- ◆ If Company B does not have enough credits, it can buy or borrow future credits.
- ◆ If regulated Company C's emissions exceed its permits, it would be penalized two times the market value of permits it should have purchased. Other non-regulated entities (banks, non-profits, and people) can also buy and sell permits.
- ◆ Offsets (funding clean-energy projects nationally or internationally) will be an option.

Other Proposals

- ◆ **New energy efficiency standards.**
- ◆ **Worker transition.**
- ◆ **Smarter cars and grids.**
- ◆ **New coal plants (2009-2020) would be required to adopt carbon capture and sequestration technologies.**

Political Bytes

- ◆ WASHINGTON -- Sen. Mary Landrieu, D-La., is joining with an Alaska Republican to sponsor legislation that would block the Environmental Protection Agency from carrying through on its plans to regulate greenhouse gases that agency officials say contribute to global warming. "To regulate carbon emissions with the Clean Air Act would be to jam a square peg into a round hole," Landrieu said Thursday. "This act is a blunt instrument not suited to the job. I fear that the result would be poorly designed regulations that damage our economy, lead to great investment uncertainty and not do enough to enhance energy security and reduce the risks of climate change."
- ◆ Environmental groups said Landrieu and the bill's main sponsor, Sen. Lisa Murkowski, R-Alaska, are protecting polluting industries and doing harm to Louisiana's fishing industry and efforts to restore the state's wetlands, a natural barrier for storm surge and flooding.
- ◆ **POLITICS: Murkowski mayhem highlights uncertainties with climate bill**
Climate chaos reigned on Capitol Hill yesterday as senators battled over the possibility of U.S. EPA regulations on greenhouse gases and the prospects for global warming legislation this year. Republicans and Democrats alike expressed interest in a "Plan B" approach from Sens. Maria Cantwell (D-Wash.) and Susan Collins (R-Maine) for capping emissions. The plan would return the majority of the revenue raised from a climate program to consumers through a dividend.
- ◆ **CLIMATE: Senate battle lines drawn over move to halt EPA regs**
Sen. Lisa Murkowski (R-Alaska) today launched a formal assault against U.S. EPA climate regulations, plunging the Senate headlong into a heated debate about who ought to be charged with regulating greenhouse gas emissions. Murkowski introduced a disapproval resolution on the Senate floor that would effectively veto EPA's finding that greenhouse gases threaten public health and welfare. That finding gives EPA the authority to move forward with pending climate rules. "The decision to offer this resolution was brought about by what will happen in the wake of the EPA's decision to issue the endangerment finding," Murkowski said.

Political Bytes

- ◆ **POLITICS: Brown is a 'blank slate' on climate, drawing concern and optimism**

Massachusetts Senator-elect Scott Brown has taken largely a back-seat role in his state's energy and climate debates but supported key environmental initiatives when voting in the Legislature, according to state officials, environmental advocates and state records.

- ◆ **SCIENCE: Climate science panel apologizes for Himalayan error**

Leaders of the Intergovernmental Panel on Climate Change apologized yesterday for making a "poorly substantiated" claim that Himalayan glaciers could disappear by 2035. The finding was included in the group's 2007 report in an error-riddled paragraph that also misstates the total land area covered by Himalayan glaciers. Scientists who identified the mistakes say the IPCC report relied on news accounts that appear to misquote a scientific paper that estimated the glaciers could disappear by 2350, not 2035.

- ◆ **CLIMATE: Moderate Dems want Senate to focus on jobs, economy rather than cap and trade**

Several influential moderate Democrats made it clear today that they would prefer a near-term focus on jobs and economic recovery rather than dive too deep into the comprehensive global warming and energy legislation. But Senate Democratic leaders insisted that they would not be making any rash decisions to shift their legislative strategy in the wake of last night's stunning Republican victory in a Massachusetts special election. "I think that there will be a greater focus on jobs and the economy," said Sen. Carl Levin (D-Mich.). "I don't think that means they're going to not address climate change, but I don't think it will have quite the prominence that jobs and the economy are going to have.." political will left to undertake such a contested bill.

Political Bytes

- ◆ **SENATE: Murkowski 'leaning toward' disapproval resolution against EPA climate regs**
Sen. Lisa Murkowski (R-Alaska) will likely move forward with a formal resolution to block U.S. EPA's climate regulations, rather than force a vote on an amendment to limit the agency's regulatory authority, she said today. Murkowski, ranking member of the Energy and Natural Resources Committee, said she is "leaning toward" forcing a vote soon on a disapproval resolution that would effectively veto the Obama administration's "endangerment finding" that links man-made greenhouse gases to global warming -- a legal precursor to regulations on everything from cars to power plants.
- ◆ **SENATE: 'Minimal enthusiasm' for climate bill -- GOP leader**
Senate Republicans pounced today on Senator-elect Scott Brown's surprise victory in the Massachusetts special election, calling it a repudiation of President Obama's legislative agenda on health care with implications that could also trickle down to climate and energy. "This was in many ways a national referendum," Minority Leader Mitch McConnell (R-Ky.) said during a Capitol Hill press conference where he called on Democrats to scrap closed-door negotiations on a final health care package. "I think the majority had gotten the message: no more gamesmanship."
- ◆ **SENATE: Climate is dead, but energy bill lives -- Dorgan**
A leading Democratic senator on energy issues is contradicting his party leadership's assertions that it can pass a climate change bill this year. Sen. Byron Dorgan (D-N.D.), who recently announced his retirement, said today in a conference call sponsored by Securing America's Energy Future that after the bitter battle over health care, there won't be enough

Status

- ◆ **Senate version uncertain –“climate-gate,” economic recovery, re-elections, India and China’s commitments, etc.**
- ◆ **Passage in 2010 is doubtful.**
- ◆ **As an alternative to AESA, Congress may push an energy only bill -- e.g., American Clean Energy Leadership Act (S. 1462). Such a bill would not require cap and trade, but would focus on expanded drilling in the Gulf of Mexico, modernization of the Nation's electrical transmission system, and requiring utilities to generate more alternate/renewable energy from wind, solar, etc.**

II. EPA GHG Regulation

- ◆ GHG Reporting Rule
- ◆ Proposed GHG Emissions Standards for Light Duty Vehicles and permitting ramifications
- ◆ GHG Endangerment Finding and potential ramifications
- ◆ Proposed lowering of ambient air standard for ozone and potential ramifications
- ◆ Carbon capture and sequestration

Greenhouse Gas Reporting Rule

- ◆ EPA finalized a rule on October 30, 2009 (74 F.R. 56260) for industry reporting to gain information on national greenhouse gas emissions.
- ◆ EPA is using existing informational sections of the Clean Air Act (§§114 and 208), though information may be used in connection with climate control legislation passed.
- ◆ The rule requires annual reporting of six greenhouse gases as well as fluorinated gases.
- ◆ First reporting to EPA is due March 31, 2011, but EPA has special provisions for relaxed reporting in 2010 data gathering.

Greenhouse Gas Reporting Rule

- ◆ Annual reporting is from the facility, not corporate level (except at suppliers of fossil fuels and industrial gases which is from corporate levels).
- ◆ A facility or plant listed in the rule or that is a large emitter of greenhouse gases, trigger reporting. The rule, therefore, applies to certain electricity-generating facilities, petrochemical production, petroleum refineries and listed manufacturers, large municipal waste landfills, and other listed production and manufacturing facilities that emit 25,000 metric tons per year (“TPY”) of carbon dioxide equivalents (CO₂e), and any other facility with a rated heat input of 30 mm BTU/hr and emits 25,000 TPY of CO₂e). Emission rates of many mobile source engines are also reportable by manufacturers.
- ◆ Initial Greenhouse gas calculations (Tier 1) are based in 2010 upon best available monitoring methods (“BAMM”), i.e., currently used monitoring, supplier data, engineering calculations (estimates), and other company data.
- ◆ After 2010, unless an extension is granted, emission monitoring through special monitoring equipment is also required for “Tier 2-4” calculations be used.

Greenhouse Gas Reporting Rule

- ◆ The over 250-page rule and preface is broken down in detail (definitions, calculations, monitoring, QA/QC, records retention, etc.) for 29 different industry sectors.
- ◆ Reports have to be certified to EPA.
- ◆ EPA is using this rule as a new public disclosure requirement to reinforce greenhouse gas reduction and mitigation; much like the Toxic Release Inventory encourages industrial reduction in toxic chemical use.
- ◆ This is a federal only enforcement program but EPA says it will coordinate with state programs.
- ◆ Enforcement exists for failure to report, collect data, continuously monitor and test, retain records, calculate properly, etc., and is a per day per violation of \$37,500 maximum penalty. Sections 113 and 203-205 of the Clean Air Act.

EPA's Proposed GHG Emissions Standards for Light Duty Vehicles

- ◆ Regulations proposed on Sept. 28, 2009 (74 F.R. 49,454).
- ◆ Expected to become final in March 2009.
- ◆ Would establish new GHG emissions standards for light duty vehicles.
- ◆ Would be the first time EPA has established emission limits for GHG emissions under the Clean Air Act (CAA).

Potential Ramifications of Light Duty Vehicle Regulations

- ◆ Prevention of Significant Deterioration (PSD) permitting requirements apply to any pollutant “subject to regulation” under the CAA
- ◆ Title V permitting requirements apply to sources with emissions greater than 100 tpy of “pollutants subject to regulation”
- ◆ Thus, if the GHG regulations for light duty vehicles are finalized, a multitude of facilities could, for the first time, become subject to Title V and PSD permitting

Burden on Regulated Community

- ◆ Number of stationary sources with potential to emit greater than 250 tpy of GHG dwarfs the number emitting that amount of other regulated pollutants
- ◆ EPA estimates approximately 280 PSD permits are issued each year with processing time of approximately one year; could grow to 41,000 PSD permits per year with processing time of three years
- ◆ EPA estimates approximately 14,700 facilities with Title V permits in US and average processing time is six months; could grow to 6 million facilities requiring Title V permits and increase processing time to 10 years

EPA Proposed GHG Tailoring Rule

- ◆ Proposed on Sept. 30, 2009, immediately after proposal of the light duty vehicle GHG regulations (74 F.R 55,292, pre-publication draft)
- ◆ Intended to minimize impact of subjecting sources of GHG emissions to Title V and PSD permitting requirements
- ◆ Would subject significant sources such as power plants, refineries, cement production facilities, and municipal solid waste landfills to permitting requirements, but exempt small sources such as “houses, dairies, farms, highways, hospitals, schools, and grocery stores”

EPA Proposed GHG Tailoring Rule

- ◆ Proposes threshold of 25,000 tpy of carbon dioxide equivalent (CO₂e) for new facilities
- ◆ Proposes threshold of 10,000-25,000 tpy of CO₂e for existing major sources making significant modifications
- ◆ EPA estimates that 400 new sources and modifications would be subject to PSD review each year for GHG emissions, 100 of which would be newly subject to PSD
- ◆ EPA estimates 14,000 large sources would need to obtain permits for GHG emissions, 3,000 of which would be newly subject to CAA permitting requirements
- ◆ Most would be municipal solid waste landfills, the second largest source of human-related methane emissions in US

EPA Proposed GHG Tailoring Rule

- ◆ Existing facilities with GHG emissions greater than 25,000 tpy that have CAA permits need not immediately revise them; upon 5-year renewal of permit, must include estimates of GHG emissions in permit application
- ◆ Facilities may “net out” of GHG threshold by shutting down units emitting GHGs
- ◆ New GHG permittees would need to install “best available control technology” (BACT) to minimize GHG emissions
- ◆ EPA plans to streamline the GHG program by conforming the “potential to emit” trigger for PSD to approximate actual emissions, issuing guidelines on presumptive BACT for categories of equipment, and promulgating general PSD permits for source categories. This streamlining could take years.

EPA'S GHG Endangerment Finding

- ◆ Issued on Dec. 7, 2009 (published in 74 F.R. 66496, Dec. 15, 2009)
- ◆ EPA finds that the following six GHGs in combination may reasonably be anticipated to endanger public health and public welfare: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF₆)
- ◆ Based on “long lives” of pollutants and human-related cause of warming trend over the past decades
- ◆ Risks include heat waves, increased ozone pollution, extreme weather events, disease, crop damage, water resources impacts, sea level rise, coastal losses, wildlife impacts, etc.

EPA'S GHG Endangerment Finding

- ◆ Fulfills mandate of Massachusetts v. EPA; CO2 is an "air pollutant" under CAA and EPA must either regulate GHGs under CAA or explain why it was unwilling to do so
- ◆ Finding is a predicate for GHG regulation of light duty vehicles and other sources
- ◆ Suit filed on Dec. 23, 2009 by industry groups to challenge finding

Potential Ramifications of Endangerment Finding

- ◆ Another basis for plaintiffs and environmental groups to oppose development projects
- ◆ Could fuel more tort claims based on climate change impacts

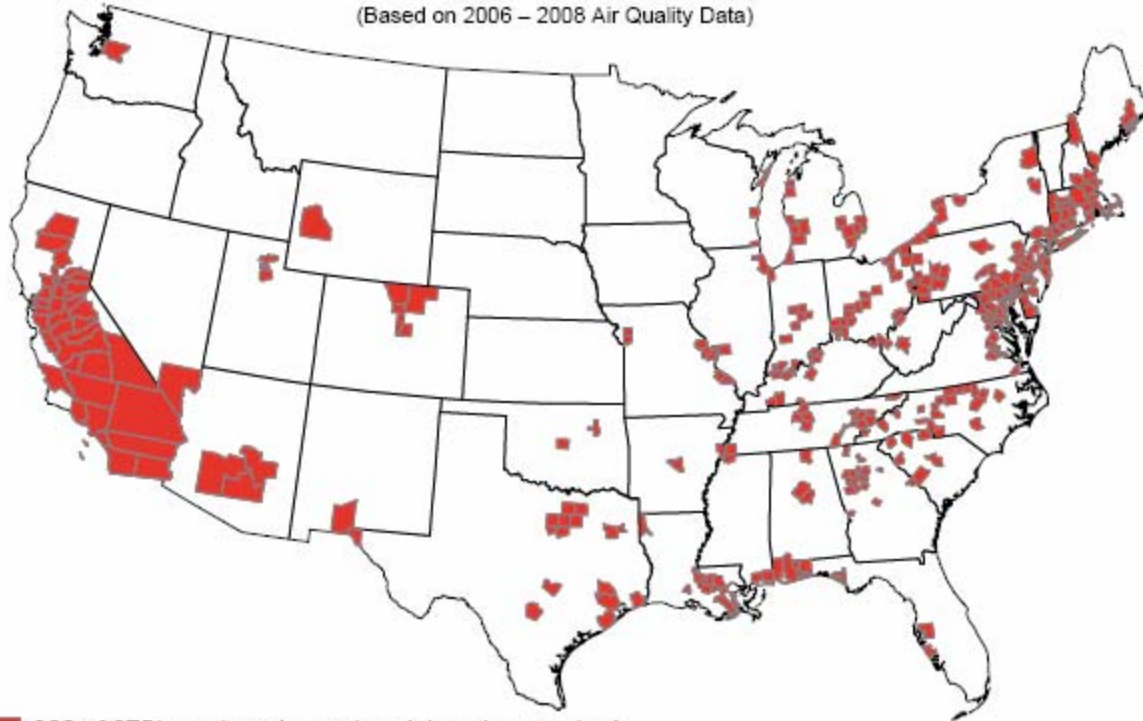
EPA's Proposed Lowering of Ambient Air Standard for Ozone

- ◆ On January 12, 2010, EPA announced public hearings for reconsideration of the 2008 National Ambient Air Quality Standards for Ozone. See 75 Fed. Reg. page 1566 (January 12, 2010); and 75 Fed. Reg. 2938 (January 11, 2010). EPA intends to issue a final reconsideration rule by August 31, 2010.
- ◆ The Clean Air Act works on urban areas by EPA deciding if various areas meet NAAQS for criteria air pollutants, including ozone. Air monitoring stations throughout the country provide data for states and EPA in classifying areas as attainment (prevention of significant deterioration) or non-attainment.
- ◆ EPA is reconsidering the NAAQS for ozone as a result of related court litigation, EPA's Science Advisory Board comments, and the new Administration's directives. The current ozone standard is now set at 0.075 parts per million since 2008 for an eight-hour averaging time. The EPA is proposing to lower the ozone standard to between 0.060 and 0.070 parts per million for an eight-hour limit.

EPA's Proposed Lowering of Ambient Air Standard for Ozone

- ◆ The new ozone standards being proposed would place most of the state with monitoring devices to be above or out of compliance with the new ozone standard, including Baton Rouge, New Orleans, Plaquemines, St. Bernard, St. Charles, St. John and St. Tammany parishes. Baton Rouge was already in a non-attainment status. The lower limits also affect areas in Texas. EPA is extending by one year area designations as non-attainment. See 75 Fed. Reg. 2936 (January 19, 2010).
- ◆ Being in a non-attainment status means that there are more EPA and state regulations enforced in an area, including stricter permit requirements, smaller sources of air pollutants requiring air permits, stricter technology control standards, and vehicle-emission testing.
- ◆ The comment period for the proposed ozone reconsideration regulations expires by March 22, 2010.

Counties With Monitors Violating the March 2008 Ground-Level Ozone Standards
0.075 parts per million
(Based on 2006 – 2008 Air Quality Data)



322 of 675¹ monitored counties violate the standard

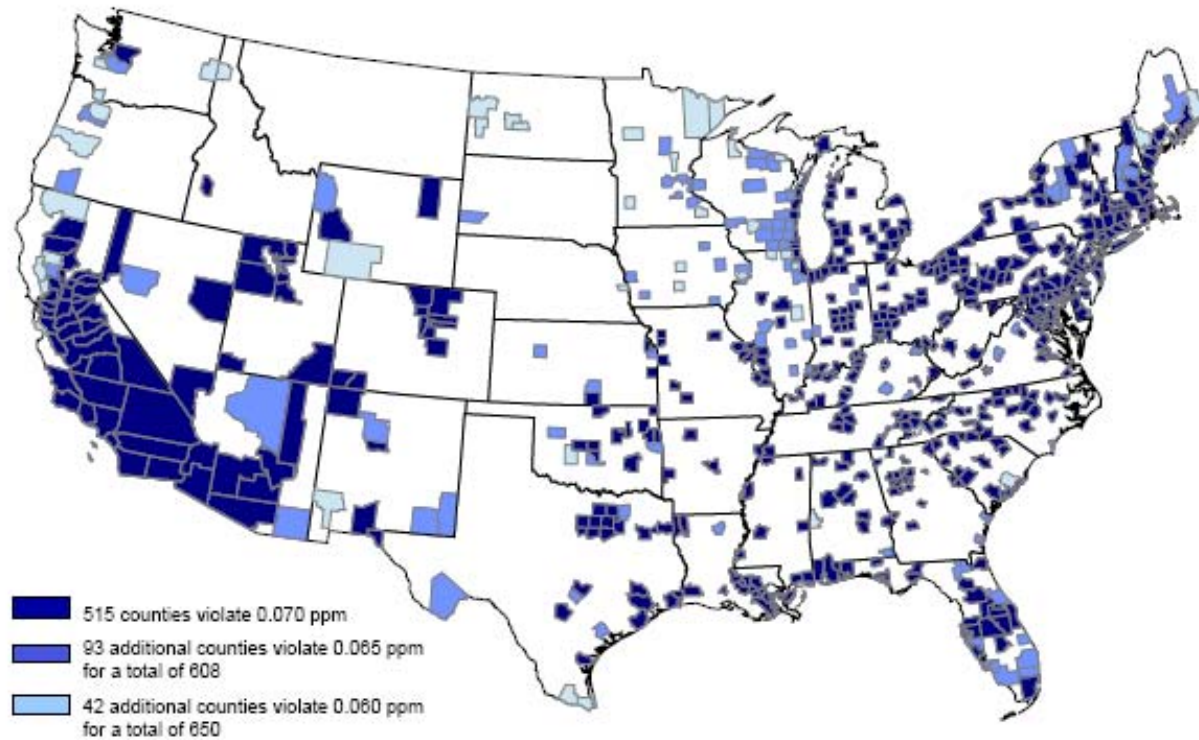
Notes:

1. Counties with at least one monitor with complete data for 2006 – 2008
2. To determine compliance with the March 2008 ozone standards, the 3-year average is truncated to three decimal places.

Counties With Monitors Violating Proposed Primary 8-hour Ground-level Ozone Standards 0.060 - 0.070 parts per million

(Based on 2006 – 2008 Air Quality Data)

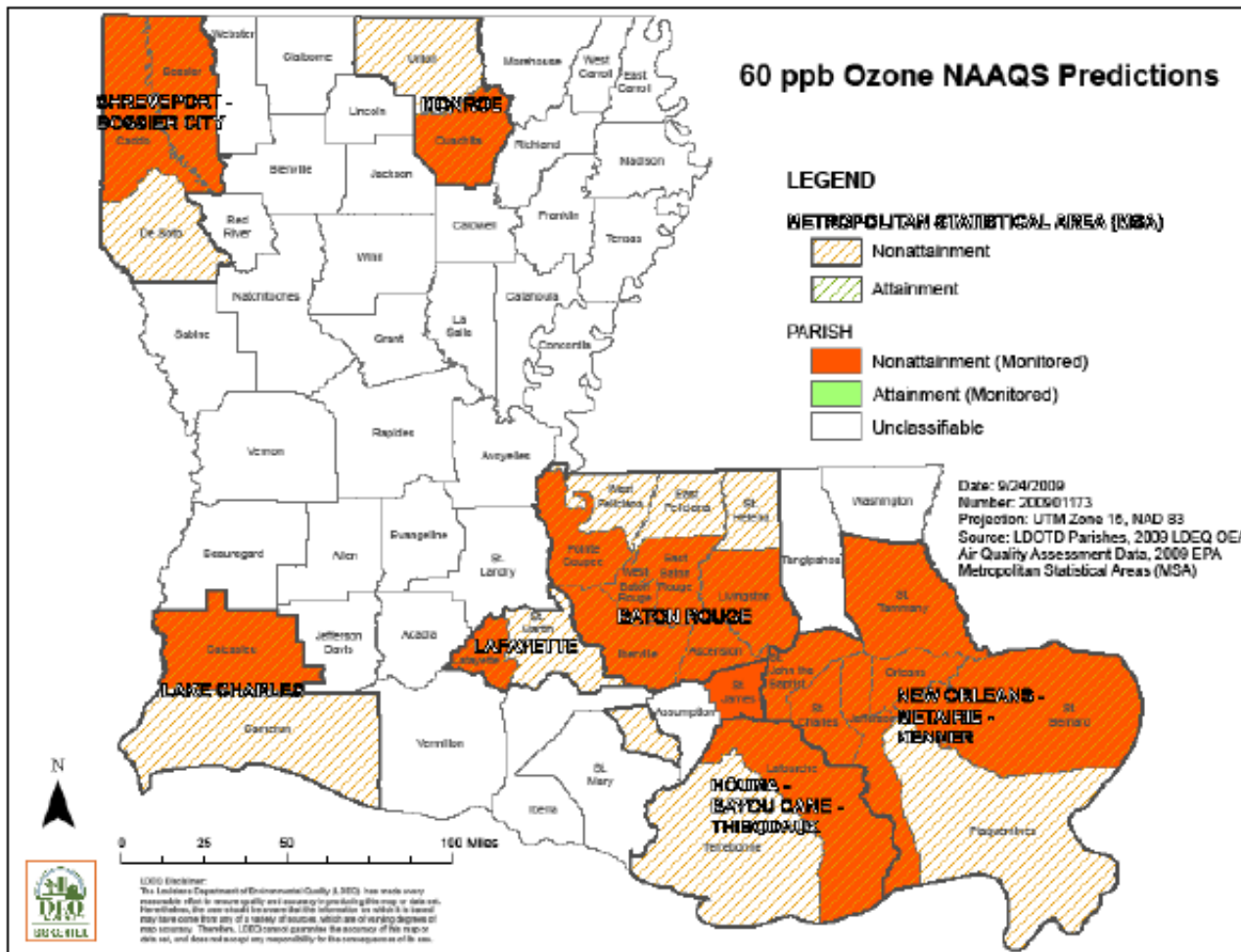
EPA will not designate areas as nonattainment on these data, but likely on 2008 – 2010 data which are expected to show improved air quality.



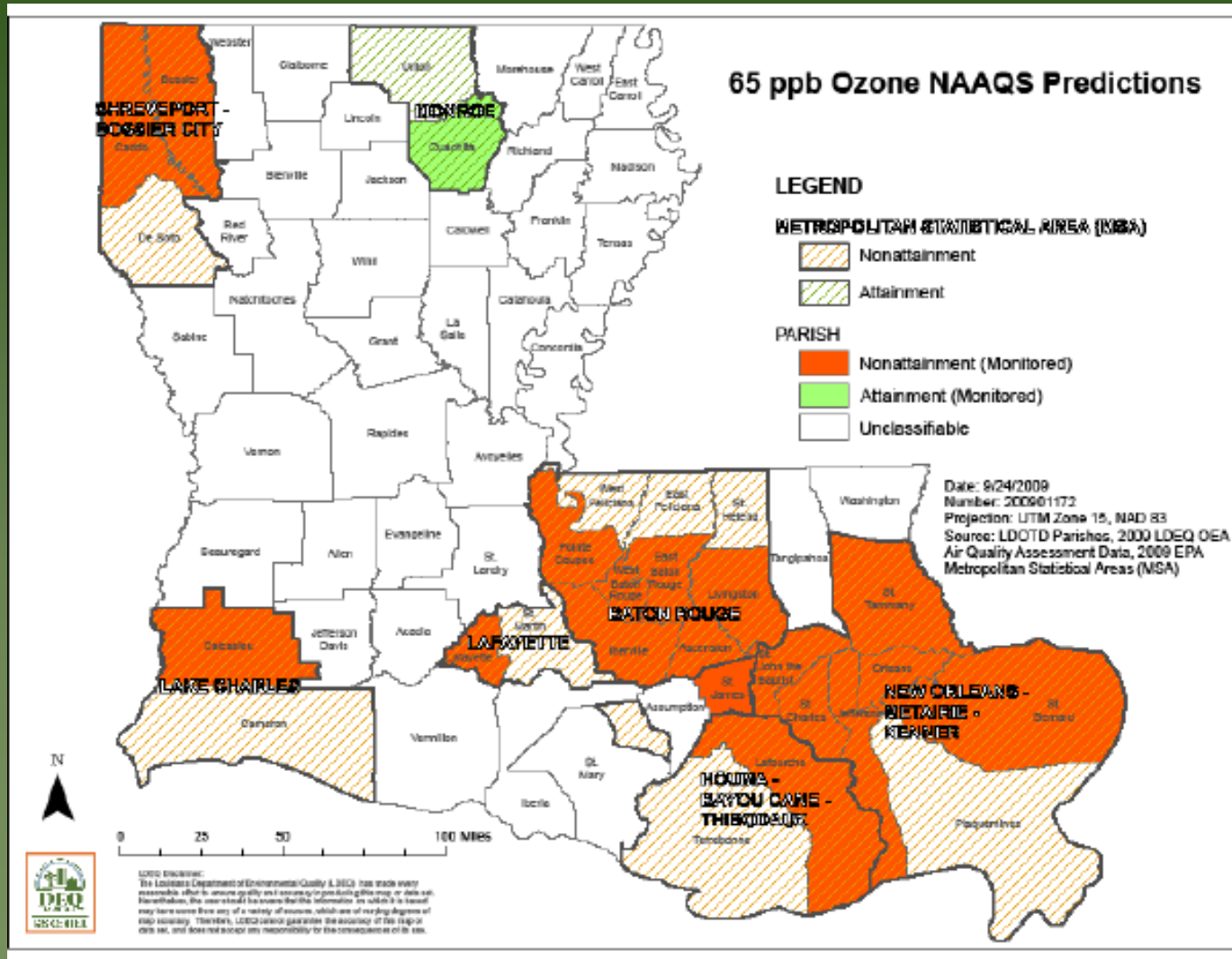
Notes:

1. No monitored counties outside the continental U.S. violate.
2. EPA is proposing to determine compliance with a revised primary ozone standard by rounding the 3-year average to three decimal places.

Ozone



Ozone



Carbon Capture and Sequestration

- ◆ Enhanced oil recovery and enhanced gas recovery has been used for years, by injecting CO₂ underground to maximize removal of fossil fuels (other greenhouse gases are not included in carbon capture and sequestration).
- ◆ Carbon capture and sequestration involves greater quantities of CO₂.
- ◆ On July 25, 2008, EPA proposed carbon capture and sequestration rule at 40 C.F.R. 144 and 146. 73 F.R. 43491.
- ◆ Called “Federal requirements under the UIC Program for Carbon Dioxide Geologic Sequestration Wells.”
- ◆ Rule creates a new Class VI well for geologic sequestration projects.

Carbon Capture and Sequestration

- ◆ Trapping can be by residual gas saturation, solubility trapping or mineral trappers.
- ◆ Site selection and integrity of entire areas are important to minimize leakage and avoid fracturing.
- ◆ EPA estimates that 86 percent of sequestered gas would be in deep salt formations and four percent in depleted oil and gas reservoirs.
- ◆ Risks include leakage, seepage, asphyxiation, earthquakes and pollution of drinking water with carbonic acid. Monitoring is essential.
- ◆ Texas and Louisiana remain primed to pass identical rules when EPA's is final.

Conclusions

- ◆ “[The regs]...are coming to get you” if the legislation doesn’t.
- ◆ This means more data, more records, more engineers, more consultants, more counting, more inspections, more equipment, more reports and more permits at the plant level.
- ◆ This also means more public scrutiny, more regulators, more talking heads, and more auditors at the corporate level.
- ◆ GHG regulation is coming in some form, best to prepare now.