

An Update on Recent EPA Air Regulations and Policies

2010 Combined Heat and Power Partnership Meeting
Austin, Texas
November 2, 2010

James W. Yarbrough
U.S. Environmental Protection Agency
Dallas, Texas



An Update

- National Ambient Air Quality Standards
- Current Greenhouse Gas (GHG) Regulatory Activities

Priorities of EPA

EPA's Seven Priorities for EPA's Future as announced by Administrator Jackson

- Improving Air Quality
- Taking Action on Climate Change
- Cleaning Up Our Communities
- Assuring the Safety of Chemicals
- Protecting America's Waters
- Expanding the Conversation on Environmentalism and Working for Environmental Justice
- Building Strong State and Tribal Partnerships

Ongoing NAAQS Reviews: Current Schedule

POLLUTANT	MILESTONE	
	Proposed	Final
Lead	New schedule being developed	October 15, 2008
NO2 Primary	<u>June 26, 2009</u>	<u>January 22, 2010</u>
SO2 Primary	<u>November 16, 2009</u>	<u>June 2, 2010</u>
Ozone	January 7, 2009	Very soon
CO	<u>January 28, 2011</u>	<u>August 12, 2011</u>
PM2.5	February 2011	October 2011
NO2/SO2 Secondary	<u>July 12, 2011</u>	<u>March 20, 2012</u>

Underlined dates indicate court-ordered or settlement agreement deadlines.

PM2.5 dates are given in the Clean Air Transport Rule proposal (page 45220 of the August 2, 2010 proposed rule 75 FR 45210).

Ozone National Ambient Air Quality Standard is projected to be stricter

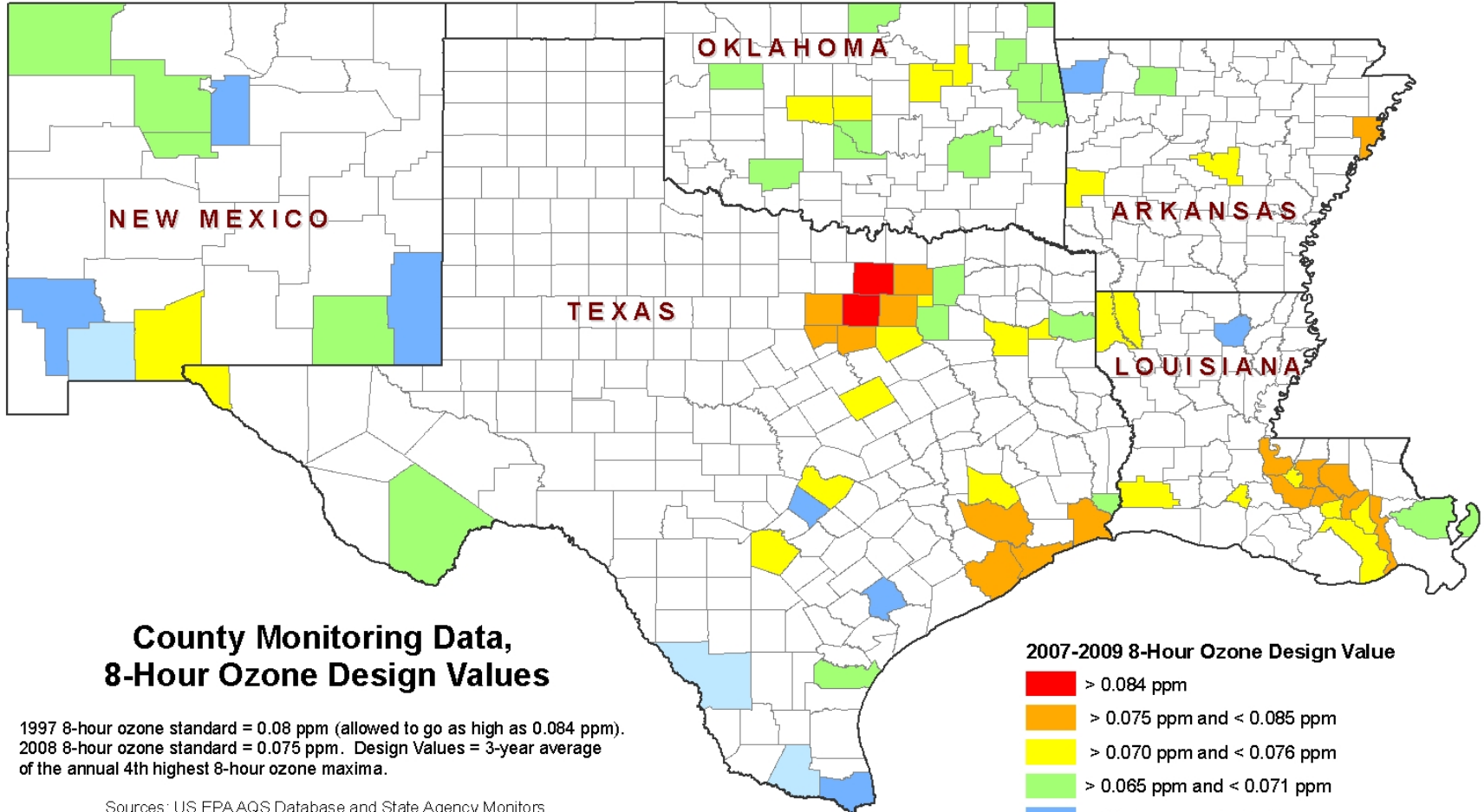
- Ozone exposure = Chronic lung and breathing effects
- January 19, 2010 Proposed standard
 - Primary: Range between 60 and 70 ppb
 - Secondary: Cumulative Biological Index Range between 7 and 15 ppm-hrs
- Comment period closed March 22, 2010
- Final standard expected soon
 - Will include schedule for designations

Estimated Number of Adverse Health Effects Avoided under Alternate Standard Levels in 2020*

	0.070 parts per million	0.060 parts per million
Chronic bronchitis	880	2,200
Nonfatal heart attacks	2,200	5,300
Hospital and emergency room visits	6,700	21,000
Acute bronchitis	2,100	5,300
Upper and lower respiratory symptoms	44,000	111,000
Aggravated asthma	23,000	58,000
Days when people miss work or school	770,000	2.5 million
Days when people must restrict their activities	2.6 million	8.1 million
Avoided premature mortality	1,500 to 4,300	4,000 to 12,000

*Includes benefits of reduced fine particle concentrations associated with illustrative ozone controls applied to meet a primary ozone standard in the proposed range

Region 6 Ground Level Ozone Concentrations



County Monitoring Data, 8-Hour Ozone Design Values

1997 8-hour ozone standard = 0.08 ppm (allowed to go as high as 0.084 ppm).
2008 8-hour ozone standard = 0.075 ppm. Design Values = 3-year average
of the annual 4th highest 8-hour ozone maxima.

Sources: US EPA AQS Database and State Agency Monitors.



EPA Region 6
GIS Support Team
April 14, 2009

20100414ML03



2007-2009 8-Hour Ozone Design Value

- > 0.084 ppm
- > 0.075 ppm and < 0.085 ppm
- > 0.070 ppm and < 0.076 ppm
- > 0.065 ppm and < 0.071 ppm
- > 0.060 ppm and < 0.066 ppm
- < 0.061 ppm





Alternative Measures for SIPs

- EPA Electric Sector Energy Efficiency-Renewable Energy SIP guidance – August 2004
- Limited use 2004-present
- 2010: EPA national workgroup to simplify via “roadmap” manual, to include potential CHP examples

More Information

www.epa.gov/groundlevelozone
(click on regulatory actions)

Region 6 contact: Guy
Donaldson

Donaldson.Guy@epa.gov

214-665-7242

New Sulfur Dioxide Air Standard

- Primary standard set at 75 ppb
- 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations

SO2 Schedule

- Designations in June 2012
(Monitoring/Modeling)
- Basic SIPs due June 2013
- Nonattainment SIPs due February
2014
- Target for all areas attaining the
standard is August 2017

More Information

www.epa.gov/air/sulfurdioxide
(click on announcements)

Region 6 contact:

Carl Young

Young.Carl@epa.gov

214-665-6645

Proposal for Interstate Transport of Air Pollution

- Published August 2
- Nitrogen oxide (NO_x) and sulfur dioxide (SO₂) emissions for the 1997 ozone standards and the 1997 and 2006 PM_{2.5} standards
- A cap and trade program for NO_x emissions would begin in May 2012
- Texas - NO_x emissions for ozone
- Considering Texas effect on PM_{2.5} levels

More Information

www.epa.gov/airtransport

Region 6 contact:

Adina Wiley

Wiley.Adina@epa.gov

214-665-2115

National Greenhouse Gas Reporting Rule

- Took effect January 1, 2010
- Requires reporting of greenhouse gas (GHG) emissions from all sectors of the economy in the United States
- Provides accurate and timely data to inform future climate change policies and programs
- Does not require control of GHG
- First reports due March 31, 2011
- Electronic reporting (E-ggrt) training available via webinar
(www.epa.gov/climatechange)



What GHGs are Reported?

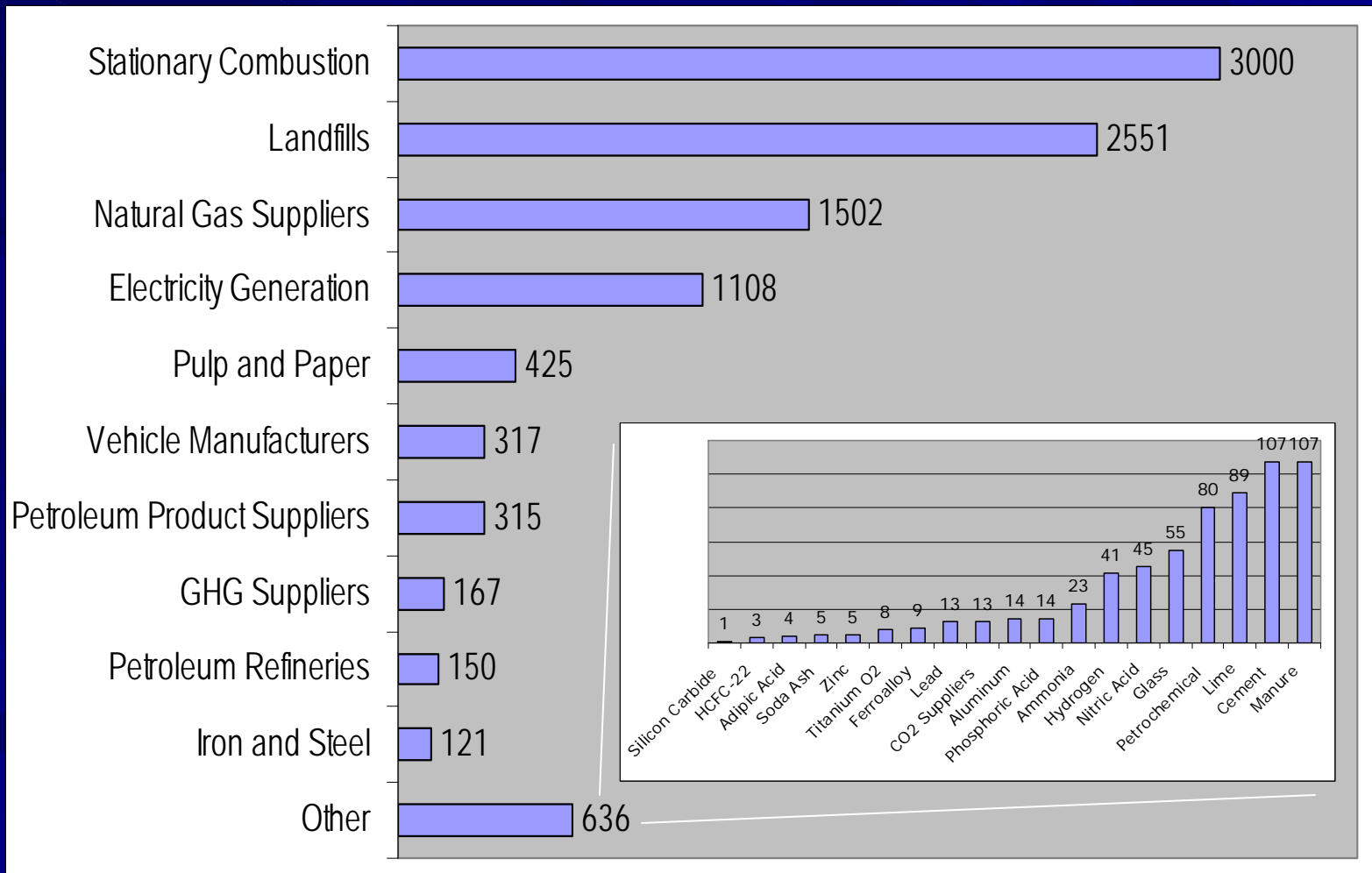
- CO₂
- CH₄ (methane)
- N₂O (nitrous oxide)
- Fluorinated GHGs
 - HFCs (hydrofluorocarbons)
 - PFCs (perfluorocarbons)
 - SF₆ (sulfur hexafluoride)
 - Other fluorinated gases



Key Elements of the Rule

- Annual reporting of GHG by:
 - 25 source categories
 - 5 types of suppliers of fuel and industrial GHG
 - Motor vehicle and engine suppliers (except light duty sector)
- 25,000 metric tons CO₂e per year reporting threshold for most sources; capacity-based thresholds where feasible

About 10,000 U.S. Facilities Covered



Stationary Sources and Proposed Prevention of Significant Deterioration (PSD) and Title V Greenhouse Gas Tailoring Rule

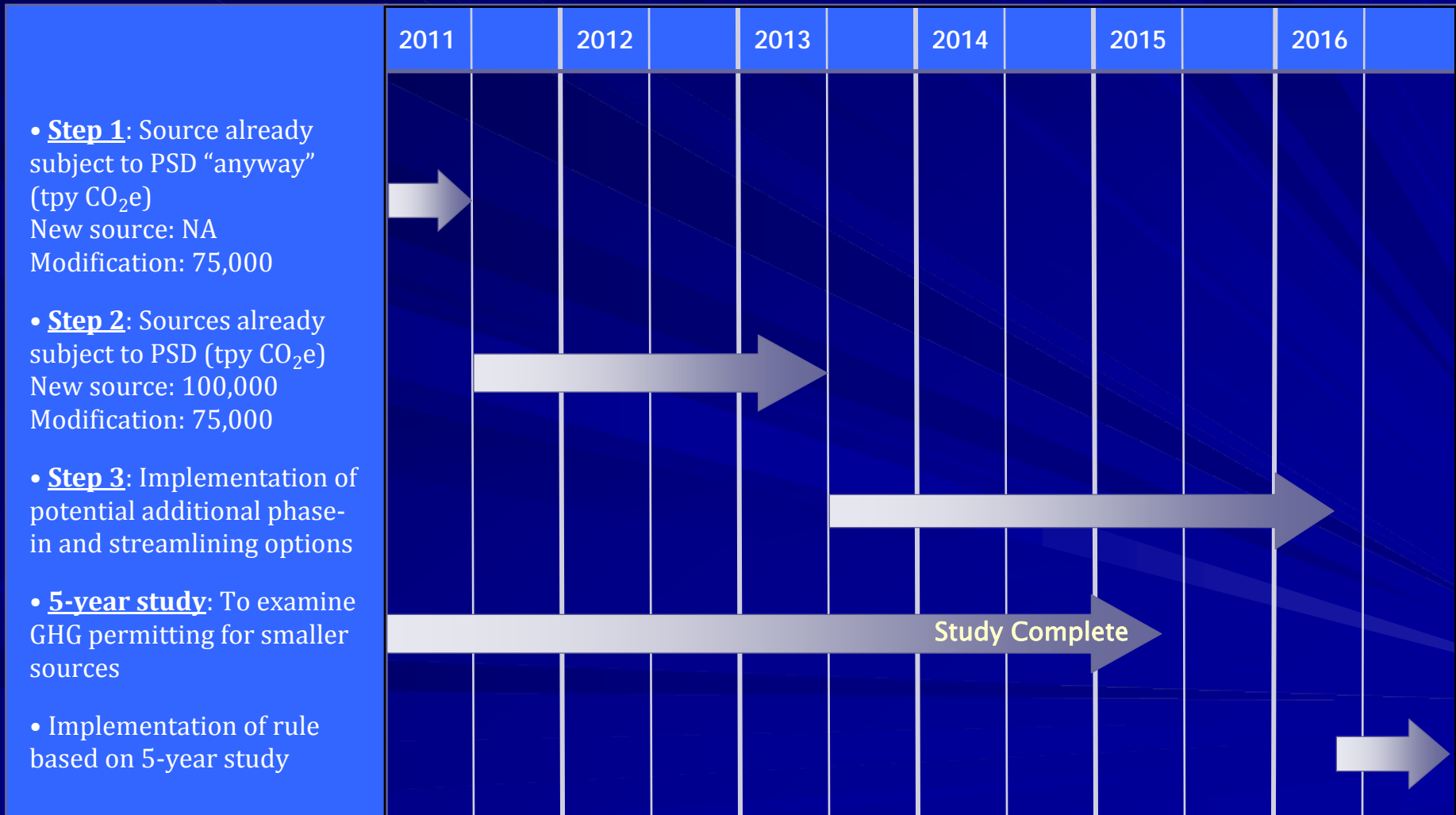
- Issued on May 13, 2010
- “Tailors” the requirements to focus PSD and title V permit requirements on the largest emitting facilities
- Subjects facilities responsible for nearly 70 percent of the national GHG emissions from stationary sources to CAA permitting requirements
 - This includes the nation’s largest GHG emitters—power plants, refineries, and cement production facilities
 - Small farms, restaurants, and commercial facilities are shielded by this rule

Pollutants Covered

- Sets thresholds for GHG emissions, addressing emissions from six GHGs:
 - Carbon dioxide (CO₂)
 - Methane (CH₄)
 - Nitrous oxide (N₂O)
 - Hydrofluorocarbons (HFCs)
 - Perfluorocarbons (PFCs)
 - Sulfur hexafluoride (SF₆)
- The aggregate sum of these six GHGs is the identified air pollutant in EPA's Light-Duty Vehicle Rule, and the associated Endangerment Finding and Cause or Contribute Finding
- To determine applicability, a source's GHG emissions are calculated as the sum of the six gases on a CO₂ equivalent (CO₂e) basis and compared against the relevant threshold



Permitting Steps under the Tailoring Rule





Implementation Support

- GHG Permitting Training
- RACT/BACT/LAER Clearinghouse Enhancements
 - Formatting improvements to include GHG control and test data, links to State permits, GHG message board
- ORD GHG Mitigation Strategies Database
 - Including performance and cost data on current/developing GHG control measures

SIP Call and FIP

- Purpose: Ensures that a permitting authority is available to issue permits under the CAA NSR PSD program for sources of GHGs.

Region 6 GHG Regulatory Status

- Arkansas
 - Does not have regulatory authority to issue PSD permits for GHGs
 - Requested early FIP deadline
 - EPA will be permitting authority for GHGs on January 2, 2011 unless Arkansas accepts delegation of FIP
- Louisiana
 - Permitting authority for GHGs
 - Rulemaking will be effective December 20, 2010 to adopt Tailoring Rule thresholds
- New Mexico
 - Permitting authority for GHGs
 - Rulemaking will be effective December 8, 2010 for Tailoring Rule thresholds
- City of Albuquerque
 - Permitting authority for GHGs
 - Rulemaking will be effective January 8, 2011 for Tailoring Rule thresholds
- Oklahoma
 - Permitting authority for GHGs
 - Emergency Rule to adopt Tailoring Rule thresholds in place by January 2, 2011
- Texas
 - Does not have regulatory authority to issue PSD permits for GHGs

State rulemaking effective dates are estimates based on anticipated adoption dates. Rulemaking dates are subject to change.

Joint Rulemaking to Establish Vehicle GHG Emissions and Combined Automotive Fleet

Efficiency (CAFÉ) Standards

- Establishes Vehicle GHG Emissions and CAFÉ Standards
 - **EPA**: standards for emissions of greenhouse gases under the Clean Air Act
 - **DOT's National Highway Traffic and Safety Administration**: standards for fuel economy
- This rule was finalized April 1, 2010
- Effective January 2, 2011 for Model Year 2012



Joint Rulemaking

- Standards apply in Model Years 2012-2016
 - passenger cars
 - light-duty trucks
 - SUVs
 - Mini-vans
- Responsible for almost 60% of all U.S. transportation-related GHG emissions
- Allows manufacturers to build a single light-duty national fleet.

Heavy Trucks and Buses + Further Standards for Light duty Vehicles: October 25, 2010 announcement

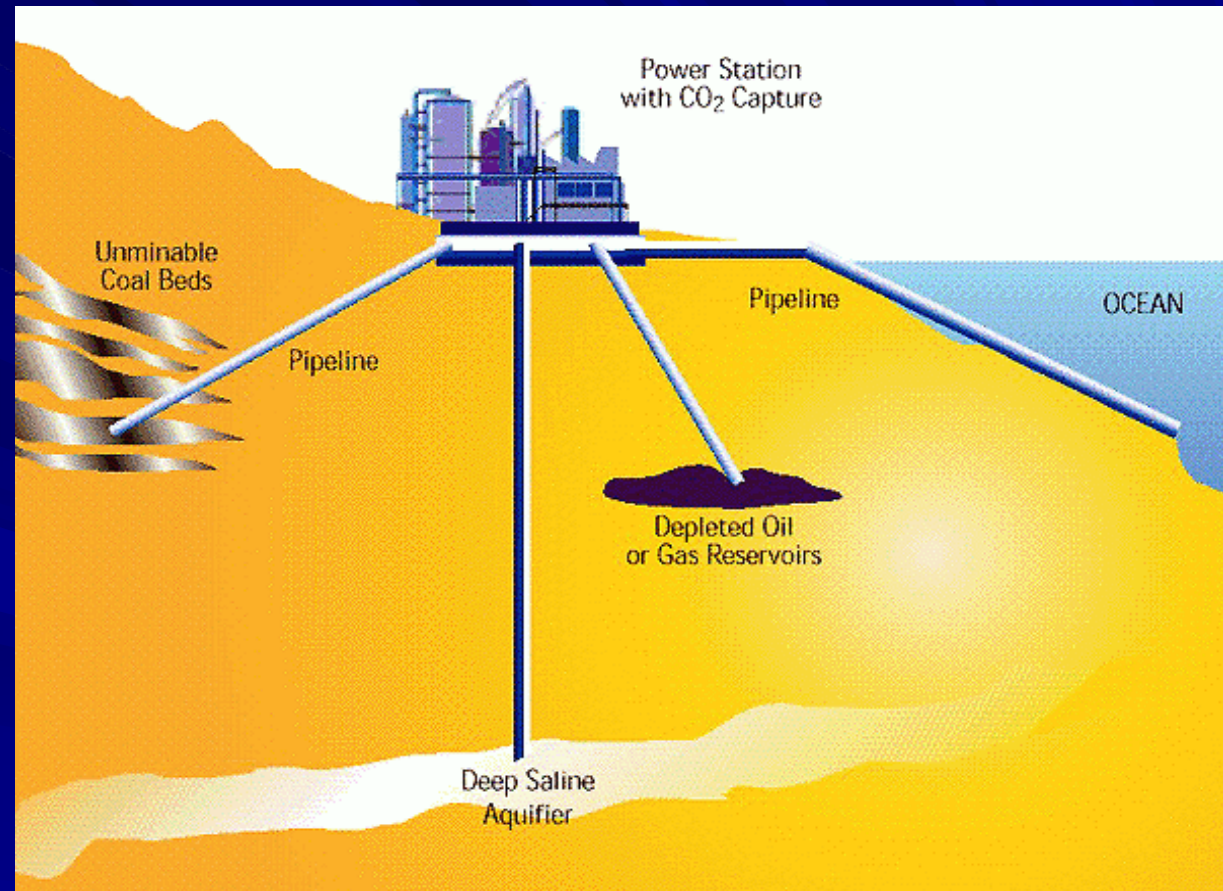
- EPA and NHTSA will work together on national GHG and fuel efficiency standards for heavy-duty vehicles that will begin with model year 2014.
 - Savings over lifetime of vehicles produced in 1st 5 years: saves 250 million mt of GHG, 500 million barrels of oil
- Intent to produce national GHG and fuel efficiency standards for LDVs for model year 2017 and beyond

Renewable Fuel Standard 2 Rule

- Final rule signed February 3, 2010
- Effective July 1, 2010, but applies to the full calendar year
- Energy Independence and Security Act (EISA) 2007 designed to reduce nation's reliance on foreign oil and address global climate change
 - 36 billion gallons (bg) of renewables in 2022
 - 11.1 bg in 2009; 12.95 bg in 2010

Possibilities for CO₂ Sequestration

- Oceanic
- Terrestrial
- Geologic



Geologic sequestration is the most promising option of these and it involves deep well injection

Geosequestration (GS) Rule

- July 25, 2008 Proposed rule for Class VI GS wells - extended comment period closed 12/24/08 and thousands of comments were received
- August 31, 2009 Notice of Data Availability (NODA) - comment period ended 10/15/09
- Provided an update on ongoing projects and research
- Requested comments on the use of an injection depth waiver allowing injection into non-USDW located above the lowermost USDW
- Requested an update on current state GS regulation activities
- April 15, 2010 Projected Final Agency Review (FAR)
- OMB: congruent timing and review of Class VI GS rule and greenhouse gas (GHG) mandatory reporting rule (MRR) to ensure there are no redundant burdens
- EPA is coordinating MRR Subpart RR and the GS Rule
- GS Rule may be finalized by late 2010



National Environmental Policy Act

- “...CEQ proposes that the NEPA process should incorporate consideration of both the impact of an agency action on the environment through the mechanism of GHG emissions and the impact of changing climate on that agency action.”

- DRAFT NEPA GUIDANCE ON CONSIDERATION OF THE EFFECTS OF CLIMATE CHANGE AND GREENHOUSE GAS EMISSIONS, February 18, 2010

Executive Order 13514

- Affects all federal agencies – “lead by example”
- Reduce GHG emissions by
 - Energy conservation
 - Fleet management efficiencies (**reduce petroleum use by at least 2% per year through 2020**)
 - Renewable energy
 - Inventorying and reporting GHG emissions
- Sets new performance requirements
 - Extends water conservation requirements (**26% reduction by 2020**)
 - Extends high-performance building requirements (by 2020, ensure that all new federal buildings are designed to achieve **zero-net-energy by 2030**)
 - Sets stormwater management guidelines
 - Sets solid waste reduction targets (**by 2015, divert at least 50% of non-hazardous waste**)

For more information:

Yarbrough.James@epa.gov

Telephone: 214-665-7232