

# Environmental Initiatives – Recent Developments

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# Overview of Today's Presentation

- Climate Change Developments
  - *Massachusetts v. EPA* and EPA's Proposed Endangerment Finding
  - Post – *Massachusetts* Proceedings
  - EPA's Proposed Greenhouse Gas Reporting Rule
  - Comprehensive Climate Change Regulation
- Coal
  - Appalachian Coal Mining Developments
  - EPA's Proposed Carbon Sequestration Rule
- Renewable Portfolio Standards

***Massachusetts v. EPA* and  
EPA's Proposed  
Endangerment Finding**

# *Massachusetts v. EPA*

- Apr. 4, 2007 Supreme Court decision
- Held: CO<sub>2</sub> is a “pollutant” under the Clean Air Act
- EPA must determine if GHG from motor vehicles either:
  - Causes or contributes to air pollution that endangers public health or welfare
  - Does not cause or contribute to air pollution endangerment
  - Science is too uncertain to make a reasoned judgment

# EPA Response to *Massachusetts v. EPA*

- Initially, EPA postponed any decision in response to Energy Independence and Security Act of 2007's renewable fuels mandate
- Released ANPR on July 11, 2008
  - Discussed issues/approach for regulating GHGs under CAA
  - Did not propose any specific regulatory program nor propose action on endangerment mandate from Supreme Court
  - “Parade of horrors” if GHGs regulated under CAA
  - Invitation for Congressional action

# EPA Proposed Endangerment Finding

- April 17, 2009: GHG emissions can “reasonably be anticipated to endanger” public health and welfare
  - Higher ground level ozone concentrations
  - Increased drought
  - More heavy downpours and flooding
  - More frequent and intense heat waves and wildfires
  - Greater sea level rise
  - More intense storms
  - Harm to water resources, agriculture, wildlife and ecosystems
  - National security challenges from increased resource scarcity
- Emissions from mobile sources cause or contribute
- No regulations proposed
- Rumored to be finalized by Mar. 2010

# ***Post-Massachusetts*** **Proceedings**

## *Deseret Power*

- Challenge to coal-fired power plant permit in Utah
- Sierra Club: Permit should have contained a CO<sub>2</sub> limit because
  - Massachusetts held CO<sub>2</sub> is an “air pollutant” under CAA
  - Permits limits are required for every pollutant “subject to regulation” under the CAA
- EPA: Historically we have not interpreted CO<sub>2</sub> to be a pollutant subject to regulation under CAA
- Held: EPA is not bound by historical interpretation, could continue to interpret scope of “subject to regulation”
- Remanded for determination whether CO<sub>2</sub> limit appropriate

# Johnson Memorandum

- Then-EPA Administrator Johnson (Dec. 18, 2008):
  - CO<sub>2</sub> is not a regulated pollutant
  - EPA will not require Best Available Control Technology (BACT) review or permit limits for CO<sub>2</sub>
- Now-Administrator Jackson (Feb. 17, 2009):
  - EPA will reconsider Johnson Memorandum
  - Johnson Memorandum will remain in place
  - Permit authorities should not assume Johnson Memorandum is “final word” on appropriate interpretation of CAA

# Inevitable Clean Air Act Regulation?

- EPA is preparing mobile source GHG rule as result of endangerment finding
- Administrator Jackson (Aug. 12, 2009): After mobile source rule finalized, CO<sub>2</sub> will become a “regulated pollutant” under the CAA, although not before
- Consequences:
  - CO<sub>2</sub> emissions will be subject to Prevention of Significant Deterioration (PSD) review
  - New or modified sources will get CO<sub>2</sub> permit limits defined by BACT
- EPA is also working on NSPS for CO<sub>2</sub>

# Inevitable Clean Air Act Regulation?

- Congress can cut off the CAA regulation of CO<sub>2</sub> with new climate change legislation, but . . .
- Aug. 31, 2009: EPA sends proposal to White House for how it will regulate GHGs under CAA permit programs for stationary sources
  - Generally, 25,000 metric ton CO<sub>2</sub>/yr will be permitting threshold for GHG emissions
  - Does CAA allows a threshold above 250 TPY?
  - Signals EPA willingness to act under CAA if Congress does not pass comprehensive climate change regulatory program

# **EPA's Proposed Greenhouse Gas Reporting Rule**

# Background

- Required by FY2008 Consolidated Appropriations Act
- How will reported emissions data be used?
  - Create more robust national GHG registry
  - Inform GHG policy development
  - Improve understanding of factors influencing GHG emission rates at facility level
  - Improve data on sources not currently well understood
  - Track GHG emission trends
  - Raise awareness of GHG emissions among reporters

# Who Is Regulated?

- Direct emitters of GHGs, generally at rates > 25,000 metric tons CO<sub>2</sub>e/yr (tCO<sub>2</sub>e/yr)
- Fossil fuel suppliers
- Industrial gas suppliers
- Vehicle manufacturers
- A facility may have to report as both emitter and supplier (e.g., a refinery)
- Once in, always in
- Estimated 13,000 reporters, 85-90% of nation's GHGs

# Which GHGs Are Included?

<u>GHG</u>	<u>CO<sub>2</sub>e (GWP)</u>
CO <sub>2</sub>	1
Methane CH <sub>4</sub>	21
Nitrous oxide N <sub>2</sub> O	310
Sulfur hexafluoride SF <sub>6</sub>	23,900
Hydrofluorocarbons (HFCs)	12 – 17,400 (varies)
Perfluorocarbons (PFCs)	6,500 – 17,340 (varies)
Other fluorinated gases NF <sub>3</sub> , (HFEs)	11 – 17,200 (varies)

# When Would Reporting Begin?

- Facilities and suppliers:
  - Begin collecting data on January 1, 2010
  - Reporting for CY2010 by March 31, 2011
- EGUs in Acid Rain Program: continue to report quarterly
- New facilities or facilities newly subject to rule as a result of a physical or operational change:
  - Report for partial CY containing first month of operation
  - Each full CY thereafter

# Who Has to Report?

- Categorical reporters (“all in” without regard to emission amounts) – report at facility level
  - EGUs in Acid Rain Program
  - Petrochemical production
  - Petroleum refineries
  - Active underground coal mines (with quarterly CH<sub>4</sub> sampling of ventilation systems by MSHA)

# Who Has to Report?

- Categorical reporters (“all in” without regard to emission amounts) – report at corporate level
  - Coal suppliers
    - Active underground and surface coal mines
    - Coal importers, exporters
    - Reclaimers of waste coal
  - Producers, importers, exporters of coal-based liquids
  - Refiners, importers, exporters of petroleum products
  - Suppliers of natural gas (LDCs)
  - NGL suppliers (gas processing plants that separate NGLs)
  - Suppliers of CO<sub>2</sub>

# Who Has to Report?

- **Threshold Reporters** (GHG > 25,000 tCO<sub>2</sub>e/yr) – report at facility level
  - Stationary fuel combustion
  - EGUs (other than in Acid Rain Program)
  - Ethanol production
  - Hydrogen production (merchant)

# Upstream Petroleum/Natural Gas Reporters

- Natural gas processing facilities
- Natural gas transmission compression facilities
- Underground natural gas storage facilities

But not (at least as proposed)

- Onshore petroleum and natural gas production
- Crude oil transportation facilities
- Pipelines

# How Are Emissions Determined?

- Combination of
  - Measurement with CEMs if present
  - Facility-specific calculations
- Specific techniques identified in subpart applicable to each source category
- Includes SSM emissions for some sources
- Can exclude emissions from combustion of biomass fuels
- No third-party verification required

# Reporting Mechanics

- Reports submitted electronically
- New facility numbers to be provided by EPA
- Emissions to be reported in metric units (generally, kg or metric tons per year)
- Reported as both GHG and CO<sub>2</sub>e per time

# Path Forward

- Final rule undergoing OMB review
- EPA reportedly will finalize rule in October 2009
- Rule will require data collection to begin in 2010, first reports due in March 2011

# Comprehensive Climate Change Regulation

# Why Climate Change Legislation Now?

- Public awareness and concern about climate change
- Criticism of US for abandoning Kyoto Protocol
- Creation of regional GHG programs within US
- President Obama's campaign commitment
- Concern about regulation under CAA

# American Clean Energy and Security Act of 2009 (ACESA)

- Title I: Combined energy efficiency and renewable electricity standards for electric utilities
- Title II: Energy efficiency programs and standards across economy, grants and loans
- Title III: Economy-wide cap and trade regulatory program
- Title IV: Assistance to domestic energy-intensive industries to address import competition, increase exports of clean energy technology, foreign aid
- Title V: Dept. of Agriculture program for issuing offsets for improved agriculture, forestry practices

## Title III Overview

- Reduce GHG emissions with declining number of allowances issued each year
- Allowances and other credits freely tradable
- Goal: 17% reduction over 2005 levels by 2020, 42% by 2030, 83% by 2050
- Applies to same GHGs as EPA's reporting rule
- Generally exempts sources < 25,000 tCO<sub>2</sub>e/yr
- Point of regulation varies by industry
- Program will become part of CAA but ACESA largely preempts other parts

# The Market for Allowances

- Entities with excess allowances can sell to entities with insufficient allowances
- EPA registers and tracks all transfers
- Decreasing number of allowances (~3%/yr) means ever-increasing allowance price
- Allowances initially issued at no cost to certain industries, including electric and gas utilities, merchant coal plants, small refiners, state governments
- Free allowances phased out by 2025
- Other allowances will be auctioned
- Auction proceeds initially to low income consumers, eventually to all individual taxpayers

# Offset Credits in lieu of Allowances

- Covered entity can generate offset credits in sectors not subject to emission caps, like agriculture, forestry
- Up to 2 B tCO<sub>2</sub>e/yr
- Has effect of inflating nominal GHG emission caps by 30% or more
- Offset credits can be issued by EPA, Dept. of Agriculture
- Credits may be issued to “early action” entities reducing GHGs in first 3 years of program
- Credits also may be issued to international CDM projects
- All offsets must be verified by accredited third parties

# Cost Containment and Flexibility

- Strategic reserve ~2.5B tCO<sub>2</sub>e/yr managed by EPA
  - About 2% of 2012 – 2050 total allowance pool
  - Auctioned quarterly at minimum \$28 with future escalators
  - Only covered entities can purchase, and only up to 20% of their requirements
- Unlimited banking for future years
- Can borrow against future allotments:
  - Against next year's allotment without interest
  - Against up to 5 years in future for up to 15% of requirements, subject to annual 8% in-kind interest payment
- Can also hold unlimited qualified international allowances authorized by EPA in lieu of domestic allowances

# Other Emission Reductions

- Allowances reserved for reducing deforestation outside US
  - 5% of pool 2012 – 2025, 2 – 3% thereafter
  - Distributed by EPA as in-kind funding to developing countries, NGOs, and private groups
- EPA emission standards for “uncapped” stationary sources between 10,000 and 25,000 tCO<sub>2</sub>e/yr
  - Including sources of methane > 10,000 tCO<sub>2</sub>e/yr
  - Cost of controls cannot exceed cost of equivalent emission allowances if sources subject to cap and trade program

# GHG Reporting

- Requires reporting of GHG emissions, as in EPA rule
- Significant differences from EPA rule
  - Quarterly instead of annual reporting
  - Applies to many sources > 10,000 tCO<sub>2</sub>e/yr
  - Slightly different equivalence factors for non-CO<sub>2</sub> GHGs
- Likely to be dropped if EPA finalizes its GHG reporting rule as contemplated

# Exemption of Other CAA Requirements

- GHGs cannot be listed as air pollutant or hazardous air pollutant based on climate change concerns
- No “new source review” for GHGs after January 1, 2009
- GHGs aren’t considered for Title V permit applicability
- But covered entities otherwise subject to Title V must include ACESA requirements in Title V permit

# Preemption of State and Regional Programs

- Partial preemption
- 2012 – 2017: Moratorium on state and regional GHG emission caps
  - If caps stated in terms of tCO<sub>2</sub>e/yr
  - But not emission performance standards
  - And not any sources not subject to emission cap under ACESA
- Existing allowances under RGGI, WCI, Cal. Assembly Bill 32 can be traded in for federal allowances
  - Exchanged at cost to acquire them, not ton for ton
  - Federal allowances so distributed are subtracted from pool that would otherwise be auctioned
- CA estimates federal preemption would create 27M tCO<sub>2</sub>e/yr shortfall in 2020

# Allowance Market Oversight

- Estimated \$50 B market in 2012, to increase later
- Market for allowances and derivatives to be overseen by:
  - FERC: Trading in government-issued allowances and offsets
  - CFTC: Any related derivatives
- Agencies directed to promulgate rules to:
  - Foster transparency
  - Limit or eliminate counterparty risk, market power concentration
- Agencies given existing enforcement authority of CFTC
- Fraud, market manipulation, false statements: felony up to 20 years in prison, fines of up to \$25 million

# Enforcement

- Violations subject to full range of CAA enforcement
- Administrative and civil penalties up to \$37,500 per day
- Criminal fines, imprisonment, potential debarment
- Citizen suits

# Prospects for Passage

- Will the Senate act this year?
- Considerations for:
  - Sen. Boxer is reportedly close to finalizing a proposal
  - Obama administration wants legislation before Copenhagen climate summit in December
- Considerations against:
  - Health care debate is diverting attention from climate change
  - Energetic industry opposition to climate change legislation

# Coal

# Appalachian Coal Mining Permitting

- June 11, 2009 MOU
- Agencies
  - EPA
  - DOI
  - US Army Corps of Engineers
- Applies to coal mine permitting in:
  - Kentucky
  - Ohio
  - Pennsylvania
  - Tennessee
  - Virginia
  - West Virginia

# June 11, 2009 Memorandum of Understanding

- NWP 21 cannot be used if fill deposited in streams
- Strengthen Sec. 414(b)(1) environmental review
- Improve oversight of issuance of Sec. 402 permits and Sec. 401 water quality certifications
- Issue guidance on mitigation of stream impacts
- Clarify applicability of waste treatment exception for treatment facilities built in waters of US
- DOI guidance re Stream Buffer Zone rule
- Enhance OSM oversight of and ability to require changes to state SMCRA permits

# Related Developments

- MOU calls for actions to be completed by end of 2009
- June 11, 2009 EPA/Corps and Jackson memos
  - EPA will coordinate with US Army Corps on coal mining permitting
  - EPA may be more willing to exercise authority to veto permits if agreement cannot be reached
- Feb. 5, 2009: Patriot Coal agrees to pay \$6.5 MM to settle alleged CWA violations
  - Injunctive relief includes procedures touted as model for Appalachian mining
  - Third party compliance audits, company-wide EMS, restoration of 5 streams, annual WET testing at 10 outfalls

## Coal-Fired Utility NSR Litigation (con't)

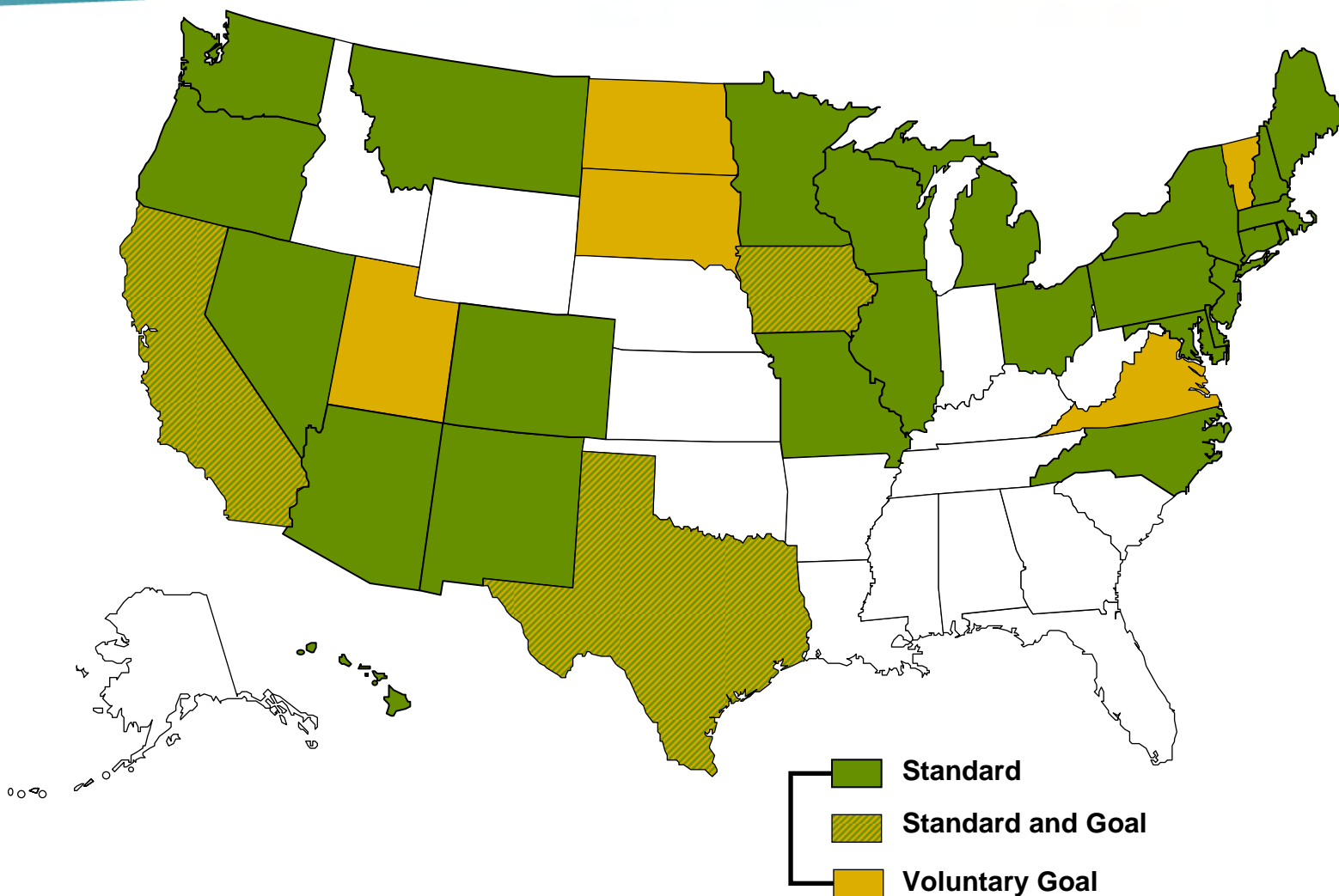
- Aug. 27, 2009: US, Illinois file suit against Midwest Generation, alleging violations of NSR rules
  - Midwest Generation had been noticed of citizen suit
- Aug. 11, 2009: Ohio Edison will repower 2 Ohio boilers with mostly biomass fuel (< 20% low-S coal)
  - First NSR settlement requiring reduction in GHG emissions

# EPA Proposed Carbon Sequestration Rule

- Proposed July 25, 2008
- Final rule expected 2010 or 2011
- Key elements of proposal:
  - New class of injection well (Class VI)
  - Injection below lowermost formation containing USDW
  - Enhanced construction techniques for injection wells
  - Continuous internal mechanical integrity testing
  - Annual demonstrations of external mechanical integrity
  - Testing and monitoring plan to ensure no danger to USDWs
  - 50 year post-injection care period
  - Financial assurance for well plugging, post-injection care, site closure
  - Grandfathering of existing Class I, II, and V wells if no danger to USDWs

# Renewable Portfolio Standards

# States with Renewable Portfolio Standards



Source: Union of Concerned Scientists

# Examples of Standard Types

- Percentage of power to be renewable by a date certain
  - Maine: 40% of state's power to be provided by renewable sources by 2017
  - California: 33% of state's power to be provided by renewable sources by 2020
- Specific measure of renewable power by date certain
  - Texas: 5880 MW of renewable power on line by 2015
  - Minnesota: 1250 MW of renewable power on line by 2013
- Load growth over specified period
  - Vermont: Amount of renewable power provided by 2012 must equal load growth from 2005 - 2012

# It's Easy to Set a Standard, but . . .

- 2009 SNL Energy study
  - Only 5 of 28 states on track to meet RPS targets over 2010 – 2012 period
  - Utilities in 28 states with standards currently generating 5.3% renewable power, short of 2012 7.3% target
  - Projects under construction would increase renewable generation to only about 6%
- Current profile of renewable power on line
  - 67% wind
  - 17% hydroelectric
  - 15% solar and biomass

# Questions