



Climate Change & Energy:

*How concern over climate change is shaping
US energy policy*

Overview

- **Why U.S. Climate Change Matters**
- **Federal Climate Change Legislation**
- **Federal Energy Legislation**
- **Federal Programs**
- **Positions of the Presidential Candidates**
- **What the Future Holds**

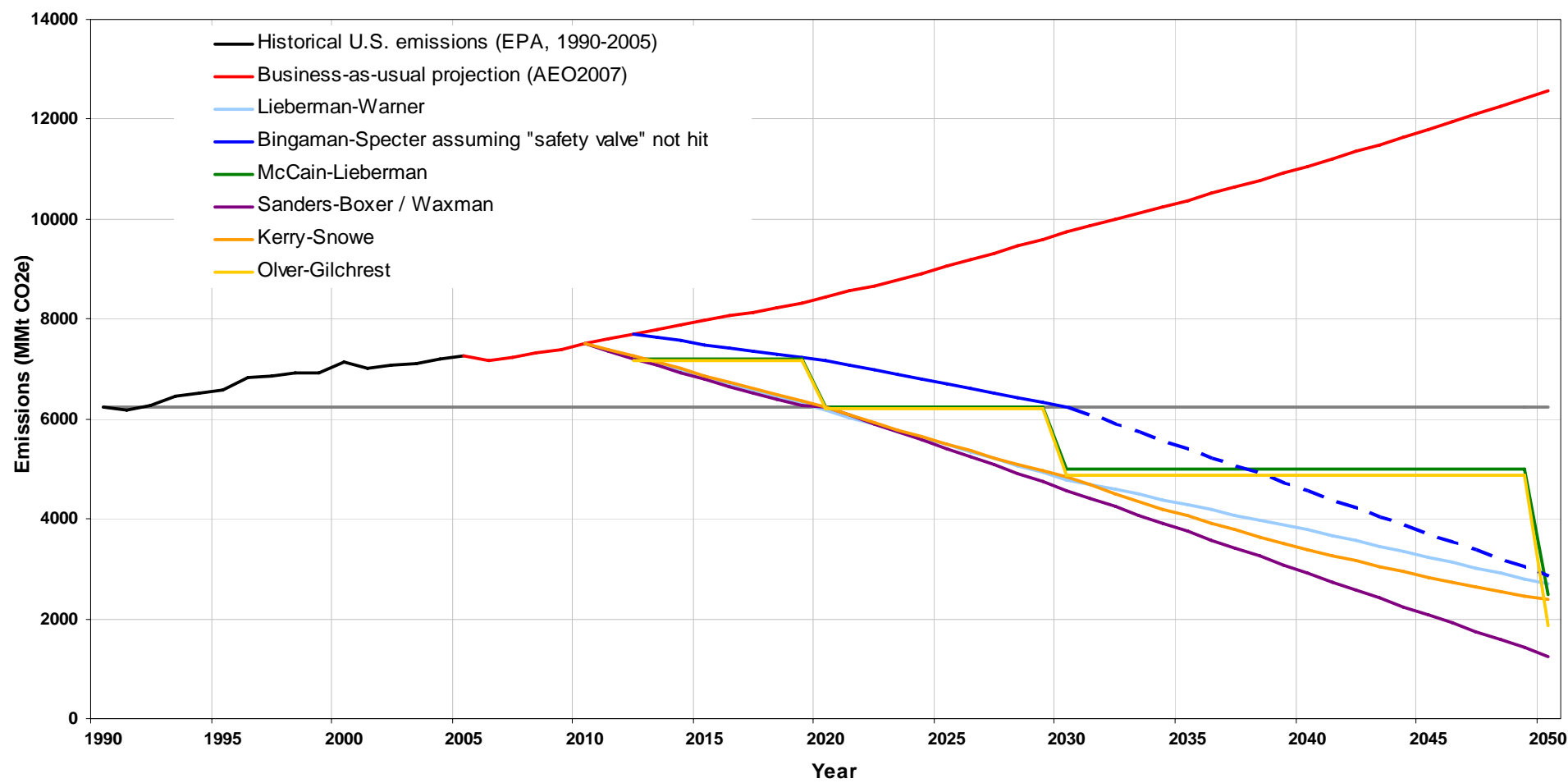
U.S. Energy Use and Climate Impacts

- **U.S. is largest oil consumer in the world: approximately 20 million barrels per day (of 73 million barrels produced)**
- **U.S. is largest importer in the world: approximately 13.5 million barrels per day of crude and refined products**
- **Approximately 63% of imported oil is used for transportation**
- **Approximately 71% of electric generation in the U.S. is from coal (20% from nuclear)**
- **GHG emissions from the U.S. are approximately 7.2 billion tons per year (~ 10% of world emissions)**



Federal Climate Change Legislation

Comparison of Economy-wide Cap-and-Trade Emissions Targets Includes Legislation Introduced in the 110th Congress



Dingell and Boucher Discussion Draft (Oct. 7, 2008)

- **Amends the Clean Air Act**
 - Title VII, "Greenhouse Gas Cap and Trade Program"
 - Title VIII, "Greenhouse Gas Standards"
- **Cap-and-trade program covering 88% of US GHG emissions**
 - All electricity generators
 - Entities emitting greater than 25K tons CO_{2e}
 - Smaller GHG-producing entities covered by industry-specific standards

Dingell and Boucher Discussion Draft (Oct. 7, 2008)

- **Emission Caps**

- 6% below 2005 levels by 2020
- 44% below 2005 levels by 2030
- 80% below 2005 levels by 2050

- **Allowance Allocation**

- THE political issue of this legislation
- Discussion draft contains 4 options for allowance distribution

Dingell and Boucher Discussion Draft (Oct. 7, 2008)

- **Energy Efficiency and Clean Technology**
 - Several provisions encourage state-initiated energy efficiency
 - Improvement in building codes - 30% by 2010 & 50% by 2020
 - Encouragement of CCS implementation and renewable energy sources
- **New coal-fired power plants**
 - Specific performance standards
 - CCS requirements within timeframe based on commercial availability
- **Offset Credits**
 - May be used to cover compliance obligations
 - Up to 5% for 2013-17, then up to 35% by 2024
 - International and domestic credits may be used

House Committee on Energy and Commerce

- **Support in the House is likely to be strong**
 - Oct. 2 - More than 150 members of Congress signed a letter stating that a comprehensive climate-change bill should be economy wide and use an emissions trading scheme to cut GHG emission 80% below 1990 levels by 2050.



Federal Energy Legislation:

*Promoting Renewable Energy and Energy
Efficiency Through Incentives and
Regulation*

Use of Financial Incentives

- **Numerous financial incentives have been created through federal legislation to promote renewable energy and energy efficiency projects**
 - Tax deductions, exemptions, & credits
 - Grant Programs
 - Loan Programs
- **Incentives are available for industrial, commercial, and residential use**

Renewable Electricity Production Tax Credit

- **Most recently renewed in The Energy Improvement and Extension Act of 2008 (Bailout Bill)**
- **Corporate tax credit for commercial and industrial electricity producers**
- **Eligible Renewable Energy Technologies**
 - Landfill Gas, Wind, Biomass, Hydroelectric, Geothermal, Municipal Solid Waste, Hydrokinetic Power, Refined Coal, Indian Coal, Tidal Energy, Wave Energy, Ocean Thermal
- **Generally applies to first 10 years of operation**
 - 2.0¢/kWh for wind, geothermal, closed-loop biomass
 - 1.0¢/kWh for other eligible technologies

Clean Renewable Energy Bonds (CREBs)

- **Created under Title XIII of EPAct 2005**
- **Financing mechanism for public sector renewable energy projects**
 - \$400 million in CREBs financing available for funding 312 eligible projects in 2008
- **CREBs may be issued by electric cooperatives, government entities, and certain lenders**
- **Workings of the CREBS**
 - Issued with 0% interest rate
 - Borrower pays back only the principal of the bond
 - Bondholder receives federal tax credits in lieu of the traditional bond interest.

Use of Federal Regulation

- **Energy Independence and Security Act of 2007**
 - Renewable Fuel Standard
 - Refiners, importers, and blenders must use certain volume of renewable fuel or purchase credits
 - 9 billion gallons in 2008 to 36 billion gallons by 2022
 - Fixed volume requirements on different fuel types
 - Creates Renewable Identification Numbers (RINs)
 - Energy Efficiency
 - New efficiency requirements for household appliances and government buildings
 - CAFE Standards
 - Fleet-wide average of 35 miles per gallon by 2020



What the Future Holds: *The Candidates' Plans for Climate Change*

Where they Stand on Climate Change

■ **Emission Reductions**

- McCain - 1990 levels by 2020 and 60% below 1990 levels by 2050
- Obama - 1990 levels by 2020 and 80% below 1990 levels by 2050

■ **Allowance Allocation**

- McCain - mix of free distribution and auction
- Obama - 100% auction

■ **Offset Credits**

- McCain - use of international and domestic offsets
- Obama - limited use of offsets for emissions

Where they Stand on Climate Change

■ Renewable Energy

- McCain - supports renewable energy development, but with no specific targets
- Obama - 36 billion gal of renewable fuel by 2022; establishment of a Low-Carbon Fuel Standard; 10% mandatory production by 2012 and 25% by 2025; extension of Production Tax Credit

■ Carbon Capture and Storage

- McCain - \$2 billion per year for next 15 yrs on R&D
- Obama - development of 5 coal-fired plants with CCS with help from DOE

Where they Stand on Climate Change

- **Clean Technology**

- McCain - \$300 million for more efficient batteries for hybrids
- Obama - \$1 billion per year in grants to help facilities modernize and train employees

- **Ethanol**

- McCain - Opposes ethanol subsidies
- Obama - Supports ethanol subsidies

- **International Involvement**

- Neither candidate has committed

Future Predictions

- **Economy-wide cap-and-trade legislation within the next 2-3 years, regardless of who wins the Presidency**
 - Both candidates support cap-and-trade legislation
 - A large portion of Congress wants legislation
- **Reduction Targets**
 - 1990 levels by 2020 and 60%-80% below 1990 by 2050
- **US participation in the UNFCCC**
 - US not likely to participate in 2012
 - US participation may occur in 2020



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