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 CO2e
  - Smaller GHG-producing entities covered by industry-specific standards
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
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
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
- 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