Energy Market and Economic Impacts of a Proposal to Reduce Greenhouse Gas Intensity with a Cap and Trade System

<< http://www.eia.doe.gov/oiaf/service_rpts.htm>>

Forecast Analysis: This report was prepared by the Energy Information Administration (EIA), in response to a September 27, 2006, request from Senators Bingaman, Landrieu, Murkowski, Specter, Salazar, and Lugar. The Senators requested that EIA assess the impacts of a proposal that would regulate emissions of greenhouse gases (GHGs) through an allowance cap-and-trade system. The program would set the cap to achieve a reduction in emissions relative to economic output, or greenhouse gas intensity.

The following information was assembled by Staff of the Committee on Energy and Natural Resources from the EIA analysis:

Summary of Impacts

- The impacts of the new proposal are generally modest and closely in line with a similar proposal from 2005 *(Impacts of Modeled Recommendations of the National Commission on Energy Policy,* EIA – April 2005*).*
- The program has only minor impacts on GDP ─ one quarter of 1 percent by 2030. This is equal to slowing the rate of economic growth by roughly one month over the next 20 + years.
- The analysis here does not include the positive benefits of the $50 billion technology incentive programs (e.g., IGCC/sequestration, cellulosic ethanol, renewable electricity etc). If EIA used more optimistic technology assumptions as opposed to their reference case greater reductions would be achieved at lower costs.

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Greenhouse Gas Emission Reductions

- The United States is expected to produce 8649, 9248, and 9930 million metric tons of GHG emissions in 2020, 2025, and 2030 respectively.

Total Reductions (MMTCO2e)

	2020	2025	2030
GHG Emission Reductions	562	909	1259
Agriculture Sequestration Offsets	296	281	311

Impacts on GDP

- The program does not materially affect GDP.
- Cumulative GDP from 2009-2030 is $383.9 trillion under the proposal, compared to $384.3 trillion in the BAU case. Overall, cumulative GDP from 2009-2030 is reduced by one tenth of one percent (0.1%) as a result of the proposal.

Annual Changes in GDP

	2020	2025	2030
GDP Change	-0.12%	-0.20%	-0.26%

Coal Consumption

- Coal consumption continues to grow under the emission trading proposal. Coal use grows 23% from 2004 to 2030 under the proposal, compared to 53% under the BAU forecast.

Natural Gas Consumption

- Natural gas consumption remains essentially unchanged under the emission trading proposal. Throughout the forecast period, natural gas use ranges from 2% below the BAU level to 1% above BAU level.

Energy Prices

- Energy price increases for end-use consumers are modest.

Energy Price Changes

	2020	2025	2030
Gasoline (¢/gallon)	6¢ (3%)	9¢ (4%)	12¢ (5%)
Electricity (¢/kWh)	0.3¢ (4%)	0.5¢ (7%)	0.8¢ (11%)
Heating Oil (¢/gallon)	8¢ (4%)	12¢ (6%)	16¢ (8%)
Natural Gas ($/mcf)	$0.41 (6%)	$0.64 (8%)	$0.88 (11%)

Renewable Electricity Generation

- Renewable electricity generation in 2030 increases by just over 50% under the emission trading proposal compared to the BAU forecast. Most of this increase is from wind and dedicated biomass plants. In fact, electricity generation from biomass more than quadruples under the program.