Oil Security Benefits of the Lieberman-Warner Climate Security Act (CSA)

Air & Energy Program
Natural Resources Defense Council
May 2008

Analysis based on MARKAL model by International Resources Group conducted for NRDC

For further details, please see: IRG, "US Technology Choices, Costs and Opportunities under the Lieberman-Warner Climate Security Act: Assessing Compliance Pathways", PowerPoint, May 2008
For more information please visit http://www.nrdc.org/media/2008/080513.asp

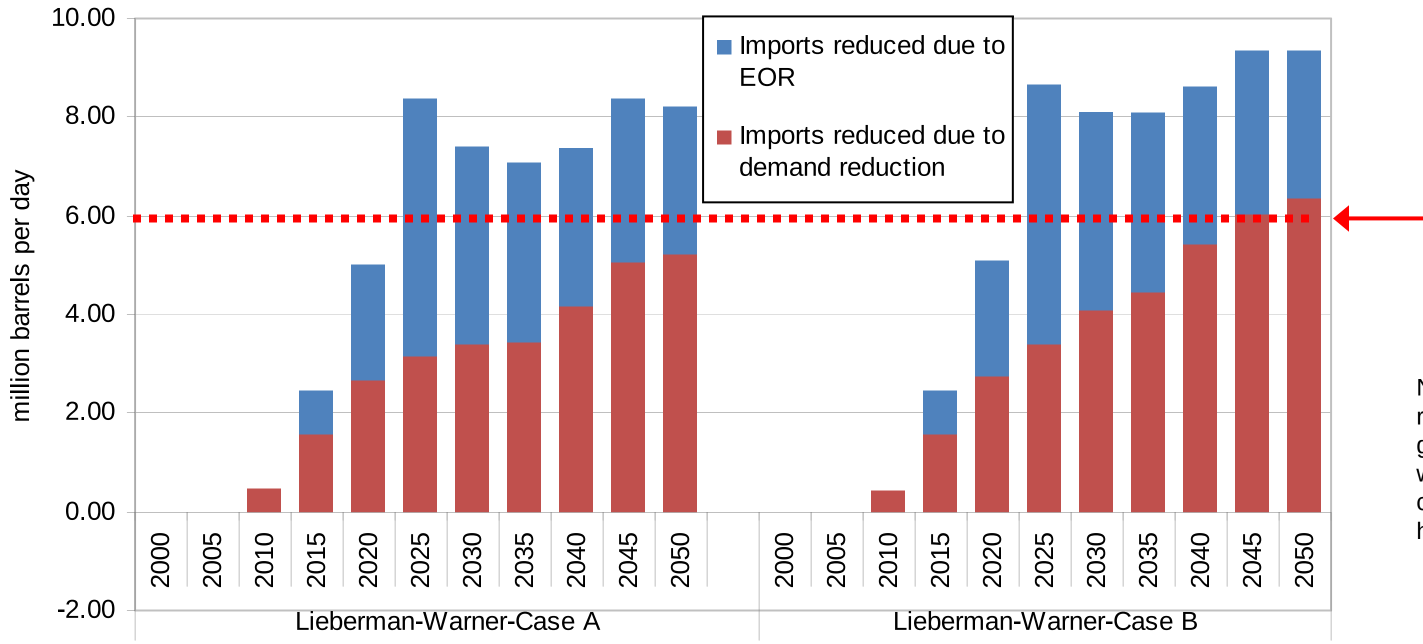
About this Analysis

- These oil security results have been excerpted from a larger analysis done by International Resources Group (IRG) for NRDC.
- IRG used an improved and extended version of the US national MARKAL model (US-NM50) originally developed by the Environmental Protection Agency’s Office of Research and Development.
- The reference point for the analysis is a business-as-usual (BAU) scenario calibrated to the Department of Energy’s 2008 Annual Energy Outlook (AEO2008).
- The overall results show that the global warming pollution reduction targets established by the bill can be achieved without a significant increase in the country’s total energy costs.

CSA Cuts Imports by up to 9 Million Barrels per Day (Mbd)

- Reductions range from 7.1 to 9.3 Mbd during the 2025 to 2050 timeframe due to:
  - Reduction in overall oil demand
  - Increased domestic oil production due to increased use of Enhanced Oil Recovery (EOR) being used for carbon sequestration from power plants

Reduction in Oil Imports



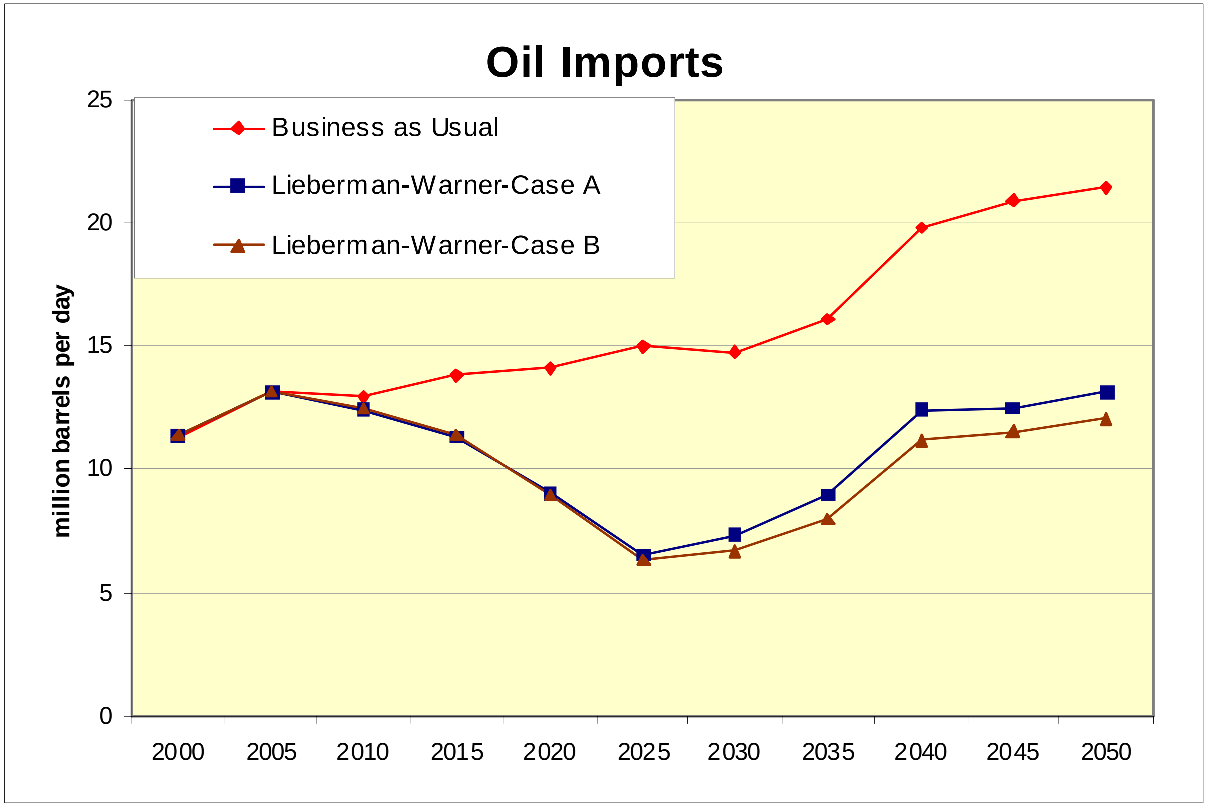
2007 OPEC Import Level (6 Mbd)

Note: Case A illustrates a future where renewables outcompete coal for power generation. Case B illustrates a future where coal with carbon capture remains competitive and greater use of plug-in hybrids displaces more oil.

Source: MARKAL analysis by International Resources Group for NRDC (IRG, “US Technology Choices, Costs and Opportunities under the Lieberman-Warner Climate Security Act: Assessing Compliance Pathways”, PowerPoint, May 2008). For more information please visit http://www.nrdc.org/media/2008/080513.asp

CSA Cuts Oil Imports by up to 58%

- Reductions range from 37% to 58% during the 2025 to 2050 timeframe
- By 2025 oil imports drop to 6.4 Mbd, the lowest point since 1986



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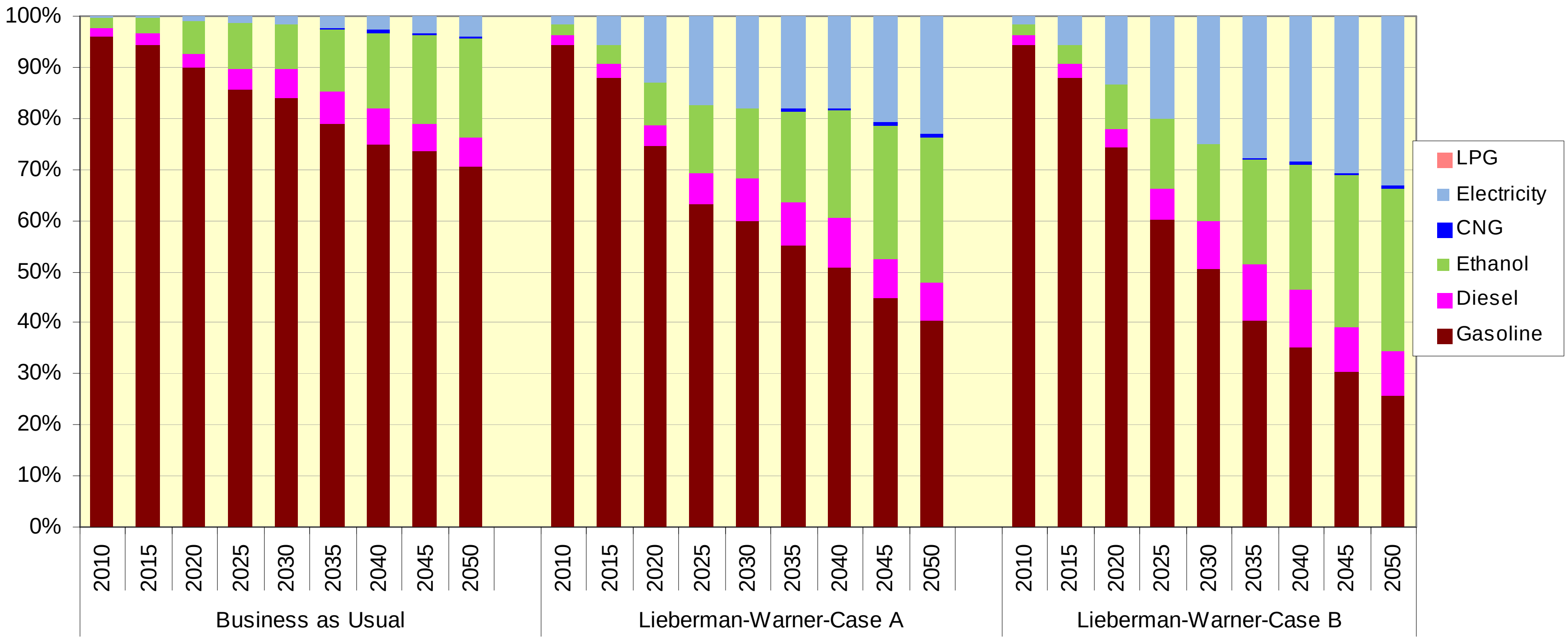
CSA Gives Greater Fuel Choices to Drivers

- By 2025, electricity and ethanol displace 30% of petroleum fuels
- By 2050, petroleum-based fuels no longer the dominant fuel
  - By 2050, gasoline and diesel drop to 35% to 50% of light duty fuel use

Shares of Fuel Energy Use, Cars and Light Trucks



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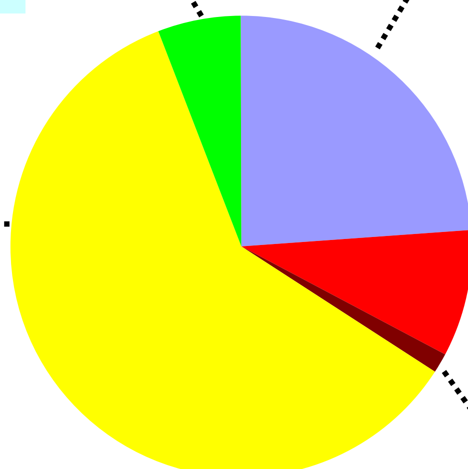
CSA Invests $286 Billion in a Clean, Sustainable Transportation System

Cumulative Transportation Investments by 2050
$286 Billion

Research Funding: $17B
- High risk-high reward research funding to develop clean technologies that enhance energy security

Mass Transit: $171B
- Funding for public transportation projects



Auto Retooling: $68B
- Assistance for domestic production of hybrids, plug-in hybrids, battery electrics, fuel cells, and clean diesels

Cellulosic Biofuels: $26B
- Incentives for domestic production of cellulosic biofuel

Hybrid Trucks: $4B
- Incentives for commercial trucking fleets to adopt hybrids

Environment and Public Works Committee summary of CSA substitute amendment, May 16, 2008