

Global Climate Change Solutions

Global climate change is a long-term challenge that deserves long-term technology solutions.

- By 2030, the United States will need at least 40 percent more electricity than we have today, and worldwide electricity needs will double. (Source: U.S. Energy Information Administration's Annual Energy Outlook 2007)
- Greater use of coal to fuel this growth is needed, with technology driving lower carbon dioxide (CO₂) emissions through advanced generation technologies and carbon capture and storage (CCS)
- Any mandatory program must be timed to coincide with the commercial, cost-effective availability of CCS technology and other new advanced technologies.

A stringent carbon emissions cap prior to development of affordable CCS technology would have a negative impact on the economy.

- Consumers will bear the costs through higher electricity and natural gas costs. A 15-percent CO₂ emission reduction would cost the lowest-income families double their share of household income spending versus more affluent families. (Source Congressional Budget Office, April 2007)
- Limiting use of coal, which fuels about half of U.S. electricity, would result in greater use of expensive natural gas, which has cost \$400 billion more than expected since the beginning of this decade. (Source: Energy Information Administration forecasts.)
- More than 29 million Americans already can't afford their energy bills, and the high price of natural gas has put 3 million Americans out of work since 2000 due to industries moving overseas. (Sources: U.S. Department of Health and Human Services and the Industrial Energy Consumers of America.)
- Stringent carbon caps also could cause reliability concerns at a time of diminishing capacity reserves.
 - U.S. electricity demand is forecast to grow at least 40 percent by 2030, outpacing new generation by a more than three-to-one margin. (Source: U.S. Energy Information Administration's Annual Energy Outlook 2007)

There is a practical three-step technology path toward reducing CO₂ emissions.

- First: Build out the next generation of state-of-the-art coal-based plants to ensure efficient electric reliability. Over half of the proposed plants are “advanced combustion” or integrated gasification combined cycle (IGCC).
- Second: Fund and build the \$1.5-billion FutureGen prototype, which will couple IGCC technology with CCS. The final host site will be selected in 2007, and the plant is expected to be operational by 2012.
- Third: Aggressively pursue technologies to capture CO₂ from new coal plants. See paper on CCS technologies.

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