

National Coal Council Study Calls for Broad Deployment of Carbon Capture and Storage Technologies to Improve Emissions, Create Jobs and Increase GDP by \$2.7 Trillion

Study Supports President Obama's Long-Term Emission Improvement Goals

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The National Coal Council (NCC) today presented the U.S. Department of Energy with recommendations for broad deployment of carbon dioxide capture and storage (CCS) technologies to achieve an 80 percent reduction in carbon dioxide (CO₂) emissions by 2050 with sustained economic and employment growth.

The Council's findings are based on its latest study, "Low-Carbon Coal: Meeting U.S. Energy, Employment and Carbon Dioxide Emissions Goals with 21st Century Technologies," which creates a path to achieve the Administration's goal of reducing CO₂ through widespread and affordable deployment of CCS commencing in eight to 10 years. The Council's approach supports Secretary of Energy Steven Chu's goal of bringing at least 10 large-scale CCS demonstration projects on line in the United States by 2016.

The study found that extensive deployment of coal-based generation with CCS over the next 40 years would increase U.S. Gross Domestic Product (GDP) by \$2.7 trillion, create 28 million job-years over four decades from new construction, and support 800,000 permanent jobs related to operation and maintenance of these facilities. The analysis also found that related enhanced oil recovery projects utilizing the captured CO₂ could help extract more than 2 million barrels per day of domestic oil.

"The technologies to deploy coal-based power generation with carbon capture and storage are available now, subject to establishment of the proper financial, regulatory and liability framework," said NCC Study Chair Fred Palmer, Senior Vice President of Government Relations at Peabody Energy.

"Broad deployment of CCS is the low-cost, low-carbon energy solution that is essential to reindustrializing the United States with clean coal. Investing in the broad potential of low-carbon technologies will enable the United States to meet increasing electricity demand and strengthen national security by using captured CO₂ to recover more domestic oil."

The study was conducted at the request of Secretary Chu and is the fifth major study presented by the Council in the past six years. The Council is a Federal Advisory Committee to the Secretary of Energy.

The U.S. population will increase from 307 million to nearly 440 million by 2050, putting the magnitude of the clean energy task into perspective. Coal fuels approximately half of U.S. electricity and has a recoverable reserve base of 265 billion tons in 31 states, enough to last more than two centuries. Coal is also a low-cost energy option; the delivered cost of natural gas was 340 percent more than the cost of coal in 2008 and 311 percent more expensive than coal throughout the decade.

According to the report:

- Construction of about 360 gigawatts of coal-based generation with CCS at a \$1.2 trillion investment cost will yield a \$2.7 trillion GDP benefit.
- Deployment of coal-based generation with CCS over the next several decades can replace the existing coal fleet and provide up to 3,000 terawatt hours of electricity per year at affordable rates using 1.7 billion tons of coal, based on a recent assessment from the National Research Council.
- Next generation technologies for enhanced oil recovery would create demand for captured CO₂ that is equivalent to the emissions from about 70 gigawatts of coal-based power for more than 30 years, research at the National Energy Technology Laboratory indicates.
- Coal's carbon content creates a competitive advantage for America. In addition to recovering more oil, CO₂ can be used for value-added

opportunities ranging from cement to iron oxide production.

- Near-term reductions in CO2 emissions from the existing coal-based generating fleet could be achieved by using retrofit efficiency technologies, partial CO2 capture technologies or a combination of those technologies.
- Widespread deployment of CCS is the key for achieving long-term reductions in CO2 emissions. President Barack Obama and China President Hu Jintao jointly are calling for immediate advancement of large-scale CCS projects using 21st century technologies to achieve near-zero emissions and CO2 capture.

The study addresses efficiency improvements; CO2 capture technologies; pipeline transportation of CO2; use of CO2 for producing more oil; injection of CO2 in saline fields or other deep storage options; regulatory and legal issues; underground gasification and coal beneficiation. The study's executive summary may be downloaded at NationalCoalCouncil.org.

The National Coal Council is a private, nonprofit advisory body chartered by the U.S. Secretary of Energy in 1984 under the Federal Advisory Committee Act. Members of the National Coal Council are appointed by the Secretary of Energy and reflect diverse interests from business, industry, academia and other groups.

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