



Fact Sheet: DOE to Demonstrate Cutting-Edge Carbon Capture and Sequestration Technology at Multiple FutureGen Clean Coal Projects

FACT: The International Energy Agency's (IEA) World Energy Outlook estimates that the world's primary energy needs will grow by 55% by 2030, with fossil fuels remaining a significant source of global energy supply. This IEA report also predicts a remarkable 73% increase in global demand for coal, driven largely by China and India's growing economies.

FACT: In 2007, the U.S. consumed 1.1 billion tons of coal. By 2030, U.S. demand for coal is expected to grow by 48 percent, thus increasing to an estimated 1.7 billion tons, according to the U.S. Department of Energy's (DOE) Energy Information Administration.

FACT: Since 2001, the Bush Administration has invested more than \$2.5 billion on clean coal research and development (R&D) technology.

FACT: Clean coal technology is a vital component of the Bush Administration's vision for a reliable, affordable and more secure energy future, and FutureGen is one part of a comprehensive, long-term strategy to diversify sources of energy and meet growing energy demand with clean, cutting-edge technologies.

Today, the U.S. Department of Energy announced its intention to restructure FutureGen by equipping multiple new clean coal power plants with advanced carbon capture and storage (CCS) technology. On February 27, 2003, the federal government announced FutureGen, a \$1 billion initiative to create a coal-based power plant focused on demonstrating a revolutionary clean coal technology that produces hydrogen and electricity and mitigates greenhouse gas emissions. The FutureGen project was initiated in response to the National Energy Policy of May 2001, which emphasized the need for diverse and secure energy sources that could largely be provided by America's most abundant domestic energy resource, coal.

While FutureGen's goal for a technological solution to produce electricity from coal in an environmentally responsible way remains the same, the cost of the FutureGen project has almost doubled and could rise even higher. Technological research and development (R&D) and demonstration advancements over the past five years allow FutureGen to evolve from a large-scale R&D testing lab to multiple commercial-scale demonstration plants.

FutureGen's restructured approach proposes federal funding for CCS technology at multiple new commercial-scale clean coal power plants. It includes engagement with the international community which will remain integral to advancing CCS technology on a global scale. Under this approach, multiple commercial plants would each produce at least 300 megawatts of electricity and jointly these projects will capture and safely sequester at least double the amount of carbon dioxide annually compared to the concept announced in 2003. To this end, the Department today issued a Request for Information (RFI) for industry input and plans to issue a competitive solicitation to provide financial assistance for multiple, commercial-scale CCS demonstrations integrated with market-ready Integrated Gasification Combined Cycle (IGCC) (or other clean technology) coal power plants. The restructured approach will focus on separating carbon dioxide (CO₂) for CCS, and does not include hydrogen production, which the concept announced in 2003 included. Hydrogen production for commercial use will remain an important

component of the Hydrogen Fuel Initiative and other research initiatives aimed at fundamentally changing the way we power our vehicles.

R&D research and development advancements in IGCC and CCS technology have made FutureGen's restructured approach possible. This approach will provide more electricity from multiple clean coal plants, at least twice as much CO₂ sequestered, a more cost-effective strategy to limit taxpayer exposure to escalating costs, and provide for wider use and more rapid commercialization of CCS technology than the concept announced in 2003. This more focused approach provides an all-around better investment for Americans.

Energy & Environmental Benefits:

- Sequester at least double the amount of CO₂ than the concept announced in 2003. Each demonstration plant would sequester CO₂ at rate of approximately one million tons per year once operational – nearly enough in compressed liquid form to fill the Empire State Building in New York.
- Generate enough electricity per plant to power 400,000 households.
- Reduce emissions of sulfur dioxide, nitrogen oxide, mercury and other gases that may be harmful to the environment.
- Build on technological R&D advancements that have been made since the concept was announced in 2003, which includes small-scale carbon sequestration projects and IGCC research.
- Accelerate timeframe for full-scale commercial operation of the IGCC-CCS plants, enabling market use as soon as the plants are commissioned in the 2015-2016 timeframe.

Financial Benefits:

- Limits taxpayer financial exposure. Under the restructured approach, DOE will join industry in its efforts to build IGCC plants by providing funding for the addition of CCS technology to multiple plants. Under the concept announced in 2003, taxpayers would have funded 74% of the total project cost, as well as potentially 74% of all cost escalations.
- Provides demonstration of IGCC-CCS technology, enabling the FutureGen initiative to test the technology integration and clear hurdles associated with early technology demonstration to allow rapid commercial deployment after 2015.
- Leverages the Administration's investment of more than \$2.5 billion in clean coal technology since 2001.
- Establishes commercial feasibility and formulates a model that industry could use to deploy commercial-scale plants that each sequester at least one million metric tons of carbon dioxide annually.

Coal – our nation's most abundant domestic resource – will remain a major source of energy in the years to come, helping meet President Bush's goal to reduce our dependence on foreign energy supplies. This restructured approach enables increased use of clean coal technologies to produce baseload electricity and aims to spur greater commercial use of cutting-edge IGCC-CCS technology.

Keeping America competitive requires reliable, affordable, and clean supplies of energy. The President's Advanced Energy Initiative aims to reduce our reliance on foreign oil by changing the way we power our cars, homes and businesses. Part of this effort requires continued investments in clean coal-fired plants, revolutionary solar and wind technologies, and clean, safe nuclear energy.