



INTERNATIONAL
T R A D E
ADMINISTRATION

Coal News and Trends

Upcoming Events:

- International Conference on Clean Technologies for the World Mining Industry, April 13-16, Santiago, Chile**
The Eighth Annual International Conference on Clean Technologies for the World Mining Industry will take place from April 13-16, 2008 in Santiago. Chilean professionals and foreign delegations from the mining and metallurgical sectors have attended this event in previous years. The 2008 event will highlight new technological processes to reduce mining contaminants worldwide. Participants from the mining sector, universities and research centers are encouraged to attend the event. Additional information can be found at <http://www.ctwmi.com/>, or contact Carlos Capurro at 56-2-330-3307 or Carlos.Capurro@mail.doc.gov for additional information regarding the International Trade Administration schedule at the event.
- Coal Prep 2008, April 28-May 1, Lexington, KY**
The annual Coal Prep event attracts over 200 exhibiting companies and more than 1,200 attendees. Attendees come to see the latest coal preparation products and technologies and to gain up-to-date industry information. Attendees include plant managers, superintendents, engineers, maintenance professionals, quality control professionals and coal industry experts. Topics to be highlighted at the 2008 event include Loading and Transportation of Coal and Operator Guidelines for Coal Preparation. Please refer to <http://coalaggprepshow.com/CoalPrep2008/Public/MainHall.aspx?ID=1676> for additional information on the event, or contact Sara Moreno at (859) 225-7001 or Sara.Moreno@mail.doc.gov regarding the International Trade Administration program at the Coal Prep event.
- Electric Power, May 6-8, Baltimore, MD and ITA Exporting Seminar, May 5**
The Tenth Annual Electric Power event, to be held from May 6-8 in Baltimore, will highlight power generation trends, with sessions on fuel strategies, fleet optimization, coal-fired power plants, nuclear power, renewable power, and environmental issues. As part of the Electric Power event, the International Trade Administration will provide a seminar on 'Exporting U.S. Power Technologies and Equipment' on May 5 from 2:00-5:00pm. For additional information on the Electric Power event, please refer to <http://www.electricpowerexpo.com/index.asp>, or contact Shannon Fraser at (202) 482-3609 or Shannon.Fraser@mail.doc.gov for information on the exporting seminar.

Policy Analysis:

DOE Announces Restructured FutureGen Approach to Demonstrate Carbon Capture and Storage Technology at Multiple Clean Coal Plants

Affirms Commitment to Clean Coal Technology Investments; Requests \$648 Million for Coal Research, Development and Deployment for FY09 Budget - Largest Coal Budget in More Than 25 Years

http://fossil.energy.gov/news/techlines/2008/08003-DOE_Announces_Restructured_FutureG.html

January 30, 2008

Washington, DC - U.S. Secretary of Energy Samuel W. Bodman today announced a restructured approach to its FutureGen project that aims to demonstrate cutting-edge carbon capture and storage (CCS) technology at multiple

commercial-scale Integrated Gasification Combined Cycle (IGCC) clean coal power plants. Under this strategy, the U.S. Department of Energy (DOE) will join industry in its efforts to build IGCC plants by providing funding for the addition of CCS technology to multiple plants that will be operational by 2015. This approach builds on technological research and development advancements in IGCC and CCS technology achieved over the past five years and is expected to at least double the amount of carbon dioxide sequestered compared to the concept announced in 2003. Clean coal technology is a vital component of the Bush Administration's vision for a cleaner, more secure energy future and this more cost-effective approach will demonstrate IGCC-CCS clean coal technology to enable wider use and commercialization more rapidly.

Secretary Bodman also today announced President Bush's budget request of \$648 million for the DOE Office of Fossil Energy's advanced coal technology research, development and demonstration program for Fiscal Year (FY) 2009. The FY09 budget requests \$407 million for coal research -- including development of more efficient gasification and turbine technologies, innovations for existing coal power plants, and large-scale CCS injection tests -- and \$241 million to demonstrate technologies for cost-effective carbon capture and storage for coal-fired power plants, including \$156 million for the restructured FutureGen approach and \$85 million for DOE's Clean Coal Power Initiative. This \$648 million request represents a \$129 million increase from the President's FY2008 request and is the largest amount requested for DOE's coal program in more than 25 years.

"This restructured FutureGen approach is an all-around better investment for Americans. As technological advancements have been realized in the last five years, we are eager to demonstrate CCS technology on commercial plants that when operational, will be the cleanest coal-fired plants in the world. Each of these plants will sequester at least one million metric tons of carbon dioxide annually and help meet our nation's rapidly growing energy demand," Secretary Bodman said. "Coal is our nation's most abundant energy resource powering over half of the homes in America. To ensure a clean, reliable and affordable energy future, the Department of Energy is planning the largest budget request in over 25 years focusing on demonstrating advanced technology like carbon capture and storage so that the technology can be perfected and rapidly deployed across the country."

The Department today issued a Request for Information (RFI) that seeks industry's input by March 3, 2008, on the costs and feasibility associated with building clean coal facilities that achieve the intended goals of FutureGen. Following this period and consideration of industry comment, DOE intends to issue a Funding Opportunity Announcement - or competitive solicitation - to provide federal funding under cooperative agreements to equip IGCC (or other clean coal technology) commercial power plants that generate at least 300 megawatts, with CCS technology aimed at accelerating near-term technology deployment. Initial input from industry will assist in determining how many demonstrations can be commissioned.

This restructured approach allows DOE to maximize the role of private sector innovation, provide a ceiling on federal contributions, and accelerate the Administration's goal of increasing the use of clean energy technologies to help meet the steadily growing demand for energy while also mitigating greenhouse gas emissions. Under this plan, DOE's investment would provide funding for no more than the CCS component of the power plant - not the entire plant construction, compared with the FutureGen concept announced in 2003 where the federal government would incur 74% of rising costs. This would allow for commercial operation of IGCC power plants equipped with CCS technology to begin as soon as the plants are commissioned, between 2015 and 2016.

The FutureGen concept announced in 2003 planned the creation of a near-zero emissions, 275 MW power plant that produced hydrogen and electricity from coal on a smaller-than-commercial-scale, serving as a laboratory for technology development. Today's announcement builds on advancements in technology made since 2003 and allows for electricity to be produced and greenhouse gas emissions sequestered at a rate and scale that offers tremendous potential for commercial viability. 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; however, hydrogen production for commercial use will remain an important component of DOE's other energy initiatives. Also, engagement with the international community will remain an integral part of DOE's efforts to advance CCS technology on a global scale.

The four sites - two in Illinois and two in Texas - evaluated in the Department's Environmental Impact Statement issued in November 2007, including the site announced by the FutureGen Alliance in December 2007, Mattoon, IL, may be eligible to host a commercial-scale IGCC plant with CCS technology. The site analysis and characterization data at these sites may be applicable to future environmental analyses under this restructured approach. More than one site may be selected as a host for the commercial demonstration of CCS technology and DOE encourages applicants to include these four sites in their consideration for this restructured approach. Also, the FutureGen Alliance's 13 member companies may compete with all the other applicants.

This restructured approach builds on the Administration's investment of more than \$2.5 billion in clean coal technology since 2001, which includes small-scale carbon sequestration projects and IGCC research that have advanced our understanding of the potential for clean coal technology. It is also consistent with a key recommendation of last year's Massachusetts Institute of Technology Study, "The Future of Coal," which indicated that "the main purpose of the [FutureGen] project should be to demonstrate commercial viability of coal-based

power generation with CCS." The Administration's Clean Coal Power Initiative, as well as awards of \$1.65 billion in clean coal tax incentives, and the use of loan guarantees, are other key components of DOE's efforts to demonstrate the potential of advanced clean coal technologies to meet growing energy demand.

Fossil Energy Requests \$1.1 Billion for FY 2009 Budget

Coal Research and Development, Strategic Petroleum Reserves Major Focus of Program Funding for Environmental Improvements and Energy Security

http://fossil.energy.gov/news/techlines/2008/08004-FY2009_Budget_Request.html

February 4, 2008

Washington, DC - The Department of Energy's Office of Fossil Energy FY 2009 coal budget request of \$648 million focuses on technology allowing the United States to maintain its technological lead in coal use in a way that will not raise climate concerns. This is the largest budget request for coal research development and demonstration in over 25 years and leverages a nearly \$1 billion investment in Clean Coal Technology.

The budget includes \$406.5 million for Coal R&D, including In-house R&D; \$85.0 million for the Clean Coal Power Initiative and \$156.0 million for a new approach to the FutureGen program.

The FY09 request continues to demonstrate the Administration's commitment to domestically produced energy from coal. Combined with the required private sector cost sharing contribution as directed by the Energy Policy Act of 2005, brings the total investment in coal technology leveraged by the Office of Fossil Energy's 2009 Budget to nearly \$1 billion. In addition, the federal government provides support to advance coal technologies through tax incentives for clean coal plants, and through loan guarantees to be allocated to various types of coal power and other gasification projects.

Fossil Energy's programs create public benefits by enhancing U.S. economic, environmental, and energy security. This mission is achieved by developing technological capabilities to reduce emissions from coal-fueled electricity generation plants including dramatic reductions of carbon emissions to achieve near-zero atmospheric emissions power production. FERD supports many Presidential initiatives and priorities including the Coal Research Initiative, Hydrogen Fuel Initiative, and FutureGen. FERD also supports the Climate Change Technology Program which is a priority for the Department. FY 2009 Fossil Energy programs:

- Promote advanced, full-scale integration of integrated gasification combined cycle (IGCC) and carbon capture and storage (CCS) technology to produce electric power from coal, while capturing and sequestering carbon dioxide (CO₂) resulting in near-zero atmospheric emissions coal energy systems;
- Accelerate development and deployment of coal technologies that could economically meet environmental standards and increase the efficiency and reliability of coal power plants;
- Provides strategic and economic security against disruptions in oil supplies via an emergency stockpile of crude oil.

FOSSIL RESEARCH AND DEVELOPMENT:

The President's Clean Coal Power Initiative:

The Clean Coal Power Initiative is a cooperative, cost-shared program between the government and industry which will demonstrate advanced coal-based power generation technologies including carbon capture and storage.

In FY 2009, the coal budget is significantly increased with a focus on carbon capture and storage. At the centerpiece of CCS are multiple demonstration projects through FutureGen and the Clean Coal Power Initiative that will provide early commercial-scale experience with near-zero atmospheric emission coal technologies and issues to facilitate commercial deployment.

An increase in the CCPI will result in \$85 million for FY2009 to complete the Round 3 solicitation, proposal evaluations, and project selections of advanced technology systems that capture carbon dioxide for sequestration or beneficial reuse. The upcoming budget request proposes to transfer \$149 million in clean coal technology prior year balances to the FutureGen and CCPI projects because these balances are no longer needed to complete active CCT projects.

FutureGen:

FutureGen will receive an \$81.7 million funding increase in the FY 2009 budget from FY 2008. FutureGen will accelerate the commercial use of carbon capture and storage technologies for coal power plants. The new approach proposes multiple 300-600 Megawatt (MW) commercial-scale demonstration clean coal power plants that

will operate as demonstration facilities - as opposed to a single, 275-MW R&D facility - each producing electricity and capturing and safely sequestering at least one million metric tons of CO₂ annually.

Sequestration:

One of the key ingredients of the Fuel and Power Systems program, carbon sequestration receives a significant increase in budget dollars from nearly \$119 million in FY 2008 to \$149 million in FY 2009. The increase helps develop economical ways to separate and permanently store (sequester) greenhouse gas emissions from the combustion of fossil fuels. The technologies will help existing and future fossil fuel power generating facilities by reducing the cost of electricity impacts and also providing protocols for carbon capture and storage demonstrations to capture, transport, store, and monitor the CO₂ injected in geologic formations.

The increase supports site selection and characterization, regulatory permits, community outreach, and completion of site operations plan for large-scale, geologic, carbon storage tests. It also funds large-scale injections needed to continue towards injection and remaining infrastructure development. The additional funding also permits work on capture projects and initiates an effort to prepare for and augment the monitoring, measurement and verification which are being conducted in the Phase III tests.

Hydrogen:

Proposed funding for hydrogen from coal as a clean fuel for future advanced power technologies such as fuel cells and transportation systems is \$10 million - a nearly \$15 million decrease. The decrease reflects the elimination of integrated coal-biomass processing for carbon emissions research, elimination of substitute natural gas and coal-to-liquids production research, and a right-sizing the level of effort in early engineering and design studies on hydrogen production modules near-zero emission coal plants.

Gasification Technology:

The Integrated Gasification Combined Cycle (IGCC) receives a boost of \$15.5 million to reach \$69 million in FY 2009. This activity develops advanced gasification-based technologies which will reduce the cost of coal-based IGCC plants, improve thermal efficiency, and achieve near-zero atmospheric emissions of all pollutants. These technologies will be an integral part of the carbon capture and storage demonstration projects.

Fuel Cells:

Flexible fuel cell systems that can operate in central coal-based power systems and with applications for electric utility, industrial and commercial/residential markets, receive a funding request of \$60 million in FY 2009 - an increase over the FY 2008 appropriation of \$55.5 million. This activity enables the generation of highly efficient, cost-effective electricity from domestic coal with near-zero atmospheric emissions of carbon and air pollutants in central station applications. The technology also provides the technology base to permit grid-independent distributed generation applications.