

**U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON SCIENCE AND TECHNOLOGY
SUBCOMMITTEE ON ENERGY AND ENVIRONMENT**

HEARING CHARTER

The Department of Energy's FutureGen Program

Tuesday, April 15, 2008

10:00 a.m. – 12:00 p.m.

2318 Rayburn House Office Building

Purpose

On Tuesday, April 15, 2008, at 10:00 a.m. the House Committee on Science and Technology, Subcommittee on Energy and Environment will hold a hearing entitled “**The Department of Energy's FutureGen Program.**” The purpose of the hearing is to gain a better understanding of the Department of Energy's decision to restructure its FutureGen program, the process through which the decisions to restructure were made, and to obtain information about the impacts this revised approach to the FutureGen initiative may have on carbon capture and sequestration technology development. This hearing is an opportunity to assess the potential of this programmatic shift to provide a cost-effective and timely path for development and demonstration of carbon capture and sequestration technologies.

Witnesses

Panel I

Mr. Bud Albright, *Under Secretary at the Department of Energy*. Under Secretary Albright will explain the process through which the Department made the decision to revise FutureGen including a discussion of the specific factors that led to the restructuring decision. The Under Secretary will also outline the rationale for the restructured program and describe the plan for the restructured program including timelines for the proposed activities.

Panel II

Mr. Paul Thompson, *Senior Vice President, Energy Services, at E.On, LLC and serves as the Chairman of the FutureGen Alliance Board*. Mr. Thompson will describe the role of the FutureGen Alliance before and after the Department's decision to restructure the program. He will describe the impacts the Department's decision could have on the overall federal effort to develop and deploy carbon capture and sequestration technologies.

Mr. Ben Yamagata, *Executive Director, Coal Utilization Research Council*. Mr. Yamagata will discuss the role of the FutureGen program in a comprehensive federal research and development effort to develop and deploy carbon capture and sequestration technologies. He also will provide an assessment of the proposed restructured program's potential to complement other federal research and development efforts on carbon capture and sequestration technologies including the Clean Coal Power Initiative.

Mr. Jeffrey N. Phillips, *Program Manager, Advanced Coal Generation Electric Power Research Institute*. Mr. Phillips will discuss the suitability of the revised program to overcome technical and financial challenges with the deployment of carbon capture and sequestration technologies.

Background

In early 2003, the Department of Energy announced plans for the federal government to build a \$1 billion pollution-free power plant known as the FutureGen Initiative. The venture was promoted as a near-zero emissions power plant intended to combine electricity and hydrogen production. Under the original FutureGen program, the Department of Energy (DOE) would oversee a consortium of industrial interests, now known as the FutureGen Alliance, which would manage the advanced 275 megawatt power plant project that would also serve as a test bed for new technologies, including the capture and sequestration of carbon dioxide.

In the Department's February 27, 2003 press release, Secretary Abraham stated "FutureGen will be one of the boldest steps our nation has taken toward a pollution-free energy future. Knowledge from FutureGen will help turn coal from an environmentally challenging energy resource into an environmentally benign one. The prototype power plant will serve as a test bed for demonstrating the best technologies the world has to offer."

There were three main components of the original FutureGen program. The program would be a state-of-the-art power plant that would turn coal into a hydrogen-rich gas before combusting it in a turbine to produce electricity. This power plant would serve as a prototype plant leading the way on development and demonstration of technology to capture carbon dioxide and sequester it in deep underground geologic formations. In addition, there was an emphasis placed on the FutureGen initiative serving as model hydrogen-production facility for the Administration's initiative to advance the production of fleets of hydrogen-fueled vehicles. FutureGen also was intended to serve as a test bed for cleaner coal technologies in terms of emissions and for development of operational efficiencies.

As late as November 30, 2007, the Department was preparing to go forward with the original FutureGen program. In his letter to Representative Johnson (IL), Secretary Bodman stated that DOE was "diligently working to complete the process and issue the Record of Decision in a timeframe that supports FutureGen site selection by the end of December 2007."

On January 30, 2008 the Department of Energy announced a major restructuring of the FutureGen program. Under the new program, DOE will no longer build a small-scale clean coal power plant that can test CCS technologies and provide for the demonstration of an integrated carbon capture and sequestration system. Instead, the Department plans to capitalize on industry's investment in IGCC clean coal power plants by providing funding for the CCS component of the IGCC power plants. Under the revised program, the Department proposes to partner with companies with plans to build Integrated Gasification Combined Cycle (IGCC) clean coal power plants by providing funding for the addition of carbon capture and sequestration technologies (CCS) to these plants.

On January 30, 2008 DOE issued a Request for Information (RFI) on its new path forward to demonstrate advanced technology for electricity production from coal with a March 3, 2008 deadline for public comments. DOE anticipates evaluating the comments on the RFI, issuing a solicitation, and selecting projects by December 2008 or no later than January 2009.

Issues Raised by the Restructuring Plan

Concerns have been raised by Members of Congress and by some in the electric power industry about both the process by which DOE made this decision and the restructured program's suitability for facilitating timely demonstration and deployment of integrated carbon capture and sequestration systems.

The recent FutureGen announcement takes the program in a dramatically different direction. According to DOE, the primary reason for the abrupt change in the FutureGen program is the escalation in the estimated costs for the program. The Administration also cites the increased potential for the adoption of carbon dioxide regulation in the near future and the implementation by several states of a requirement for permitting construction of new coal plants to include addition of CCS or the ability to add these technologies in the near future. The Administration suggests the restructured approach will better maximize opportunities for innovation and the private sector's investment in new coal plants.

Initial estimates indicated that FutureGen would cost approximately \$1 billion. The Department's more recent cost estimates anticipate a cost of \$1.8 billion. Initially, the cost-share arrangement for the program was 80 percent federal and 20 percent non-federal. That arrangement was adjusted later to a cost-share arrangement of 74 percent federal and 26 percent non-federal. To date, approximately \$174 million has been appropriated for the original FutureGen Initiative, and the 2009 budget request includes \$156 million for FutureGen.

DOE believes the restructured program will deliver more progress for less than the cost of the original FutureGen program. However there are remaining questions about whether the funding levels for the proposed program are sufficient to fund a robust

technology demonstration program. There is also concern that the process of revising the FutureGen program will further delay the demonstration of CCS technologies.

The Department states in its Request for Information (RFI) that “DOE will contribute not more than incremental cost associated with CCS technology for the single power train. Approximately 90 percent CO₂ capture and sequestration for the integrated power train will be required.” There is concern that the 90 percent capture requirement will deter industry from participating because the turbine technology to achieve that goal needs further testing. In addition, there are questions about the ability of the Department to conduct multiple projects given the estimated costs for making the necessary design modifications to the proposed commercial IGCC power plants.

The Department has several other clean coal programs that are working on CCS technologies. It is still unclear how the revised FutureGen program will support and complement the Clean Coal Power Initiative and the Carbon Sequestration Partnerships program to ensure a path forward to full-scale demonstration and deployment of integrated carbon capture and sequestration systems.

Timeline of Events at the End of 2007 to Beginning of 2008

May 25, 2007: Department of Energy issued its draft Environment Impact Statement for the FutureGen Project.

November 9, 2007: Department of Energy announces the completion of its Final Environmental Impact Statement (EIS) for the FutureGen Project. The EIS evaluated four potential sites to host the project: Mattoon, IL; Tuscola, IL; Jewett, TX; and Odessa, TX and it preliminarily found that all of these sites were acceptable locations for the FutureGen project.

November 30, 2007: Secretary Bodman sends letter to Representative Johnson stating the Department is diligently working to complete the EIS process and issue the Record of Decision on a schedule that permits the FutureGen site selection by the end of December 2007.

December 6, 2007: The Chief Executive Officer of the FutureGen Alliance writes to Under Secretary Albright in response to the Department’s proposed cost-share amendment to the FutureGen Cooperative Agreement between DOE and the Alliance. The amendment sought review of the federal government’s financial risk with the FutureGen project. The letter also informed the Department of its intention to make a site selection on December 18, 2007.

December 11, 2007: The Acting Principal Deputy Assistant Secretary of the Office of Fossil Energy responds to the December 6th letter stating the December 18, 2007 announcement of the site selection is inadvisable.

December 18, 2007: The Alliance announces Mattoon, IL as the final site for the FutureGen Project.

January 10, 2008: Alliance Chief Executive Officer writes to Under Secretary Albright proposing a new approach to financing FutureGen.

January 22, 2008: Acting Principal Deputy Assistant Secretary writes to Alliance CEO underscoring its commitment to its earlier proposal which would require the Alliance to bear an equal share of the project cost increases beyond the current cost estimate.

January 24, 2008: Alliance CEO writes to Under Secretary Albright offering to meet again to further discuss a detailed path forward to finance FutureGen and stating the willingness of the Alliance to boost its cost-share for costs above the \$1.8 billion from 26 % to 50%.

January 30, 2008: Under Secretary Albright writes to Mr. Thompson, Chairman of the Alliance Board expressing its concern about the uncertainty of federal expenditures for the FutureGen Initiative and announcing that the Department does not intent to approve a Continuation Application beyond the current budget period which expires June 15, 2008. The letter also stated that the Department would restructure the FutureGen program.