

Testimony of

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Before the

**Subcommittee on Energy and Environment
Committee on Science and Technology
U.S. House of Representatives**

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Chairman Lampson, Ranking Member Inglis and members of the Subcommittee, I thank you for inviting me to be here with you to discuss the status of the Department of Energy’s FutureGen program. Our goal for FutureGen remains unchanged: to make our most abundant and least costly fuel resource for electricity generation—coal—burn even cleaner, with dramatically reduced carbon emissions into the atmosphere.

In January, the U.S. Department of Energy announced its intention to restructure the FutureGen program. We restructured this program to maximize our national investment in clean coal research and technology (R&D) by demonstrating cutting-edge carbon capture and storage (CCS) technologies at more than just one power plant. Before I discuss the new direction of FutureGen, I think it would be helpful to briefly discuss the role of coal in America’s energy portfolio.

The Importance of Coal in America’s Energy Portfolio

Coal is a strategic, national energy, security resource. It is the most abundant, lowest-priced fossil fuel in the United States, with recoverable reserves projected to last about 240 years at today’s usage rates and prices. It is also an abundant natural resource for much of the world and will remain a major source of energy in the United States and for many other countries well into this century. Coal accounts for almost a third of America’s total energy production and just over half of all U.S. electricity generation. In 2007, the U.S. consumed 1.1 billion tons of coal, which is expected to grow to an estimated 1.5 billion tons by 2030, a 37 percent increase, according to DOE’s Energy Information Administration.

We are committed to using coal more cleanly and efficiently while, at the same time, reducing its environmental impacts. Since 2001, the Bush Administration and Congress have called for the investment of more than \$2.5 billion in clean coal research and development. With the President’s FY 2009 budget proposal, we have asked Congress to appropriate the funds needed to

expand this investment. The budget requests \$648 million for DOE's advanced coal research, development and demonstration program—the largest amount requested for DOE's coal program in more than 25 years.

Recent Technology Advancements

When FutureGen was first announced, few proposals for the construction of integrated gasification combined-cycle (IGCC) coal plants existed. Today, in addition to the two IGCC plants currently operating on coal in Florida and Indiana, and one operating on pet-coke in Delaware, two proposed IGCC power plants have passed the permitting process (an AEP plant in Illinois and a Duke plant in Indiana), and around 30 of these clean-coal plants have been publicly announced and are in various stages of planning. As these facilities are built and operated, they will provide experience not only with advanced power technologies, like IGCC, but also could utilize CCS technologies supported under our restructured FutureGen program.

Carbon capture and storage technology has also made important strides since the original FutureGen program was launched in 2003. DOE's Carbon Sequestration program has created a network of seven Regional Carbon Sequestration Partnerships to help the program develop the technology, infrastructure, and regulations necessary to implement large-scale carbon dioxide (CO₂) sequestration in different regions and geologic formations within the Nation. The large-scale tests are a continuation of the 25 small-scale geologic storage tests that the Partnerships are implementing today. The Carbon Sequestration program's small and large-scale field tests, launched by DOE in 2003, form the centerpiece of national efforts to develop the infrastructure and knowledge base needed to place carbon sequestration technologies on the path to commercialization.

The Restructured FutureGen Program

FutureGen was first announced in 2003 as a \$950 million initiative to create a single coal-based power plant to demonstrate advanced clean-coal technology. The project was designed to produce hydrogen and electricity on a smaller-than-commercial scale, serving as an R&D testing laboratory. Our goal then, as now, was to find a way to produce electricity from coal with dramatically lowered emissions into the atmosphere.

The Energy Department joined with industry, in the form of the FutureGen Alliance, in a cost-sharing agreement calling for taxpayers to shoulder up to 74 percent of the cost of this demonstration project. The FutureGen Alliance partners would cover 26 percent, and we looked to international governments for contributions as well. However, as plans for the demonstration plant moved ahead, the project's estimated total cost escalated sharply. In fact, cost estimates reached \$1.8 billion and would have likely continued to rise, perhaps dramatically as had occurred recently. After several months of discussions with the FutureGen Alliance, it became evident that we could not reach agreement to revise the cost sharing arrangement in a manner that would limit in a reasonable way the Government's financial exposure on this project. Moreover, issues arose involving the Alliance's insistence to leverage major portions of its 26 percent contribution as debt against the project. This, coupled with the changes in the market discussed above, led the Department to restructure the program.

The goal of our restructured FutureGen program remains the same as the original FutureGen approach announced in 2003: to maximize our national investment in clean coal research by demonstrating cutting-edge system integration of CCS technologies. The difference is that under the restructured program, our plan, with current cost estimates, is to support not just a single less-than-commercial-scale R&D testing laboratory, but rather to provide funding for commercial demonstration of integrated advanced carbon capture and storage technologies.

Unlike the original approach, the new plants will operate commercially from the start and will provide a significant amount of electricity to our Nation's electric grid. This will help meet the Nation's rapidly growing demand for energy, while also demonstrating the commercial viability of permanently and safely storing carbon dioxide deep underground. These commercial plants will be able to be replicated around the world. The power sector will be able to plan and to finance new state-of-the-art coal facilities based upon cutting-edge system integration of CCS technologies at commercial plants under the restructured FutureGen program.

The restructured approach harnesses the power of private sector innovation, limits taxpayer exposure, and maximizes the impact of the Federal investment while substantially increasing our likelihood of success. At current cost estimates, some of the benefits we anticipate include:

- Sequestering at least double the amount of CO₂ expected from the original FutureGen program. The CO₂ generated by each plant will be sequestered in a saline formation, or possibly used in other applications that result in permanent sequestration such as enhanced oil recovery.
- Building on technological R&D advancements that have been made since the FutureGen concept was announced in 2003, which includes small-scale carbon sequestration projects, the Regional Sequestration Partnerships, and IGCC research.
- Accelerating the timeframe for full-scale commercial operation of IGCC or other advanced technology coal power plants with CCS, enabling market use as soon as the plants are commissioned.
- Joining with industry in its efforts to build clean-coal plants by providing funding for the addition of CCS technology to multiple plants.
- Demonstrating the integration of CCS technology and clearing hurdles associated with early technology demonstration, thereby increasing the likelihood of rapid commercial deployment after 2015.
- Helping provide the technology basis to inform regulatory and technology development to the next generation of coal plants, many of which are facing cancellations due to concerns about the legal and regulatory situation relating to greenhouse gas emissions.

To move this restructured FutureGen program forward, DOE launched an aggressive schedule for its implementation. The Department initiated this schedule with a Request for Information (RFI) to secure industry input in advance of a competitive solicitation to provide financial assistance for CCS demonstrations integrated with market-ready, commercial IGCC or other clean technology coal power plants. The deadline for the public to submit comments was March 3, 2008. I am pleased to report to you that we have had strong interest from approximately 50 parties that responded to the RFI. DOE staff is currently reviewing and analyzing the input received from these parties, and our next step will be to issue for comment a draft Funding Opportunity Announcement (FOA) in May. Following the subsequent issuance of the final FOA, we will evaluate the

applications received, and anticipate announcing selections no later than January 2009. After successful completion of National Environmental Policy Act (NEPA) analyses, commercial operations could begin in 2015.

Conclusion

To be successful in confronting the energy and environmental challenges before us, we cannot continue the business-as-usual approach. We must continually ask if we are efficiently using our taxpayer investments to achieve a cleaner, more sustainable, more affordable and more secure energy future. Where we are not, we must make changes; that's what we are doing with the FutureGen program.

The Department appreciates the support we have received from Congress in our efforts to advance clean coal technologies, and we look forward to continuing that partnership. We hope you will join us in supporting the restructured FutureGen program.

I thank you, Mr. Chairman, for scheduling this hearing and for your interest in the new FutureGen program, and I look forward to answering any questions that you and members of the Subcommittee may have.

C.H. “Bud” Albright, Jr.

Bud Albright was nominated by President George W. Bush to serve as Under Secretary of Energy on June 21, 2007 and was unanimously confirmed by the Senate on August 3, 2007.

Under Secretary Albright oversees the Department’s Energy and Environment programs, including its diverse portfolio of applied energy research and development activities, nuclear waste management efforts, and environmental cleanup of the nuclear weapons complex.

Prior to joining the Department of Energy, Mr. Albright was Republican Staff Director for the U.S. House of Representatives Committee on Energy and Commerce. In that role he worked to address issues facing the country’s energy, environmental, telecommunications and health industries. Before joining the Committee, Mr. Albright was Vice President of Federal Affairs for Reliant Energy.

Mr. Albright also served as Deputy Associate Attorney General at the U.S. Department of Justice, as well as Deputy General Counsel of the U.S. Department of Housing and Urban Development.

Additionally, Mr. Albright was as Associate Counsel on the U.S. Senate Select Committee investigating the Iran-Contra incident. From 1981 through 1986, he also served as an Assistant United States Attorney in the Eastern District of Virginia.

While attending law school, Mr. Albright worked on the U.S. Senate Judiciary Committee as a legislative aide and personal aide to Senator Strom Thurmond. He has also worked as a law clerk at a private law firm.

A native of Rock Hill, South Carolina, Mr. Albright holds an undergraduate degree in history and political science from Presbyterian College in his home state and a Juris Doctor Degree from George Mason University School of Law in Virginia. Mr. Albright lives in Virginia with his wife and their two children.