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Research on Permanent Storage of Carbon Dioxide Expanded

DOE studies potential for injecting carbon gases deep underground

The U.S. Department of Energy (DOE) is moving into a new, expanded phase of its program to develop carbon sequestration projects, including studying the potential of injecting carbon dioxide emissions from power plants into underground aquifers. Carbon dioxide, from the burning of fossil fuels, contributes to global warming.

A DOE press release says Energy Secretary Spencer Abraham announced November 21 that the federal government intends to create a nationwide network of four to 10 regional partnerships for carbon sequestration – a process of capturing and storing carbon dioxide emissions to prevent their release into the atmosphere.

Speaking to the National Coal Council, Abraham called on industry, state and local agencies, universities and others to join DOE in forming the partnerships, which he said will help determine the technologies, regulations and infrastructure that are best suited for specific regions of the country. The government will offer up to \$2 million per partnership for initial planning efforts.

Abraham also announced that DOE has approved a proposal by American Electric Power (AEP) and Batelle, a nonprofit technology development corporation, to begin studying potential sequestration sites in the Ohio River Valley where carbon emissions from power plants might be injected deep underground.

The AEP/Batelle project will study the feasibility of injecting carbon gases into brine-filled formations hundreds of meters below ground. Abraham says that, in theory, these deep saline formations, which underlie all or part of 35 states, could hold all of the carbon dioxide emitted by the nation's coal-burning power plants for the next 100 years. No decision will be made on proceeding beyond the current study phase until the subsurface geology is deemed safe. DOE is providing \$3.2 million of the project's total \$4.2 million cost.

More information on carbon sequestration research can be found at the following Web site: <http://www.fossil.energy.gov>

Following is the text of the press release:

**U.S. Department of Energy
November 21, 2002**

Abraham Announces Plans to Expand DOE's Carbon Sequestration Research

Regional Partnerships, Ohio River Valley Project to Study Ways to Capture, Store Carbon Gases

Washington, DC - Secretary of Energy Spencer Abraham, speaking today to the National Coal Council, announced that the Department of Energy will move into a new, expanded phase of its program to develop "carbon sequestration," a promising area of research in which carbon emissions are captured and permanently stored rather than

being released to the atmosphere.

Secretary Abraham said that the federal government intends to create a nationwide network of four to ten "regional sequestration partnerships." He called on industry, state and local agencies, universities, and others to join with the Energy Department in forming the partnerships.

"These regionally-focused efforts will become the centerpiece of our sequestration program. They will help us determine the technologies, regulations, and infrastructure that are best suited for specific regions of the country," Secretary Abraham said.

Abraham also announced that the Energy Department has given the go-ahead to a research team headed by American Electric Power (AEP) and Battelle to begin studying potential sequestration sites in the Ohio River Valley where carbon emissions from power plants might be injected deep underground instead of being released into the atmosphere.

"The focus will be on the deep saline formations that lie thousands of feet below the surface -- well below the aquifers commonly used for drinking water," Secretary Abraham said. "Theoretically, they could hold all of the carbon dioxide emitted by the nation's coal-burning power plants for the next 100 years. But we will move deliberately, because we want to go as far and as fast as the science takes us."

President Bush and others have singled out carbon sequestration as one of the most promising new approaches for countering the threat of global climate change. In one of his first major addresses on climate change, on June 11, 2001, the President said, "We all believe technology offers great promise to significantly reduce emissions - especially carbon capture, storage and sequestration technologies."

Secretary Abraham said that the Energy Department will issue a solicitation notice later this month asking industry, state and local agencies, universities and others to begin forming the regional partnerships.

The government will offer up to \$2 million per partnership for initial planning efforts. Later, as much as \$7 million per partnership could be provided for actual field verification tests and more detailed regulatory and infrastructure planning. The first partnerships are expected to be announced next spring.

The AEP/Battelle project will focus on one type of sequestration - the injection of carbon gases into brine-filled formations thousands of feet underground. Theoretically, these deep saline formations, which underlie all or part of 35 states, could hold all of the carbon dioxide emitted from the nation's coal-burning power plants. The brackish water in these rock formations is far too salty for human consumption, and they exist well below drinking water aquifers. Researchers will study whether the deep saline formations beneath the Ohio-West Virginia border are suitable for permanently entrapping large quantities of carbon dioxide. The study is especially important because it takes place in the heart of the largest concentration of fossil fuel power plants in the nation. AEP has volunteered its Mountaineer Plant in New Haven, W.Va., as the test site for investigating the concept.

During the next 18 months, researchers will conduct seismic surveys of the underground rock formations and drill a 10,000-foot exploratory well on the power plant property. No decision will be made on proceeding beyond the current study phase until the subsurface geology is deemed safe and suitable for carbon sequestration and cost estimates have been prepared.

The Department, through its National Energy Technology Laboratory (NETL), is

providing \$3.2 million of the project's total \$4.2 million cost. Other partners providing financial and in-kind support include AEP, BP, Battelle, and Schlumberger. The Ohio Coal Development Office, part of Ohio's Department of Development, is also supporting the project. Technical support to the project will be provided by experts from NETL, Pacific Northwest National Laboratory, West Virginia University, the Ohio Division of Geological Survey, The Ohio State University, and others.

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