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# Environmental Compliance Bulletin

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## Air Pollution: Special Report

### Climate Change

#### Lawmakers Briefed on Carbon Capture, Storage Initiatives

Carbon capture and storage can significantly increase energy independence while reducing carbon dioxide emissions, an industry attorney told state legislators during the National Conference of State Legislatures annual meeting Aug. 5 in Boston.

Use of the technology will allow power plants to burn more coal--the nation's most abundant energy source--and promote enhanced oil recovery, according to Darrick W. Eugene, an attorney with Vinson & Elkins LLP and general counsel of the Texas Carbon Capture and Storage Association.

Coal is the fuel source for more than half of the nation's power plants and the United States has reserves that will last for 250 years, Eugene told lawmakers. "With carbon capture and storage, we can use more coal to produce energy," he said.

Using certain technologies, coal-fired power plants that produce carbon dioxide can sequester the greenhouse gas and store it underground in geological formations. "It is not a pollutant until it is emitted in the atmosphere," Eugene said.

Use of carbon dioxide for enhanced oil recovery could provide the nation with a 15- to 20-year supply of oil, Eugene said. About 87 billion barrels of oil technically are recoverable, while economically, 47 billion barrels are recoverable, he estimated.

#### Committee Hears Testimony

However, in testimony Aug. 1 before the Senate Energy and Natural Resources Committee, Carl Bauer, director of the Department of Energy's National Energy Technology Laboratory, said several hurdles stand in the way of its widespread adoption. For example, Bauer noted, states need to build the cost of carbon capture and storage into their electricity rate base or there will be no way to pay for it.

Jeffrey Phillips, advanced coal program manager at the Electric Power Research Institute, said ownership of the captured carbon dioxide must be decided before companies will agree to participate in carbon capture and storage. The question of who is liable if the carbon dioxide leaks out of the ground also must be decided, he said. Phillips described the liability question as "an enormous impediment" that is "hard to underestimate."

"Bankers and insurance companies do not like uncertainty," he added.

Phillips said standards also need to be developed to govern the transport of the carbon dioxide.

Jerry Hollinden, senior vice president of URS Corp., testifying on behalf of the National Coal Council, said there currently is no place to put the carbon dioxide. If a storage site is not available for the carbon dioxide, carbon capture and storage cannot proceed, he noted.

However, Phillips said, enhanced oil recovery can be "a key bridge" to make carbon capture and storage happen. With current technology, carbon dioxide can be captured for about \$50 per ton, he continued. The oil industry pays about \$36.50 per ton. Therefore, selling the carbon dioxide to the oil industry could be a key to helping offset the cost of capturing the carbon dioxide, he explained.

Sen. Ken Salazar (D-Colo.) said plug-in hybrid vehicles, which run off electricity stored in batteries charged by being plugged into an electricity source, are a good opportunity to use coal resources.

Bauer said plug-in hybrids could increase the demand for electricity.

#### **FutureGen Called Key Milestone**

A key milestone in the development of carbon capture and storage technology will be the FutureGen initiative through which DOE and a consortium of coal producers and electricity generators plan to build a near-zero emission coal-fired power plant (13 BECB 261, 8/14/06).

According to DOE, the plant will serve as a large scale engineering laboratory for testing new clean power, carbon capture, and coal-to-hydrogen technologies. Final site selection is set for December, with two sites in Texas and two in Illinois under consideration, Eugene said. Construction would start in 2009 with the beginning of operations scheduled for 2012, he added.

States have been very active in regulating carbon capture and storage, Eugene continued. For example, in late June, New Mexico issued a "forward-thinking" report that addresses property rights and liability issues and identifies regulatory gaps, he said. The report will serve as the basis for legislative activity, he added.

California is considering a carbon dioxide storage bill (A.B. 705), but the measure has run into opposition from groups that have raised the possibility of a catastrophic release of carbon dioxide, which Eugene said is "extremely unlikely."

Maine included the use of new carbon capture and storage technology as a possible offset when it adopted authorizing legislation (L.D. 1851) for the state's participation in the Regional Greenhouse Gas Initiative, a multi-state cap-and-trade program in the Northeast designed to limit carbon dioxide emissions, Eugene noted (13 BECB 277, 8/28/06 Texas passed a bill (H.B. 3732) this year that makes it the first state to certify carbon capture and storage for enhanced oil recovery, Eugene said. The measure also provided tax breaks for carbon dioxide capture and enhanced oil recovery.

Legislation adopted in Wyoming allows the use of carbon dioxide pipelines and establishes a partnership to build a coal gasification plant that will use carbon capture and storage, Eugene said.