

## 1. CLIMATE: EPA issues final rules for carbon sequestration (11/22/2010)

**Katherine Ling, E&E reporter**

U.S. EPA finalized two rules today for regulating the underground sequestration of carbon dioxide with the aim of protecting water supplies and providing guidelines that should help the expansion of carbon capture and sequestration technology for fossil fuel-burning power plants.

One [rule](#) creates a new "Class VI" injection well for carbon sequestration that would be regulated under a different set of construction, monitoring and testing requirements under EPA's Underground Injection Control (UIC) Program authorized by the Safe Drinking Water Act.

The [second rule](#) would require permit holders to create a CO2 monitoring, reporting and verification plan and to report the amount of CO2 sequestered using a mass balance approach under the Clean Air Act.

"We're taking a major step towards path breaking innovations that will reduce greenhouse gases and put America in the forefront of the clean energy economy," EPA Administrator Lisa Jackson said in a statement. "By providing clarity about greenhouse gas reporting and the necessary protections for drinking water sources during carbon sequestration, we've cleared the way for people to use this promising technology."

A White House task force set up in February to make recommendations about the barriers to widespread, cost-effective CCS deployment within 10 years deemed a framework for federal regulations and liability essential for the development of carbon capture and sequestration (CCS) technology. The task force concluded that with additional federal coordination, the nation could achieve President Obama's goal of setting up five to 10 commercial-scale CCS demonstration projects by 2016 ([Greenwire](#), Aug. 12).

The new rules include automatic shutoff systems for unintended movement of material, periodic review of areas around injection wells, a recommended 50-year monitoring post-injection, and clarified financial responsibility for emergencies, site closure and cleanup, if necessary. Some of the rules are subject to the discretion of the state regulators.

EPA estimates annual compliance costs for the UIC rule will reach \$38 million using a 3 percent discount rate. The reporting costs, however, represent less than 3 percent of the total cost of sequestering carbon, EPA said.

Greenhouse gas reporting costs range from \$320,000 for deep saline formations to \$4,000 for enhanced oil and gas recovery operations, where the CO2 is injected into oil and gas wells to push out remaining the remaining resources, EPA said.

The new rules are likely to have the greatest impact on enhanced oil and gas recovery operations, as they are currently the most prevalent carbon sequestration projects in the United States.

The American Petroleum Institute said it needed more time to study the final rules but warned that the proposed rules included burdensome and costly requirements.

"As proposed, the UIC rule had many positive features but was overly prescriptive and would have had the unanticipated consequence of hindering the innovations that could improve both well security and performance," Steve Crookshank, an API senior economist, said. "Likewise, as proposed the [greenhouse gas reporting] rule would have required enhanced oil and gas producers to comply with overly burdensome reporting requirements that were inappropriate for their operations."

But Ann Weeks, senior counsel for the Clean Air Task Force, an advocacy group, said that on first look, EPA had done a good job handling the oil and gas recovery projects and integrating the injection and greenhouse gas reporting requirements.

"It seems like they have made an effort to allow a transition to enhanced oil recovery to sequestration without loading onerous requirements that don't appear to be necessary," Weeks said.

Weeks said the rules and reporting requirements could provide a foundation for power plants to use sequestration to meet air pollution emission standards. About 95 percent of the 500 largest U.S. power plants that emit CO2 are within 50 miles of a potential CO2 storage reservoir, including deep saline formations, depleted oil and gas fields and deep, unmineable coal seams, EPA said.

"That means that we really have a system or tool to get deep reductions from CO2 from electricity production, whether from gas or coal," Weeks said.

It could also possibly help provide definitions for meeting requirements under a system that compensates for carbon emission reductions in the future, she added.

[Click here](#) to read the UIC rule.