

DOE Awards \$126.6 Million for Two More Large-Scale Carbon Sequestration Projects

Projects in California and Ohio Join Four Others in Effort to Drastically Reduce Greenhouse Gas Emissions

Washington, D.C. - The U.S. Department of Energy (DOE) today announced awards of more than \$126.6 million to the West Coast Regional Carbon Sequestration Partnership (WESTCARB) and the Midwest Regional Carbon Sequestration Partnership (MRCSP) for the Department's fifth and sixth large-scale carbon sequestration projects. These industry partnerships, which are part of DOE's Regional Carbon Sequestration Partnership, will conduct large volume tests in California and Ohio to demonstrate the ability of a geologic formation to safely, permanently, and economically store more than one million tons of carbon dioxide (CO₂). Subject to annual appropriations from Congress, the two projects - including the partnership's cost share - are estimated to cost over \$183 million. Advancing carbon sequestration is a key component of the Bush Administration's comprehensive efforts to commercially advance clean coal technology to meet current and future energy needs and meet President Bush's goal to stop greenhouse gas emissions growth by 2025.

"The formations to be tested during the third phase of the partnerships program are the most promising of the major geologic basins in the United States. Collectively, these formations have the potential to store more than 100 hundred years of CO₂ emissions from all major point sources in North America," Acting Deputy Secretary of Energy Jeffrey Kupfer said. "Tests like these will help provide the confidence and build the infrastructure necessary to commercialize these technologies, and will enable the U.S. to continue using its vast resources of coal while protecting the earth for future generations."

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The new projects will demonstrate the entire CO₂ injection process - pre-injection characterization, injection process monitoring, and post-injection monitoring - for large scale injections of one million tons or more to test the ability of different geologic settings to permanently store CO₂. DOE plans to invest \$126.6 million in the two projects over the next 10 years, while the industry partners will provide \$56.6 million in cost-shared funds to make these projects a success.

In the first stages of the projects, researchers will characterize the selected sites. Over the first 24 months, researchers and industry partners will complete the modeling, monitoring, and infrastructure improvements needed before CO₂ can be injected. These efforts will establish a baseline for future monitoring after CO₂ injection begins. Each project will then inject one million tons or more of CO₂ into a regionally significant storage formation. After injection, investigators will monitor and model the fate of the CO₂ to determine the effectiveness of the storage reservoir.

The latest projects to be awarded are outlined below:

- **Midwest Regional Carbon Sequestration Partnership (MRCSP)** - The MRCSP, led by Battelle Memorial Laboratories, will demonstrate CO₂ storage in the Mount Simon Sandstone. This geologic formation stretches from Kentucky through Ohio and has the potential to store more than 100 years of CO₂ emissions from major point sources in the region. The MRCSP will inject approximately one million tons of CO₂ from an ethanol production facility. In this area of Ohio, the Mount Simon formation is approximately 3,000 feet deep. The CO₂ will be injected on the facility site, and MRCSP will be responsible for development of the infrastructure, operations, closure, and monitoring of the injected CO₂. The MRCSP covers Ohio, Indiana, Kentucky, West Virginia, Maryland, Pennsylvania, New York, and Michigan. Total Project Cost: \$92,846,271; DOE Share: \$61,096,271
- **West Coast Regional Carbon Sequestration Partnership (WESTCARB)** - The WESTCARB Partnership, led by the California Energy Commission, will conduct a geologic CO₂ storage project in the San Joaquin Basin in Central California. The project will inject one million tons of CO₂ over four years into deep (7,000+ feet) geologic formations below a 50-megawatt, zero-emission power plant in Kimberlina, CA. The Clean Energy Systems plant uses natural or synthesis gas in an oxyfuel system and produces a relatively pure stream of CO₂.

This CO2 will be compressed and injected into one of a number of potential storage formations below the surface of the plant. WESTCARB will develop, operate, and close the injection site as well as monitor the fate of the injected CO2. The WESTCARB Partnership includes California, Arizona, Nevada, Oregon, Washington, Alaska, Hawaii, and British Columbia. Total Project Cost: \$90,594,099; DOE Share: \$65,606,584.

DOE's Regional Carbon Sequestration Partnerships are a ten-year initiative, launched in 2003, which form the centerpiece of national efforts to develop the infrastructure and the knowledge base needed to place carbon sequestration technologies on the path to commercialization. The seven regional partnerships include more than 350 state agencies, universities, and private companies within 41 states, two Indian nations, and four Canadian provinces.

During the first phase of the program, seven partnerships characterized the potential for CO2 storage in deep oil-, gas-, coal-, and saline-bearing formations. When Phase I ended in 2005, the partnerships had identified more than three trillion metric tons of potential storage capacity in promising sinks. This has the potential to represent more than 1,000 years of storage capacity from point sources in North America. In the program's second phase, the partnerships implemented a portfolio of small-scale geologic and terrestrial sequestration projects. The purpose of these tests was to validate that different geologic formations have the injectivity, containment, and storage effectiveness needed for long-term sequestration. The third phase, large volume tests are designed to validate that the capture, transportation, injection, and long term storage of over one million tons of carbon dioxide can be done safely, permanently, and economically.

Today's awards are the fifth and sixth of seven awards in the third phase of the Regional Carbon Sequestration Partnerships program. In October, DOE announced the first three large volume carbon sequestration projects that total \$318 million for Plains Carbon Dioxide Reduction Partnership, Southeast Regional Carbon Sequestration Partnership, and Southwest Regional Partnership for Carbon Sequestration, and in December, DOE announced its fourth award to the Midwest Geological Sequestration Consortium.

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