The Plains CO_2 Reduction (PCOR) Partnership: Progressing Geologic Storage Through Applied Research

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ABSTRACT

The Energy & Environmental Research Center (EERC) is focused on solving the energy and environmental challenges facing everyone today and tomorrow. Through its Center for Climate Change & Carbon Capture and Storage, the EERC is engaged in research activities in direct support of carbon management. One significant carbon management effort led by the EERC is the Plains CO_2 Reduction (PCOR) Partnership.

The PCOR Partnership is one of seven regional partnerships established by the U.S. Department of Energy National Energy Technology Laboratory to assess and develop carbon sequestration opportunities. The PCOR Partnership, comprising state agencies; coal, oil and gas, and other private companies; electric utilities; universities; and nonprofit organizations, covers an area of over 1.4 million square miles in the central interior of North America and includes all or part of nine states and four Canadian provinces.

The PCOR Partnership region has stable geologic basins that are ideal storage targets for carbon capture and storage (CCS). These basins have been well-characterized because of commercial oil and gas activities and have very significant CO_2 storage capacities. The region's energy industry is evaluating carbon management options including CCS. Many of the region's oil fields could develop CO_2-based enhanced oil recovery (EOR) projects if CO_2 were more readily available. CO_2-based tertiary EOR projects offer a means of developing the expertise and infrastructure required to make geologic CCS a commercial reality.

The PCOR Partnership is teaming with industrial partners to conduct two commercial-scale (greater than 1 million tons a year) CCS demonstrations in its region. One of the large-scale tests will demonstrate CO_2 storage in a saline formation, while the other will be a combined CCS and EOR demonstration. The sources of CO_2 in both demonstrations are natural gas-processing facilities. The commercial-scale demonstration tests are designed to establish the technical and economic efficacy of CCS in the region, and injections are planned to begin between 2012 and 2014 for both projects.