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THE PLAINS CO2 REDUCTION PARTNERSHIP: DEVOLOPING TECHNOLOGIES FOR CCS DEPLOYMENT IN CENTRAL NORTH AMERICA

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The Plains CO2 Reduction (PCOR) Partnership, managed by the Energy & Environmental Research Center (EERC), is one of seven regional partnerships created in 2003 by the U.S. Department of Energy to investigate the capture and geologic storage of carbon dioxide (CO2). The PCOR Partnership region covers an area of over 3.6 million square kilometers in the central interior of North America and includes all or part of nine U.S. states and four Canadian provinces. Throughout this region, the PCOR Partnership is working to evaluate the best methods and technologies to carry out commercial- scale CCS (carbon capture and storage).

The PCOR Partnership has completed numerous activities to date. These include a best practices manual for a feasibility study aimed at storing 2 million tonnes of CO2 a year from a gas-processing facility in a saline formation; a regional technology implementation plan for a combined acid gas enhanced oil recovery (EOR) and CO2 storage project; and a binational effort between the United States and Canada to characterize the lowermost saline system in the Williston and Alberta Basins as a potential storage target. In addition, the PCOR Partnership is providing essential support in two active demonstration projects: the Bell Creek and Aquistore projects.

The Aquistore project, managed by the Petroleum Technology Research Centre (PTRC), serves as a storage site for CO2 captured at SaskPower's Boundary Dam, the world's first commercial-scale postcombustion coal-fired CCS facility. The PCOR Partnership is working with PTRC on site characterization; risk assessment; public outreach; and monitoring, verification, and accounting (MVA) activities at the Aquistore site. Since the start of injection in April 2015, the PCOR Partnership has been conducting near-real-time history matching and predictive simulation activities using daily injection data. This work is aiding in the deployment of MVA at the Aquistore site.

At the Bell Creek oil field, the PCOR Partnership is working with Denbury to study CO2 storage associated with commercial CO2 EOR. Denbury Onshore LLC is carrying out injection and production operations, with the PCOR Partnership providing support for site characterization, modeling and simulation, integrated risk assessment, and MVA of the injected CO2. As of October 2015, 2.6 million tonnes of CO2 has been stored since injection operations began at the Bell Creek Field in May 2013.

Paramount to PCOR Partnership activities is knowledge sharing focused on effective techniques for implementing large-scale CO2 storage projects. As such, the PCOR Partnership also continues to provide widespread CCS outreach and education, keep abreast of regulatory developments, and conduct regional characterization efforts all aimed at readying the region for the widespread deployment of CCS.