THE PLAINS CO_2 REDUCTION (PCOR) PARTNERSHIP: COLLABORATIVE U.S.–CANADA CARBON CAPTURE AND STORAGE DEMONSTRATION ACTIVITIES

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ABSTRACT

The U.S.–Canada Clean Energy Dialogue (CED) was established in February 2009 to further cross-border cooperation on environmental protection and energy security. The CED created ways to collaborate on the development of key clean energy science and technology issues, including the use of carbon capture and storage (CCS) technology to control greenhouse gas emissions. The Plains CO_2 Reduction (PCOR) Partnership's activities exemplify these collaborative efforts.

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 CCS opportunities. The PCOR Partnership covers an area of over 1.4 million square miles in the central interior of North America and includes all or parts of nine U.S. states and four Canadian provinces.

The PCOR Partnership has teamed with industrial partners in Canada for two large-scale CCS demonstrations designed to establish the technical and economic efficacy of CCS in the region. These two activities support the CED in the development of a new low-carbon energy economy. Apache Canada Ltd. operates a combined enhanced oil recovery/sequestration project where acid gas (approximately 70% CO_2 and 30% H_2S) from the Zama, Alberta, gas plant is injected into pinnacle reef structures for use as a miscible flood agent. Approximately 80,000 tons of acid gas has been injected at Zama since December 2006. The second demonstration, Spectra Energy's Fort Nelson CCS Feasibility Project, aims to inject sour CO_2 (approximately 95% CO_2 and 5% H_2S) from the Fort Nelson gas-processing facility to a depth of approximately 7200 feet into a saline formation in the northeastern corner of British Columbia. The PCOR Partnership is conducting comprehensive monitoring, verification, and accounting activities at both sites in conjunction with the commercial partners.

The PCOR Partnership is also partnering with Alberta Innovates – Technology Futures, the Saskatchewan Ministry of Energy and Resources, and several other Canadian entities to evaluate the potential for and possible effects of CO_2 storage in the basal aquifer of the northern plains–prairie region of North America.