

PROJECT facts

U.S. DEPARTMENT OF ENERGY
OFFICE OF FOSSIL ENERGY
NATIONAL ENERGY TECHNOLOGY LABORATORY

Sequestration

06/2005



PLAINS CO₂ REDUCTION PARTNERSHIP

Background

The U.S. Department of Energy has designated seven partnerships of state agencies, universities, and private companies that will form the core of a nationwide network that will help determine the best approaches for capturing and permanently storing gases that can contribute to global climate change. All together, the partnerships include more than 244 organizations, spanning 40 states, three Indian nations, and four Canadian provinces.

The seven partnerships will develop the framework needed to validate and potentially deploy carbon sequestration technologies. They will evaluate and determine which of the numerous sequestration approaches that have emerged in the last few years are best suited for their specific regions of the country. They will also begin studying possible regulations and infrastructure requirements that would be needed should climate science indicate that sequestration be deployed on a wide scale in the future.

CONTACTS

Sean Plasynski

Sequestration Technology Manager
National Energy Technology
Laboratory
626 Cochrans Mill Road
P.O. Box 10940
Pittsburgh, PA 15236
412-386-4867
sean.plasynski@netl.doe.gov

John Litynski

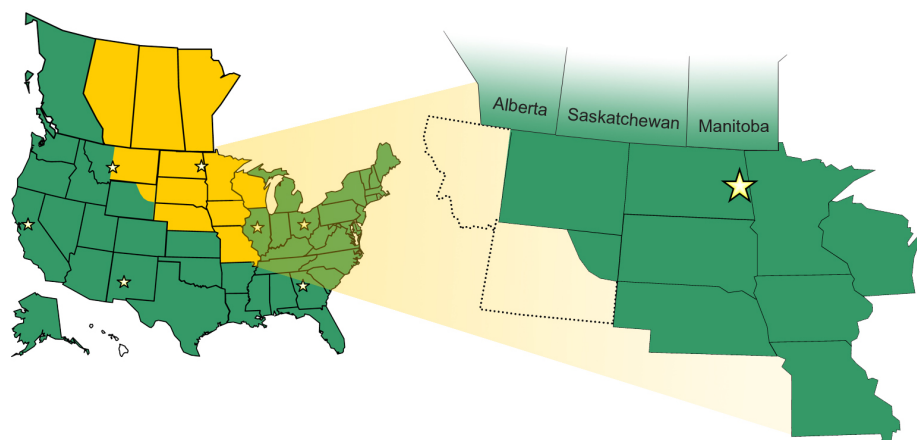
Project Manager
National Energy Technology
Laboratory
3610 Collins Ferry Road
P.O. Box 880
Morgantown, WV 26507
304-285-1339
john.litynski@netl.doe.gov

CUSTOMER SERVICE

1-800-553-7681

WEBSITE

www.netl.doe.gov



Plains CO₂ Reduction Partnership - (Region 7)



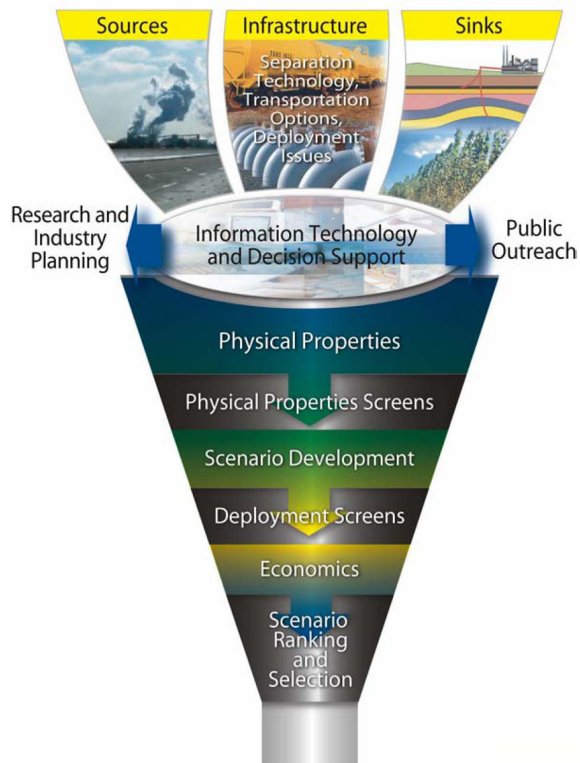
Description

PARTNERS

Alberta Department of Environment
Alberta Energy & Utilities Board
Alberta Energy Research Institute
Amerada Hess Corporation
Basin Electric Power Cooperative
Bechtel Corporation, Nexant
Center for Energy & Economic Development
Chicago Climate Exchange
Dakota Gasification Company
Ducks Unlimited Canada
Eagle Operating, Inc.
Encore Acquisition Company
Environment Canada
Excelsior Energy Inc.
Fischer Oil and Gas, Inc.
Great Northern Power Development
Great River Energy
Interstate Oil and Gas Compact Commission (IOGCC)
Kiewit Mining Group
Lignite Energy Council
Manitoba Hydro
Minnesota Pollution Control Agency
Minnkota Power Cooperative, Inc.
Montana Department of Environmental Quality

The Plains CO₂ Reduction (PCOR) Partnership, led by the Energy & Environmental Research Center (EERC) at the University of North Dakota, Grand Forks, ND, proposes a three-step approach that involves characterizing technical issues and the public's understanding regarding all aspects of CO₂ sequestration, identifying regional opportunities for sequestration, and detailing action plans to be carried out in Phase II of the Carbon Sequestration Regional Partnership solicitation. The region, which includes North and South Dakota, Minnesota, Wisconsin, Iowa, Missouri, Nebraska and portions of Montana, Wyoming, Saskatchewan, Manitoba, and Alberta, was chosen based on a similarity in large stationary CO₂ sources and geologic and terrestrial CO₂ sinks, transport considerations for direct CO₂ sequestration, and the presence of two major anthropogenic CO₂ enhanced oil recovery projects.

The region generates a little less than 5% of U.S. CO₂ emissions from 29 coal-fired utilities, 27 ethanol-production facilities, and the Dakota Gasification facility, which together account for about half of the region's CO₂ emissions. The region includes the Williston and Powder River basins. These basins have active or planned sequestration projects related to value added conventional oil or coal bed methane production, as well as recognized potential for sequestration in deep aquifers, depleted hydrocarbon production units, and unminable coal seams. The semiarid, rolling grasslands of the plains dominate the Western portion of the region. They are currently used for grazing and growing small grains. Together with the forested landscape of the Northeast and North, they offer opportunities for testing and verification of soil and vegetative terrestrial CO₂ sequestration technologies.



The PCOR Partnership will be utilizing a screen and funnel approach to determine the best opportunities for carbon sequestration in the region.

Primary Project Goal

The goal of this project is to develop and implement a partnership in the Northern Great Plains region that can identify cost effective CO₂ sequestration systems for the region and then facilitate and manage the testing of these technologies.

Objectives

- To assess CO₂ sources, sinks, technologies for CO₂ separation, and transportation options within the region.
- To evaluate options and potential opportunities for regional CO₂ sequestration.
- To develop action plans for the implementation of small-scale validation testing of the most promising technologies.
- To promote the implementation of technology for the capture, transport, and storage of anthropogenic fossil fuel combustion CO₂ emissions.
- To raise public awareness regarding carbon sequestration issues and to obtain public input.



The PCOR Partnership had its kickoff meeting on December 11 and 12, 2003. The PCOR Partnership currently has 42 active partners from a broad range of industry, academia, research organizations, federal institutions, and non-governmental organizations.

PARTNERS (cont.)

Montana Public Service Commission

Montana–Dakota Utilities Co

Natural Resources Trust

North Dakota Department of Health

North Dakota Geological Survey

North Dakota Industrial Commission Oil and Gas Division

North Dakota Petroleum Council

North Dakota State University

Otter Tail Power Company

Petroleum Technology Research Center

Petroleum Technology Transfer Council

Prairie Public Television

Sask Power

Saskatchewan Industry and Resources

Tesoro Refinery

U.S. Geological Survey-Northern Prairie Wildlife Research Center

Univ. North Dakota-Energy & Environmental Research Center (EERC)

University of Regina

Western Governors Association

Xcel Energy



Benefits

BUSINESS CONTACT

Sheryl E. Landis
701-777-5124
701-777-5181 fax
slandis@undeerc.org

TECHNICAL CONTACT

Edward Steadman
701-777-5181
esteadman@undeerc.org

BUSINESS OFFICE ADDRESS

15 North 23rd Street
Grand Forks, ND 58203

COST

Length of Contract
24 Months

Total Project Value
\$3,118,227

DOE/Non-DOE Share
\$2,455,164/\$663,063

Sequestration is one option to reduce CO₂ emissions and this project will benefit the U.S. by providing a comprehensive assessment of the sources and potential sinks for CO₂ in the Northern Great Plains Region. This data can be integrated with the data from other partnerships to provide a data base covering the entire nation. This effort will also provide information to evaluate potential pilot sequestration projects in the Northern Great Plains Region. The project will promote cooperation among stake holders and help ensure an informed public should CO₂ sequestration become an option. Analysis of existing EOR projects in the region will also provide valuable data to increase understanding of this option for CO₂ sequestration.