PROJECT facts

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

Sequestration

02/2004

BIG SKY CARBON SEQUESTRATION PARTNERSHIP

Background

The U.S. Department of Energy has selected the 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 156 organizations, spanning 40 states, three Indian nations, and two 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.

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PARTNERS

Montana State University

Boise State University

Confederated Salish and Kootenai Tribes

Environmental Financial Products

EnTech Strategies, LLC

Idaho National Engineering and Environmental Laboratory

Los Alamos National Laboratory

Montana Governor's Carbon Sequestration Working Group

National Carbon Offset Coalition

Nez Perce Tribe

South Dakota School of Mines and Technology

Texas A&M University

The Sampson Group

University of Idaho

Description

The Big Sky Carbon Sequestration Partnership (BSCSP), led by Montana State University, Bozeman, MT, will identify and catalogue CO_2 sources and promising geologic and terrestrial storage sites, develop a risk assessment and decision support framework to optimize the area's carbon storage portfolio, enhance market-based carbon storage methods, identify advanced greenhouse gas measurement technologies to improve verification, support voluntary trading and stimulate economic development, call upon community leaders to define carbon-sequestration strategies, and sponsor forums that involve the public. Idaho, Montana and South Dakota are served by this partnership that is comprised of 13 organizations, including the Confederated Salish and Kootenai Tribes and the Nez Perce Tribe.

The region has both industrial and agricultural greenhouse gas (CO_2, methane, and nitrous oxide) emissions from three major sources: fossil fuel power plants, industrial plants, including metals processing, chemical plants, and ethanol production facilities, and agricultural operations, principally feedlots.

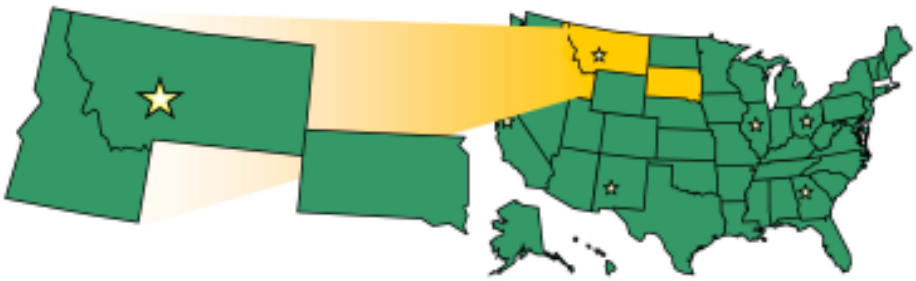
The region encompassed by the partnership includes three major geological terrains with high geologic sequestration potential: the Snake River Plain, the Williston Basin, and the Powder River and Associated Basins. The region contains large forested areas that have great potential to sequester carbon. Cropland and rangeland comprise a sizeable portion of the region and also possess considerable potential for carbon sequestration through improved land management practices. There are a number of abandoned mine sites that have the potential to be reclaimed/reforested to maximize carbon storage.

Primary Project Goal

The overall goal of this project is to identify the most cost effective, technically feasible, and publicly acceptable options for geologic and terrestrial carbon sequestration in the region. The goal in both sequestration options is to optimize the region's carbon storage portfolio, and to improve understanding of geological terrains and ecosystems to assess their long-term potential and effectiveness for storing carbon.

Objectives

- To identify and catalogue sources of CO_2 and promising geologic and terrestrial storage sites.
- To develop a risk assessment and decision support framework to optimize the region's carbon storage portfolio.
- To enhance market based, voluntary approaches to carbon storage.
- To identify and apply advanced greenhouse gas measurement technologies to improve verification protocols, support voluntary trading, and stimulate economic development.
- To engage community leaders to define carbon sequestration implementation strategies.
- To sponsor forums to inform stakeholders and secure input from the public.



Big Sky Regional Carbon Sequestration Partnership - (Region 6)

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COST

Length of Contract:
24 Months

Total Project Value:
$1,997,889

DOE/Non-DOE Share:
$1,598,279 / $399,610

Benefits

This project will benefit the U.S. by providing a comprehensive assessment of the sources and potential sinks for CO_2 in the Northern Rockies and Great Plains Region. This data can be integrated with the data from other partnerships to provide a database covering the entire nation. This effort will also provide information to evaluate potential pilot sequestration projects in the Northern Rockies and Great Plains Region. The project will promote cooperation among stakeholders and help ensure public acceptance of CO_2 sequestration, should that become necessary.