

PROJECT facts

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

Sequestration

07/2005



MIDWEST GEOLOGIC SEQUESTRATION CONSORTIUM (MGSC)

Background

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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.

Description

The Illinois Basin is home to one of the highest concentration of stationary sources of carbon dioxide including utilities, cement plants, and ethanol production facilities, which together emit in excess of 255 million tons of CO₂ annually. A targeted study on geologic sequestration issues that will meet regional needs in required. The Midwest Geological Sequestration Consortium (MGSC), headed by the University of Illinois — Illinois State Geological Survey, will look at ways of storing CO₂ within deep, uneconomic coal seams, numerous mature oil fields and saline reservoirs that lie beneath the 60,000 square mile Illinois Basin, which underlies most of Illinois, western Indiana and western Kentucky. The consortium will assess technical and economical options to determine the feasibility of using these geological sinks for long-term storage.

MGSC, led by the Illinois State Geologic Survey, combines the expertise of three state geologic surveys, two university researchers, six private corporations, five professional business association, and one interstate compact, two Illinois agencies, and two consultants to develop a Midwest solution to carbon capture, transportation and storage.



PARTNERS

Air Liquide
Ameren
Aventine Renewable Energy
Brigham Young University
Cinergy Corp.
Consultant
D.J. Nyman & Associates
Electric Power Research Institute (EPRI)
IL Dept of Commerce & Economic Opportunity
Illinois Corn Growers Association
Illinois Department of Natural Resources
Illinois Oil and Gas Association
Illinois State Geological Survey
Indiana Geological Survey, Indiana University
Indiana Oil & Gas Association
Interstate Oil and Gas Compact Commission (IOGCC)
Kentucky Geological Survey, University of Kentucky
Kentucky Oil & Gas Association
Louisville Gas and Electric Energy
LincolnLand Agri-Energy
Peabody Energy
Southern IL University

COST

Total Project Value
\$3,521,297

DOE/Non-DOE Share
\$1,782,385/\$1,738,912

CUSTOMER SERVICE

1-800-553-7681

WEBSITE

www.netl.doe.gov

Primary Project Goal

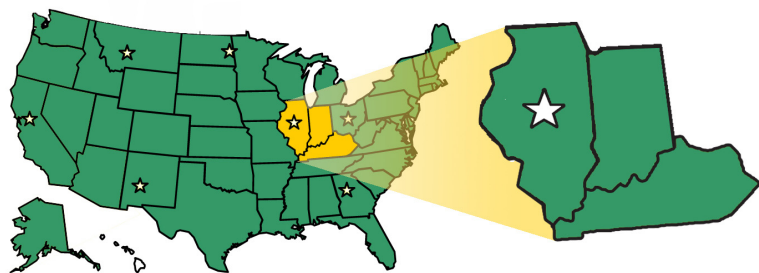
The goal of the project is a targeted, coherent study on geologic sequestration issues that will meet regional needs as well as contribute to a broader generic understanding of carbon sequestration in saline reservoirs, depleted oil reservoirs, and deep coal seams.

Objectives

- Developing a database and assessing CO₂ capture and transport in the region
- Focus on storage for 13-15 months for each of the three sinks
- Link integrated options for capture, storage and transportation with environmental and regulatory framework to define sequestration scenarios and outcomes for the region. At the end of two years, the partnership will have developed action plans for possible technology validation field tests involving CO₂ injection.

Benefits

While terrestrial sequestration options in the Midwest agricultural land is being addressed by a separate consortium, it is believed that geologic sequestration is the most appropriate in order to develop a balance portfolio of sequestration options in the high-emissions Illinois Basin region.



Midwest Geologic Sequestration Consortium - (Region 2)