

DOE Selects Projects to Assess Offshore Carbon Storage

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The Department of Energy's (DOE) National Energy Technology Laboratory (NETL) has selected four projects to receive funding through NETL's **Carbon Storage** program. The program is working to develop and advance the effectiveness of onshore and offshore carbon storage technologies, reduce the challenges associated with implementation, and prepare them for widespread commercial deployment in the 2025–2035 time frame.

The funded research projects will assess the prospective geologic storage potential of offshore subsurface depleted oil and natural gas reservoirs and saline formations on the East Coast and the Gulf of Mexico. These projects will use existing geologic and geophysical data to conduct a prospective storage resource assessment that will approximate the amount of carbon dioxide (CO₂) that can be safely stored.

The Carbon Storage program at NETL advances the development and validation of technologies that enable safe, cost-effective, permanent geologic storage of CO₂. The program also supports the development of best practices for commercial implementation of carbon capture and storage technologies. The technologies being developed and the small- and large-scale injection projects conducted through this program will benefit the existing and future fleet of fossil fuel power-generating facilities and other industrial CO₂ sources, including petroleum refineries and chemical manufacturing.

Project descriptions follow.

Mid-Atlantic U.S. Offshore Carbon Storage Resource Assessment Project

Battelle Memorial Institute (Columbus, OH) in partnership with the State Geological Surveys of Maryland, Delaware, and Pennsylvania; United States Geological Survey-Woods Hole Coastal and Marine Science Center; Rutgers University; Harvard University; Lamont-Doherty Earth Observatory at Columbia University; Texas Bureau of Economic Geology; and Virginia Department of Mines, Minerals, & Energy will develop a systematic carbon storage resource assessment of the offshore mid-Atlantic coastal region from the Georges Banks through the Long Island Platform to the southern Baltimore Canyon Trough. The study will define key input parameters and evaluate risk factors to reduce uncertainty for offshore resource assessment and efficiency estimates. The results of this work will provide high level storage resource assessments of mid-Atlantic areas not previously characterized and improve storage resource estimates for a geographically expansive offshore area.

Cost: DOE: \$3,771,817/Non DOE: \$1,054,009/Total Funding: \$4,825,826 (22% cost share)

Assessment of CO₂ Storage Resources in Depleted Oil and Gas Fields in the Ship Shoal Area, Gulf of Mexico

GeoMechanics Technologies (Monrovia, CA) will produce a detailed characterization of the Neogene delta sands from Ship Shoal field in the Gulf of Mexico for large scale CO₂ storage. The proposed research project will use 3D geologic modeling to predict the CO₂ storage capacity of the Ship Shoal area. The modeling approach will be used to validate and ensure 99% storage performance, ensuring containment effectiveness. Additionally, this research will analyze existing infrastructure of oil and gas for CO₂ transportation and recommend a transportation pipeline corridor.

Cost: DOE: \$1,034,605/Non DOE: \$258,651/Total Funding: \$1,293,256 (20% cost share)

Southeast Offshore Storage Resource Assessment

Southern States Energy Board (Norcross, GA) working in collaboration with Virginia Polytechnic Institute and State University, University of Virginia Center for Coal and Energy Research, University of South Carolina, Oklahoma State University, Virginia Department of Mines, Minerals, and Energy, South Carolina Geological Survey, Geological Survey of Alabama, Advanced Resources International, Inc., and Gerald R Hill, Ph.D., Inc. will assess prospective geologic storage resources for CO₂ in the state and federal waters of the Mid Atlantic, South Atlantic, and the eastern Gulf of Mexico. The goal of this project is to develop a high-level approximation of the amount of CO₂ that might be stored utilizing key geologic and environmental factors that influence the storage potential. Successful completion of this research will provide significant advances in knowledge and technology that can facilitate assessment and quantification of offshore CO₂ storage resources in these regions and provide a pathway toward commercialization.

Cost: DOE: \$3,944,618/Non DOE: \$1,037,041/Total Funding: \$4,981,659 (21% cost share)

Offshore CO₂ Storage Resource Assessment of the Northern Gulf of Mexico (Upper Texas-Western Louisiana Coastal Areas)

The University of Texas at Austin (Austin, TX) in partnership with Southern States Energy Board will study the inner continental shelf portions of the Texas and Louisiana Gulf of Mexico coastal areas in order to assess the CO₂ storage capacity of depleted oil and natural gas reservoirs. This work will also assess the ability of regional saline formations to safely and permanently store nationally-significant amounts of CO₂. The results of this work will improve the current understanding of CO₂ storage potential for a large area of the Gulf of Mexico adjacent to significant industrial emissions sources.

Cost: DOE: \$ 3,285,885/Non DOE: \$ 821,472/Total Funding: \$ 4,1