The greatest potential for carbon storage in the northeastern United States lies in the offshore geologic formations comprising the continental shelf. Offshore storage can be implemented close to large point-sources of carbon dioxide (CO₂) while avoiding many of the logistical difficulties and potential risks encountered when siting onshore projects, especially in densely populated areas of the East Coast. The technical, social and economic factors associated with offshore carbon storage have been discussed in literature. Recent assessments of domestic offshore CO₂ storage suggests a majority of the storage potential is in sandstone and carbonate saline reservoirs, with less potential in depleted oil fields and enhanced oil recovery projects (e.g., Gulf of Mexico), as oil and gas development is currently prohibited in ~87% of U.S. offshore federal water. Other potential storage formations, such as basalts, have not been comprehensively assessed, although they may become significant reservoir candidates in the Atlantic and Pacific.

Internationally, offshore CO₂ storage has been underway in Norway for the past 20 years and considerable research has been completed in countries including Japan, Australia, Brazil, and South Africa. Offshore CO₂ storage assessment and research in the United States is still in its infancy, with significant uncertainty in potential storage resources resulting from a lack of geologic/petrophysical data and other unconstrained variables, particularly in the mid- and north- Atlantic offshore area.

Given the current knowledge base and access to publicly available data, the objectives of the Mid-Atlantic U.S. Offshore Carbon Storage Resource Assessment Project are fourfold: 1) complete a systematic carbon storage resource assessment of the mid-Atlantic Offshore coastal region from the Georges Bank Basin through the Long Island Platform to the southern Baltimore Canyon Trough; 2) define key input parameters to reduce uncertainty for offshore storage resource and efficiency estimates; 3) perform a preliminary assessment of risk factors, uncertainties and data gaps; and 4) engage industry and regulatory stakeholders through development of a road map to assist future project planning and implementation.

Global estimates suggest that 40% of the potential CO₂ storage resource in deep saline aquifers is located offshore in widespread porous and permeable sandstones and shelf carbonates (IEAGHG, 2009).
This project will prepare a realistic portrayal related to offshore CO₂ storage resource assessment by:

- Defining the *geologic characteristics* of candidate storage sites
- Using existing *seismic data* to better define the continuity of the storage zone and seals
- Cataloguing the *hydrogeologic properties* of mid-Atlantic offshore storage sites
- Calculating *prospective CO₂ storage resources* using net effective pore volumes and fluid displacement properties specific to offshore lithologies
- Examining *risk factors* related to offshore storage
- *Communicating* with industry and other stakeholders about the future prospects for offshore storage
- Ensuring *technology transfer* to industry and other stakeholders

Led by Battelle, this project is being conducted by public and private entities with expertise in offshore geology and resources for the study region, including state geological surveys of Delaware, Maryland and Pennsylvania; United States Geological Survey-Woods Hole Coastal and Marine Science Center; Rutgers University; Harvard University; and Lamont-Doherty Earth Observatory at Columbia University. This project team provides the U.S. Department of Energy with multi-disciplinary expertise to complete storage resource assessment for a broad region offshore of the U.S. East Coast, from Massachusetts to Virginia. The team will build on the success of the Midwest Regional Carbon Sequestration Partnership program ([www.mrcsp.org](http://www.mrcsp.org)), using a regional approach for screening and identifying candidate offshore storage sites with the potential to deliver the most value for the East Coast. Anticipated outcomes are high-level storage resource assessments of areas not previously characterized and improved storage resource estimates for geographically expansive portions of offshore geologic units.

**Point of Contact**

Neeraj Gupta, Battelle Principal Investigator, [gupta@battelle.org](mailto:gupta@battelle.org).

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