

ACE 2016 Abstract

Theme 3: Energy and the Environment

Subtheme 4. Sequestration – Established Versus Emerging

TITLE: Southeast Offshore Storage Resource Assessment: Opportunities in the Eastern Gulf of Mexico for CO₂ Storage

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Subsurface geologic storage of CO₂ (i.e., sequestration) can play a major role in offsetting greenhouse gas emissions in a manner that is safe, economical, and acceptable to the public. While onshore resources have been quantified, no comprehensive assessment of the offshore storage resource in the southeastern United States has yet been performed. The Southeast Offshore Storage Resource Assessment (SOSRA) is designed to fill this gap in knowledge by assessing storage potential in the eastern Gulf of Mexico (EGOM) and along the southeastern seaboard. An estimated 40% of U.S. anthropogenic CO₂ emissions are generated in the southeast, and a large proportion of these emissions are generated within 100 km of the coastline.

A preliminary assessment of Miocene strata offshore of Alabama and Mississippi indicates that offshore storage capacity exceeds 200 Gt in these strata alone. Indeed, the EGOM region contains diverse opportunities for geologic storage. Strata deeper than 3,000 m are geopressured; therefore efforts are focusing on Cretaceous-Oligocene strata between 1,000 and 3,000 m. Salt basins in the northwest part of the study area contain large salt-tectonic structures hosting a broad array of storage prospects. The West Florida Shelf spans the southeastern part of the study. The shelf can be characterized as a broad carbonate bank and structurally simple compared to the salt basins. Phase I is underway and is providing an overview of the basic geologic framework of the SOSRA region, identifying potential storage units, and defining the key planning areas. Phase II, set to begin in April 2017, will include a robust characterization of offshore CO₂ storage reservoirs and seals, as well as a probabilistic assessment of storage capacity.