
An Offshore Carbon Repository in Miocene Strata under Texas State Waters, Gulf of Mexico Basin: Initial Results

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ABSTRACT

As the nation's leading CO₂ emitter from coal-fired utilities (>150 million metric tons, 2006) and a significant user of domestic coal for electricity generation (146 million MWh, 2006), Texas has a strong interest in developing effective CO₂ management options. CO₂ capture and storage (CCS) will be especially important for developing comprehensive and secure management options for emissions from existing and proposed fossil-fuel-fired electric power plants critical to the Texas and U.S. economies. Texas is well-positioned to support and benefit from an emerging subsurface CO₂ storage industry because it is blessed with vast, subsurface pore volumes in which to sequester CO₂, and it harbors the world-class workforce needed to provide the full spectrum of sequestration activities. We have initiated a regional evaluation and characterization of Miocene sequestration targets under submerged Texas State lands and will provide an initial update of work in progress. Our goals are to: (1) confirm the regional significance of this storage resource and constrain capacities and risks in support of near-term commercial development of this offshore carbon storage resource; (2) provide a ranked list of target stratigraphic intervals and associated prospective reservoirs that can accept at least 30 million metric tons of CO₂ from an existing or future source; (3) complete a detailed geologic characterization of one to four specific highly prospective reservoirs in areas most likely to receive carbon dioxide in the near-term; and (4) collect additional data necessary to confirm the utility of those specific offshore reservoirs in order to make them attractive for near-term commercial development.