

Critical Review of Oceanic and Geological Storage of Carbon Sequestration

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Abstract : CO₂ emissions in the atmosphere continue to rise, mostly as a result of the combustion of fossil fuels. CO₂ injection into the oceans and geological formation as a process of physical carbon capture are two of the most promising emerging strategies for mitigating climate change and global warming. The purpose of this research is to evaluate the two mentioned methods of CO₂ sequestration and to assess information on previous and current advancements, limitations, and uncertainties associated with carbon sequestration in order to identify possible prospects for ensuring the timely implementation of the technology, such as determining how governments and companies can gain a better understanding of CO₂ storage in terms of which media have the most applicable capacity, which type of injection has the fewer environmental impact, and how much carbon sequestration and storage will cost. The behavior of several forms is characterized as a near field, a far field, and a seefloor in ocean storage, and three medias in geological formations as an oil and gas reservoir, a saline aquifer, and a coal bed. To determine the capacity of various forms of media, an analysis of some models and practical experiments are necessary. Additionally, as a major component of sequestration, the various injection methods into diverse media and their monitoring are associated with a variety of environmental impacts and financial consequences.

Keywords : carbon sequestration, ocean storage, geologic storage, carbon transportation

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