

State-based developments in regulating CO₂ sequestration

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Abstract:

Escalating carbon dioxide (CO₂) concentrations in the atmosphere is an issue of global concern. Carbon capture and storage (CCS) projects can be used to substantially reduce CO₂ emissions to the atmosphere. Geologic sequestration enables fossil fuel to be decarbonized by capturing CO₂ emitted from stationary sources such as fossil fuel-fired power plants and injecting the gas (after compression to form a dense, supercritical fluid) into the subsurface in deep brine reservoirs for long-term storage. To date, however, little has been done to establish regulatory guidelines or operational standards that apply explicitly to geologic CO₂ sequestration in the United States.

Two key reasons for creating and implementing a rationale and effective regulatory framework for CCS projects are to (1) ensure public health and safety and (2) prevent environmental damage, particularly damage to underground sources of drinking water sources (USDWs). Additional issues include • addressing the concerns of local government and residents—any negative environmental consequences of geologic sequestration are likely to impact the local community; providing a mechanism for stakeholders and the public to have effective input into the both the initial permitting process and the integrity of subsequent regulatory oversight; supporting confidence of the market place for CO₂ sequestration credits by assuring transparency; creating a predictable and level playing field for companies involved in geological sequestration of CO₂; and ensuring the adequacy of long-term monitoring, mitigation, and remediation efforts.

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