Is Commercial-Scale CO2 Capture and Geologic Storage a Viable Enterprise for Kansas?

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ABSTRACT

Public demand for clean energy is growing and is likely to result in policies to reduce carbon dioxide emissions from fossil energy sources in the future. Commercial-scale carbon capture and storage (CCS) has been proposed as a possible route for the long-term viability of fossil energy sources, but capture and transportation of CO2 from coal-fired power plants is not economic under current conditions. Here we explore challenges and opportunities for commercial-scale CCS in Kansas. ICKan (Integrated CCS for Kansas) is U.S. Department of Energy (DOE) funded interdisciplinary collaborative study focused on identifying and addressing the major technical, economic, and public policy challenges of implementing CO2 capture and transport, and establishing secure geologic storage for CO2 in Kansas. The project team consists of several participating organizations, working in collaboration with regional partners from the utility, industrial refining, and oil and gas sectors. The study is examining three of Kansas' largest CO2 point sources and corresponding storage sites, each with an estimated 50+ million tons capacity, and a local transportation network to connect with nearby geologic storage. Major goals of the study are to: (1) perform geological characterizations of potential storage sites, including risk assessments augmented through the use of new models and tools developed by the DOEs NRAP (National Risk Assessment Partnership); (2) explore legal, regulatory, financial, and other nontechnical hurdles for commercial-scale CCS; and (3) develop an implementation plan that offers a strategy to initiate a viable path to CCS that will benefit the greater energy economy, while also reducing its carbon footprint.