

Capturing Lessons Learned in DOE's Best Practice Manuals

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The utilization of Carbon Capture and Storage (CCS) as a solution to mitigate increasing greenhouse gas volumes being emitted into the atmosphere has been studied over the last fourteen years by the United States Department of Energy (DOE). As the lead federal agency for the development and deployment of carbon-sequestration technologies, DOE through the Regional Carbon Sequestration Partnership (RCSP) Program is integrating their lessons-learned with the petroleum industry on many subject matters. Comparison of the petroleum industry to CO₂ geologic-storage industry yields both similarities and differences. Understanding the differences and utilizing lessons learned from the similarities will be beneficial to meet the demands and timeline for commercial storage.

DOE's mission includes facilitation of technology transfer and the development of best-practices guidelines. In order to accomplish this mission, a series of best-practice manuals for Carbon Capture and Storage (CCS) are being developed. These best-practice manuals are primarily based on the experiences gained through the RCSP Program, from the Characterization Phase through small-scale CO₂ injection tests in the Validation Phase, integrated with petroleum industry practices. However, they will also incorporate experience gained from ongoing programmatic efforts such as the National Carbon Sequestration Digital Atlas (NATCARB), the American Recovery and Reinvestment Act's (ARRA) Site Characterization Activity, and the North American Energy Working Groups NACAP Project.

Currently there are to be six best-practice manuals that will capture lessons learned in several subject areas critical for wide scale CCS deployment. These manuals will address topics such as Monitoring, Verification and Accounting (MVA), Site Characterization, Simulation and Risk Assessment, Well Drilling Construction and Closure, Regulatory Compliance, and Public Outreach and Education. The first edition of the two of the six best-practice manuals on MVA and Public Outreach have been released and are available on our website and the remaining four are to be completed later this year. Key to successful commercial deployment of geologic storage will be updating lessons learned as the CCS industry continues to evolve. For this reason, the DOE will update these initial best-practice manuals as more lessons are learned from the large-scale, greater than one million metric ton, injection projects over the next few years.