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A project important to demonstrating the commercial viability of carbon capture, utilization and storage (CCUS) technology has completed the first year of injecting carbon dioxide (CO2) from an industrial plant at a large-scale test site in Illinois.

Led by the Illinois State Geological Survey, the Illinois Basin–Decatur Project is the first demonstration-scale project in the United States to use CO2 from an industrial source and inject it into a saline reservoir. The CO2 is being captured from an ethanol production facility operated by the Archer Daniels Midland Company in Decatur, Ill., and is being injected in a compressed "supercritical" state into the Mount Simon Sandstone reservoir some 7,000 feet below the surface. Injection operations were initiated November 17, 2011, with an average injection rate of 1,000 metric tons (1,100 short tons) daily.

Analysis of data collected during the characterization phase of the project indicated the lower Mount Simon formation has the necessary geological characteristics to be a good injection target, a conclusion supported thus far by data accumulated from continuous monitoring of the site. The results from various monitoring activities – including tracking the underground CO2 plume; sensing subsurface disturbances; and continuous scrutiny of groundwater, shallow subsurface, land surface, and atmosphere around the injection site – show the Mount Simon Sandstone reservoir is performing as expected, with very good injectivity, excellent storage capacity, and no significant adverse environmental issues.

Nearing the 1-year mark, 317,000 metric tons of CO2 have been injected, about one third of the planned 1 million metric ton injection volume. The demonstration-scale project provides the opportunity to test how a real-world injection operation will perform where brief interruptions—such as planned maintenance of the compression equipment and conducting of various well tests, as required by regulations—will occur.

Successfully testing and demonstrating CCUS technologies under real-world conditions is an important step toward eventual commercial deployment of the technology as an option in helping mitigate atmospheric carbon dioxide emissions.

The technologies applied and lessons learned from this project will also support industry in the region looking to develop CO2 capture and transport infrastructure, whether it is for carbon storage or enhanced oil recovery in the depleted oilfields in the Illinois Basin.

The Office of Fossil Energy's National Energy Technology Laboratory (NETL) manages the Regional Carbon Sequestration Partnership program.

Electricity Pricing – Nov 20, 2012

	On-Peak	Off-Peak
2012	\$.03792	\$.02724
2013	\$.04120	\$.02672
2014	\$.04217	\$.02731

LMP Electric Price

Time Period	Average per Kwh
Nov, 2011	\$.02816
Dec, 2011	\$.02971
Jan, 2012	\$.03043
Feb, 2012	\$.02963
Mar, 2012	\$.02894
April, 2012	\$.02659
May, 2012	\$.02816
June, 2012	\$.03089
July, 2012	\$.04303
Aug, 2012	\$.03112
Sep, 2012	\$.03034
Oct, 2012	\$.02829
Nov 1 – Nov 19	\$.03444

Extended Temperature Forecast:

Chicago Area

	Tue	Wed	Thu	Fri	Sat
High	55	58	61	40	36
Low	41	43	37	26	28

