CLEAN COAL DEMONSTRATION & COMMERCIAL PROJECT

Status UPDATE OF U.S. Department of energy Major FOSSIL ENERGY CARBON CAPTURE & GEOLOGIC STORAGE DEMONSTRATION PROJECTS In OPERATION and Lessons Learned

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Abstract:

This summary presentation will provide an overview of the U.S. Department of Energy's (DOE) major carbon capture and geologic storage demonstration projects in operation, which carry a total estimated cost of approximately $1.64 billion, including U.S. DOE's cost-share of approximately $0.62 billion (11%). Emphasis will also be on the lessons learned from the following major demonstration projects:

- Air Products & Chemicals Inc. (APCI) Steam Methane Reforming with CO_2 Capture project at a Valero oil refinery in Port Arthur, Texas. Total estimated cost: $431 million; DOE share: $284 million (66%). Operations started in December 2012; APCI captured and sent for storage the 5.08 millionth metric ton of contained CO_2 from their hydrogen production facility in December 2018. The project ended in September 2017, but the fact that more than 5 million metric tons have been captured and sent for storage is indication that the project has successfully continued beyond the DOE demonstration period.

- Archer Daniels Midland (ADM) "CO_2 Capture from Biofuels Production and Storage into the Mt. Simon Sandstone in Decatur, Illinois. Total estimated cost: $208 million; DOE share: $141 million (68%). Operations started in April 2017. As of December 2018, the cumulative amount of injection into the Mount Simon Sandstone saline reservoir is 1.03 million metric tons of CO_2 since the beginning of operations.

- Petra Nova's Advanced Post-Combustion CO_2 Capture Project at NRG's W.A. Parish power plant in Thompsons, Texas. Total estimated cost: $1 billion; DOE share: $190 million (19%). Operations started in January 2017. As of December 2018, Petra Nova has captured and sent for storage 2.40 million short (US) tons of CO_2.