

Department of Energy Announces New Recovery Act Funding to Boost Industrial Carbon Capture Storage and Development.

The US Department of Energy has announced today the selection of 22 projects that will accelerate carbon capture storage, research, and development. The projects are funded with \$575 million from the American Recovery and Reinvestment Act.

Key projects include

Air Products & Chemicals, Inc. (Allentown, PA) - Development of Ion Transport Membranes (ITM) Oxygen Technology for Integration with Advanced Industrial Systems

Air Products will accelerate commercial manufacture of ion transport membranes modules and initiate the development of a 2,000 tons per day (TPD) pre-commercial scale facility ahead of schedule, enabling this technology to enter the marketplace at least two years earlier than previously projected. The ITM technology will produce oxygen at higher efficiencies and at lower capital and operating costs than state-of-the-art cryogenic oxygen production systems, benefiting domestic oxygen-intensive industrial processes in terms of cost, efficiency, and productivity improvements, such as those involved in the making of aluminum, glass, and steel via the use of this advanced technology. Successful development of ITM will also lower the cost of oxy-combustion configurations, enabling lower cost CO₂ capture. This project will receive \$71.7 million in funding.

Ramgen Power Systems (Bellevue, WA) - Ramgen Supersonic Shock Wave Compression and Engine Technology

This additional project expansion will focus on incorporating the supersonic compression technology into an engine. By following a dual track development on the compressor for applications of CO₂ compression only and incorporation into an engine that can run with oxygen and fuel, producing a high concentration of CO₂ for subsequent supersonic compression, the technology risk is greatly reduced leading to a higher potential of success for the base compressor design and its ability to be used in industrial CCS applications. Thus, this project will demonstrate the compression technology in an engine versus a conventional CO₂ compression process. Because this technology has more than one purpose, we are able to gain valuable knowledge about scaling up this compression technology. This project will receive \$30 million in funding.

Membrane Technology and Research, Inc. (Menlo Park, CA) - Pilot Testing of a Membrane System for Post-Combustion CO₂ Capture

Membrane Technology and Research (MTR) and partners will demonstrate a membrane process to separate CO₂ from industrial- and utility-scale processes including boilers, cement manufacturing, steel and aluminum production and chemical refining. MTR will design, construct and test a 1 MWe equivalent gas flow membrane skid capable of 90 percent CO₂ capture from a slipstream of coal-fired flue gas. A six-month field test using the test skid will be conducted at Arizona Public Service's (APS) Cholla Power Plant. Additionally, a small slipstream test will be performed at the National Carbon Capture Center to validate membrane performance. This project will provide sufficient performance data to allow a thorough technical and economic evaluation of the membrane capture process and will verify the relative potential of this approach. This project will receive \$15 million in funding.

University of Texas at Austin (Austin, TX) - Gulf of Mexico Miocene CO₂ Site Characterization Mega Transect

The University of Texas at Austin will conduct a regional evaluation of storage opportunities in Miocene aged formations with a focus on specific reservoirs once identified. The project will lease currently available regional 3D seismic data and acquire a new seismic acquisition system (P-Cable) that is optimized for ultra-high resolution 3D and 4D seismic imaging of shallow and mid-range depths to allow detection of shallow structural features. Both types of data will help to develop baseline assessments of the

target formations to measure and monitor their characteristics and validate them for future industrial CCS injection operations. This project will receive \$5 million in funding.

For more information, please visit: <http://www.energy.gov/9455.htm>