MIL-OSI USA: U.S. Department of Energy Announces $4M for Projects to Collaborate Internationally and Accelerate CCUS Technologies

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The U.S. Department of Energy's (DOE) Office of Fossil Energy (FE) has announced $4 million in federal funding for national laboratories to collaborate with international partners on seven projects out of the 12 that were selected as a part of the Accelerating Carbon Capture and Storage Technologies (ACT) Initiative. The ACT Initiative is a consortium of ten European countries—France, Germany, Greece, the Netherlands, Norway, Romania, Spain, Switzerland, Turkey, the United Kingdom—and the United States.

Together, DOE and the ACT Initiative are funding researchers in each of the participating countries to collaborate on projects that will accelerate and mature carbon capture, utilization, and storage (CCUS) technologies around the world. DOE's participation in the ACT Initiative represents its commitment to advance the development of CCUS technologies through its work with international partners to leverage their combined resources, knowledge, skills, and capabilities.

The 12 selected projects have a total value of nearly $49 million, with the ACT consortium members contributing $35 million of this total. The seven projects with U.S. involvement and funding include three carbon capture projects and four carbon storage projects.

Descriptions of the seven selected U.S. projects are listed below:

Carbon Capture Projects:

1. Lowering Absorption Process Uncertainty, Risks, and Costs by Predicting and Controlling Amine Degradation (LAUNCH) - Los Alamos National Laboratory (LANL) and its subcontractor, the University of Texas at Austin, will work with their partners to establish a fast-track, cost-effective, de-risking mechanism to predict and control degradation of carbon capture solvents. This will help resolve one of the main drawbacks of chemical solvent capture systems that leads to increased costs.

DOE Funding: $1,000,000; Non-DOE funding: $7,118,460; Total Value: $8,118,460

2. Innovative Membrane Systems for CO2 Capture and Storage at Sea (MemCCSea) - In this project, the National Energy Technology Laboratory is collaborating on the development of hyper compact membrane systems for maritime and offshore applications. The project team will conduct lab- and pilot-scale tests to optimize and evaluate novel ceramic and mixed membrane systems.

DOE Funding: $500,000; Non-DOE funding: $1,656,354; Total Value: $2,156,354

3. Process-Informed Design of Tailor-Made Sorbent Materials for Energy Efficient Carbon Capture (PrISMa) - Lawrence Berkeley National Laboratory is partnering on a project that helps to bridge the gap between molecular science and process engineering by developing tailor-made materials for a wide range of carbon capture applications. By coupling these disciplines, the project hopes to bridge the gap that can move promising sorbent materials beyond the lab.

DOE Funding: $501,000; Non-DOE funding: $2,724,551; Total Value: $3,225,551

Carbon Storage Projects:

1. Digital Monitoring of CO2 Storage Projects (DigiMon) - Lawrence Livermore National Laboratory (LLNL) is collaborating on a project to integrate a broad range of monitoring technologies with data analytics to improve system cost and reliability for carbon storage projects.

DOE Funding: $514,000; Non-DOE funding: $6,727,333; Total Value: $7,241,333

2. Re-Using Existing Wells for CO2 Storage Operations (REX-CO2) - In this project, LANL will work with its project partners to develop a procedure and tools for evaluating the re-use potential of existing hydrocarbon wells for carbon dioxide (CO2) storage. Re-use of existing wells, particularly in offshore environments, can potentially minimize well development costs for CO2 storage projects.

DOE Funding: $500,000; Non-DOE funding: $3,448,544; Total Value: $3,948,544

3. Assuring Integrity of CO2 Storage Sites Through Ground Surface Monitoring (SENSE) - LLNL and its project partners will demonstrate how ground surface movement detection—combined with geomechanical modeling, inversion, and data analytics—can be used to provide information on pressure distribution and hydraulic behavior of storage sites. This project will result in improved reliability and lower costs of carbon storage sites.

DOE Funding: $487,000; Non-DOE funding: $4,587,612; Total Value: $5,074,612

4. ACT on Offshore Monitoring (ACTOM) - LANL and its subcontractor, the University of Texas Bureau of Economic Geology, are a part of a team that will build a web-based toolkit that will, for the first time, collect algorithms for designing optimal monitoring programs for offshore geologic storage sites.

DOE Funding: $500,000; Non-DOE funding: $1,775,063; Total Value: $2,275,063

The Office of Fossil Energy funds research and development projects to reduce the risk and cost of advanced fossil energy technologies and further the sustainable use of the Nation’s fossil resources. To learn more about the programs within the Office of Fossil Energy, visit the Office of Fossil Energy website or sign up for FE news announcements. More information on the ACT Initiative is available here.

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