The U.S. Department of Energy (DOE) selected 29 projects to receive nearly $7.6 million in federal funding for cost-shared research and development. The projects will advance energy storage technologies under the Funding Opportunity Announcement (FOA) DE-FOA-0002332, *Energy Storage for Fossil Power Generation*.

Energy storage combined with fossil energy assets offers a suite of benefits to asset owners, the electric grid, and society. These benefits include more reliable and affordable energy, a cleaner environment, and stronger power infrastructure. These projects will accelerate the development of technology options to manage the energy transition underway to decarbonize and increase the flexibility of fossil power generation and support the grid of the future with increasing variable renewable generation.

The selected projects include thermal, chemical, mechanical, and other innovative energy storage technologies integrated with a range of fossil assets. Sixteen of the projects will focus on hydrogen and ammonia, which are key low-carbon energy carriers with the potential to enable long-duration energy storage and decarbonize the industrial and power generation sectors.

Approximately half of the hydrogen projects include subsurface hydrogen storage in salt caverns, although one includes sedimentary geologic storage. The other half of these selected hydrogen projects focus on large capacity, above-ground hydrogen storage to be integrated with a fossil asset. Nine projects will focus on thermal energy storage, including mature options such as molten salt that can offer near-term deployment opportunities, and innovative approaches (for example, using low-cost natural materials such as pebbles or sand to store thermal energy). Storage capacities for the projects are targeted to exceed 10 MWh with many, if not all, exceeding four hours in duration.

Energy storage technologies will be integrated with a range of fossil assets, including coal power plants, natural gas combined cycles, and combustion turbines. Applications include power generation utilities, petrochemical complexes, microgrids, university campuses, and repowering retired coal power plants. Many of the applications are envisioned to include fuel switching (hydrogen or ammonia) or carbon capture and storage to mitigate carbon emissions and leverage the energy storage technology to increase flexibility, reduce cycling damage, and time-shift energy to enhance grid support and asset utilization.

The selected projects will support FE’s Energy Storage program to (1) advance near-term, system-integrated, energy storage solutions toward commercial deployment with fossil assets; (2) mature promising mid-technology-readiness-level (TRL), component-level energy storage solutions toward eventual system integration with fossil assets; (3) develop innovative, low-TRL concepts and technologies that offer game-changing benefits for fossil assets.

Anticipated host sites for the near-term projects will be distributed across at least 11 states and operate in many of the major regulated markets. These markets include the California Independent System Operator, Midcontinent Independent System Operator, Southwest Power Pool Inc., Electric

Reliability Council of Texas, and New York Independent System Operator.

This program is consistent with DOE's Energy Storage Grand Challenge, which seeks to position the United States as a world leader in energy storage.

The National Energy Technology Laboratory (NETL) will manage the projects, which were selected from three areas of interest (AOI) within the FOA.

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 about the National Energy Technology Laboratory is available on the NETL website.

Source: **DOE Invests Nearly $7.6 Million to Develop Energy Storage Projects**