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The Department of Energy (DOE) has awarded \$4 million to 4 research and development (R&D) projects at the Lawrence Livermore National Laboratory in California, the Pacific Northwest National Laboratory Washington, the University of Utah, and the University of Wyoming. The 4 projects will cover subtopics related to bioengineered microbes, magnetic nanofluids, and resource assessment, with the overall goal of assessing the amount of critical materials, such as rare earth minerals, that can be recovered from energy extraction fluids, and particularly from geothermal fluids.

Critical materials and minerals play a vital role in many clean energy technologies, such as the production of solar-voltaic cells, electric vehicles, and wind turbines. Rare earths are also critical to many defense activities.

This research is part of DOE's efforts to secure supplies of critical materials, identify substitutes, and develop recycling procedures for the materials. These projects may enhance current applications of geothermal energy and support the development of geothermal projects.

Sources: The Department of Energy (DOE) Office of Energy Efficiency and Renewable Energy (EERE)
