



U.S. Department of Energy

Categorical Exclusion Determination Form

Proposed Action Title: The University of Texas at Austin -- Improving the Energy Recovery Rate in Enhanced Geothermal Systems

Program or Field Office: Advanced Research Projects Agency - Energy

Location(s) (City/County/State): Austin, Bellville, and Houston, Texas; Milford, Utah

Proposed Action Description:

AMENDED NEPA DETERMINATION: (See attached original Determination, dated September 22, 2025). This Amended Determination follows the addition of new project milestones, teaming partners, and project locations to support the project team's small-scale research and development activities of a high-temperature sliding sleeve to increase energy recovery in enhanced geothermal systems (EGS) by 200% to 500% by increasing the contact area between the connected fracture system and the reservoir rock matrix. Specifically, the project team will (1) design, develop, validate, and finalize sleeve based on well site characteristics; (2) gather site specifications for well fracture development and operations; (3) finalize sleeve design, manufacture sliding sleeves and associated components; (4) test and validate sliding sleeve assemblies above ground; (5) finalize well fracture operation using on-site data; (6) install sliding sleeves and diagnostic data collection system at well site and test and validate to meet system requirements prior to operation; (7) conduct test fracture operations and collect diagnostic data to analyze system operations and validate results; and (8) compare system results with standard geothermal fracturing practices to ensure project outcomes meet performance metrics. If successful, this project will result in a technology capable of creating optimal fracture networks, enhancing operational efficiency and energy recovery in EGS, and ultimately reduce dependence on foreign energy sources, thereby increasing U.S. energy security.

Project activities will be conducted at existing facilities at the The University of Texas at Austin (Austin, TX), Neubrex Energy US (Bellville, TX), NCS Multistage (Houston, TX), and Shell International E & P (Houston, TX and Milford, UT) with field testing at University of Utah FORGE (Milford, UT) designed for the applicable activities. This project fits within the class of actions identified under the DOE Categorical Exclusions identified below. This assessment was based on a review of the proposed scope of work and the potential environmental impacts of the project. The project team has certified that project tasks will be conducted in accordance with established safety and materials/waste management protocols and pursuant to applicable Federal, State, and local regulatory requirements.

Categorical Exclusion(s) Applied:

B3.6 - Small-scale research and development, laboratory operations, and pilot projects

B3.11 – Outdoor tests and experiments on materials and equipment components

For the DOE procedures regarding categorical exclusions, including the full text of each categorical exclusion, see 10 CFR 1021.102 and Appendix B to [10 CFR Part 1021](#), and also Section 5.4 (Applying one or more categorical exclusions to a proposal) and Appendices B and C of [DOE's National Environmental Policy Act Implementing Procedures](#) (June 30, 2025).

Requirements and guidance in 10 CFR 1021.102 and DOE's NEPA Implementing Procedures: (See full text in regulation and in Implementing Procedures)

- ☒ The proposal fits within a class of actions that is listed in Appendix B to 10 CFR Part 1021 or Appendix B and C of DOE's NEPA Implementing Procedures (June 30, 2025).
To fit within the classes of actions listed in Appendix B to 10 CFR Part 1021, or Appendix B of DOE's NEPA Implementing Procedures, a proposal must satisfy the conditions that are integral elements of the classes of actions in Appendix B of both 10 CFR Part 1021 and DOE's NEPA Implementing Procedures.
- ☒ There are no extraordinary circumstances related to the proposal that may affect the significance of the environmental effects of the proposal. DOE or an applicant may modify the proposal to avoid reasonably foreseeable adverse significant effects such that the categorical exclusion would apply.
- ☒ The proposal has not been segmented to meet the definition of a categorical exclusion.

[Note: For proposals that fit within the categorical exclusions listed in Appendix C of DOE's NEPA Implementing Procedures, see DOE's notice of adoption for the subject Appendix C categorical exclusion for additional considerations. DOE notices of adoption for other agency categorical exclusions may be found on [DOE's Section 109 webpage](#).]

Based on my review of the proposed action, as NEPA Compliance Officer, I have determined that the proposed action fits within the specified class(es) of action, the other requirements and guidance set forth above are met, and the proposed action is hereby categorically excluded from further NEPA review.

NEPA Compliance Officer: **GEOFFREY
GOODE**

Digitally signed by GEOFFREY
GOODE
Date: 2026.10.16 05:44:34 -04'00'

Date Determined: