

**U.S. DEPARTMENT OF ENERGY
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
NEPA DETERMINATION**



RECIPIENT: Geothermix, LLC

STATE: TX

PROJECT TITLE : Thermoelectric Power Generation from Hot Oilfield Fluids: A Field Demonstration in the Austin Chalk in Texas

Notice of Funding Opportunity Number
DE-FOA-0002525

Procurement Instrument Number
DE-EE0009964

NEPA Control Number
GFO-0009964-002

CID Number
GO9964

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Policy 451.1), I have made the following determination:

CX, EA, EIS APPENDIX AND NUMBER:

Description:

B1.31 Installation or relocation of machinery and equipment

Installation or relocation and operation of machinery and equipment (including, but not limited to, laboratory equipment, electronic hardware, manufacturing machinery, maintenance equipment, and health and safety equipment), provided that uses of the installed or relocated items are consistent with the general missions of the receiving structure. Covered actions include modifications to an existing building, within or contiguous to a previously disturbed or developed area, that are necessary for equipment installation and relocation. Such modifications would not appreciably increase the footprint or height of the existing building or have the potential to cause significant changes to the type and magnitude of environmental impacts.

B5.1 Actions to conserve energy or water

(a) Actions to conserve energy or water, demonstrate potential energy or water conservation, and promote energy efficiency that would not have the potential to cause significant changes in the indoor or outdoor concentrations of potentially harmful substances. These actions may involve financial and technical assistance to individuals (such as builders, owners, consultants, manufacturers, and designers), organizations (such as utilities), and governments (such as state, local, and tribal). Covered actions include, but are not limited to weatherization (such as insulation and replacing windows and doors); programmed lowering of thermostat settings; placement of timers on hot water heaters; installation or replacement of energy efficient lighting, low-flow plumbing fixtures (such as faucets, toilets, and showerheads), heating, ventilation, and air conditioning systems, and appliances; installation of drip-irrigation systems; improvements in generator efficiency and appliance efficiency ratings; efficiency improvements for vehicles and transportation (such as fleet changeout); transportation management systems (such as traffic signal control systems, car navigation, speed cameras, and automatic plate number recognition); development of energy-efficient manufacturing, industrial, or building practices; and small-scale energy efficiency and conservation research and development and small-scale pilot projects. Covered actions include building renovations or new structures, provided that they occur in a previously disturbed or developed area. Covered actions could involve commercial, residential, agricultural, academic, institutional, or industrial sectors. Covered actions do not include rulemakings, standard-settings, or proposed DOE legislation, except for those actions listed in B5.1(b) of this appendix.

(b) Covered actions include rulemakings that establish energy conservation standards for consumer products and industrial equipment, provided that the actions would not:

1. Have the potential to cause a significant change in manufacturing infrastructure (such as construction of new manufacturing plants with considerable associated ground disturbance);
2. Involve significant unresolved conflicts concerning alternative uses of available resources (such as rare or limited raw materials);

3. have the potential to result in a significant increase in the disposal of materials posing significant risks to human health and the environment (such as RCRA hazardous wastes); or
4. have the potential to cause a significant increase in energy consumption in a state or region.

B5.2 Modifications to pumps and piping

Modifications to existing pump and piping configurations (including, but not limited to, manifolds, metering systems, and other instrumentation on such configurations conveying materials such as air, brine, carbon dioxide, geothermal system fluids, hydrogen gas, natural gas, nitrogen gas, oil, produced water, steam, and water). Covered modifications would not have the potential to cause significant changes to design process flow rates or permitted air emissions.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to Geothermix, LLC, for the installation, operation, and subsequent removal of a thermoelectric power generation (TEG) unit. The unit would utilize excess heat from natural gas produced at an existing gas well to generate electricity.

DOE previously completed a NEPA Determination (ND) for the installation and testing of a similar unit at an oil field near Woodville, TX (GFO-0009964-001: exclusions A9, B5.2, B5.15, signed 6/2/2022). Project activities are being proposed at a new location, which is the subject of this ND.

The TEG would be installed on skids at Devon Energy's Hansen A well pad in Dewitt County, Texas (29.236584, -97.383970). Installed components would consist of the TEG, a heat exchanger, piping, circulation pumps, and electrical connections, and would be connected to existing well infrastructure. Piping would include both a glycol loop and a cooling loop, the latter using water from either frac tanks or a nearby frac pond to maintain desired temperatures. The system would be continuously monitored and maintained during operation. At the conclusion of the project, the system and all associated equipment would be removed, and the site restored to its previous condition.

All activities would occur on previously disturbed ground. Ground disturbance would be limited to minor leveling of the surface of the well pad where the TEG would be placed, as well as the possible installation of supports. The National Register of Historic Places indicates that the nearest historic structure is located in Cuero, TX, approximately 12 miles away. Project activities would not result in visual or other indirect impacts to these historic structures or places.

Minimal air emissions may result from the use of equipment during system installation. However, significant air impacts are not anticipated since emissions would be temporary and intermittent. No tree cutting or trimming would occur. Neither floodplains nor wetlands occur in the proposed project area.

The United States Fish and Wildlife Service Information for Planning and Consultation website identifies seven species of concern (Tricolored Bat, Piping Plover, Rufa Red Knot, Whooping Crane, False Spike, Guadalupe Orb, and Monarch Butterfly) which may occur in the proposed project area. There is no critical habitat in the project area. Project work would occur in a disturbed area with ongoing human activity where these species are unlikely to be present. DOE has determined no effect on special status species, nor on critical habitat.

All necessary permits would be obtained prior to commencing activities. Potential hazards include typical hazards associated with construction, electrical, and mechanical work. Award recipients would adhere to established health and safety policies and procedures when performing project work, and would observe all applicable federal, state, and local health, safety, and environmental regulations.

DOE has considered the scale, duration, and nature of proposed activities to determine potential impacts on resources, including those of an ecological, historical, cultural, and socioeconomic nature. DOE does not anticipate impacts on these resources which would be considered significant or require DOE to consult with other agencies or stakeholders.

NEPA PROVISION

DOE has made a final NEPA determination.

Notes:

Geothermal Technologies Office
NEPA review completed by Andrew McClellan, 9 April 2026

FOR CATEGORICAL EXCLUSION DETERMINATIONS

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 10CFR 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 proposed action that may affect the significance of the environmental effects of the proposal.

The proposed action has not been segmented to meet the definition of a categorical exclusion.

The proposed action is categorically excluded from further NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:  **Electronically Signed By: Nicole Serio** Date: 4/10/2026
NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

- Field Office Manager review not required
- Field Office Manager review required

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____ Date: _____
Field Office Manager