

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



RECIPIENT: Institute of Gas Technology

STATE: VT

PROJECT TITLE: Coalition For Community-Supported Affordable Geothermal Energy Systems (C2SAGES)

Notice of Funding Opportunity Number
DE-FOA-0002632

Procurement Instrument Number
DE-EE0010669

NEPA Control Number
GFO-0010669-002

CID Number
GO10669

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:

A9 Information gathering, analysis, and dissemination	Information gathering (including, but not limited to, literature surveys, inventories, site visits, and audits), data analysis (including, but not limited to, computer modeling), document preparation (including, but not limited to, conceptual design, feasibility studies, and analytical energy supply and demand studies), and information dissemination (including, but not limited to, document publication and distribution, and classroom training and informational programs), but not including site characterization or environmental monitoring. (See also B3.1 of appendix B to this subpart.)
B3.6 Small-scale research and development, laboratory operations, and pilot projects	Siting, construction, modification, operation, and decommissioning of facilities for smallscale research and development projects; conventional laboratory operations (such as preparation of chemical standards and sample analysis); and small-scale pilot projects (generally less than 2 years) frequently conducted to verify a concept before demonstration actions, provided that construction or modification would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible). Not included in this category are demonstration actions, meaning actions that are undertaken at a scale to show whether a technology would be viable on a larger scale and suitable for commercial deployment.
B5.19 Ground source heat pumps	The installation, modification, operation, and removal of commercially available smallscale ground source heat pumps to support operations in single facilities (such as a school or community center) or contiguous facilities (such as an office complex) (1) only where (a) major associated activities (such as drilling and discharge) are regulated, and (b) appropriate leakage and contaminant control measures would be in place (including for cross-contamination between aquifers); (2) that would not have the potential to cause significant changes in subsurface temperature; and (3) would be located within a previously disturbed or developed area. Covered actions would be in accordance with applicable requirements (such as local land use and zoning requirements) in the proposed project area and would incorporate appropriate control technologies and best management practices.
B5.5 Short pipeline segments	Construction and subsequent operation of short (generally less than 20 miles in length) pipeline segments conveying materials (such as air, brine, carbon dioxide, geothermal system fluids, hydrogen gas, natural gas, nitrogen gas, oil, produced water, steam, and water) between existing source facilities and existing receiving facilities (such as facilities for use, reuse, transportation, storage, and refining), provided that the pipeline segments are within previously disturbed or developed rights-of-way.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to The Institute of Gas Technology (GTI) for deployment and installation of a closed-loop community geothermal system for a residential development.

This project (award number DE-EE0010670) received a Conditional NEPA determination (GFO-0010669-001; A9 and B3.1) on July 19, 2023. The previous ND included planning and design of the geothermal system (Budget Period (BP) 1). The previous ND did not apply to deployment and installation (BP2). This ND applies to BP2 which would include the deployment and installation of the geothermal system.

The proposed project was selected under the first phase of DOE's Community Geothermal Heating and Cooling Design and Deployment Funding Opportunity Announcement (DE-FOA-0002632), during which awardees are to design their systems, finalize project sites and use, assess the geothermal resource, analyze environmental and permitting needs, conduct feasibility analysis and local engagement, and identify workforce and training needs. This proposal was selected to advance in the competitive down-selection process.

Deployment and installation of the geothermal system would be installed at the new residential Windy Ridge

development in Hinesburg, VT. BP2 activities would include drilling 15 vertical closed-loop boreholes 195 meters deep, grouting of boreholes, installing U-bend piping, connection of piping between boreholes, installation of piping run to a pump house, installation of piping from the pump house to homes and buildings, installation of 82 water-to-air heat pumps in 44 homes and buildings, and connection and deployment of the systems. Award activities include installation of the geothermal system in Phase 1 of the design, Phase 2 would not be funded through this award.

Although, this project is planned at an undisturbed parcel of land, the Windy Ridge housing development would be constructed with or without the geothermal system. The Windy Ridge housing development would not be funded by this award. Installation of the geothermal system would not cause any additional disturbance to the Windy Ridge development plan. Project activities would be conducted in accordance with industry standards for the protection of underground water sources and would comply with all state and local permitting.

Archaeological Phase I surveys were conducted at the development site, no cultural resources were found. DOE will require the following as part of best management practices for the project: If during project activities the recipient or their contractors encounter any cultural materials (i.e. historic or prehistoric), all activities must cease in the vicinity of the discovery immediately. The recipient must inform the DOE Project Officer of the discovery so that an evaluation of the discovery can be completed prior to continuing work.

DOE has considered the scale, duration, and nature of the proposed activities to determine potential impacts on sensitive resources, including those of an ecological, historical, cultural, and socioeconomic nature. DOE found no effects would be expected as a result of the proposed project activities.

EERE is aware of the November 12, 2024, decision in *Marin Audubon Society v. FAA*, No. 23-1067 (D.C. Cir. Nov. 12, 2024). To the extent that a court may conclude that the Council on Environmental Quality (CEQ) regulations implementing NEPA are not judicially enforceable or binding on this agency action, EERE has nonetheless elected to follow those regulations at 40 C.F.R. Parts 1500-1508, in addition to DOE's procedures/regulations implementing NEPA at 10 C.F.R. Part 1021, to meet the agency's obligations under NEPA, 42 U.S.C. §§ 4321 et seq.

NEPA PROVISION

DOE has made a final NEPA determination.

Include the following condition in the financial assistance agreement:

1. If during project activities the recipient or their contractors encounter any cultural materials (i.e. historic or prehistoric), all activities must cease in the vicinity of the discovery immediately. The recipient must inform the DOE Project Officer of the discovery so that an evaluation of the discovery can be completed prior to continuing work.

Notes:

Geothermal Technologies Office

This NEPA determination requires legal review of the tailored NEPA provision.

NEPA review completed by Dustin Hill, 1/17/2024

FOR CATEGORICAL EXCLUSION DETERMINATIONS

The proposed action (or the part of the proposal defined in the Rationale above) fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D. To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10 CFR Part 1021, Subpart D, Appendix B.

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. This proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

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: Matthew Blevins** Date: **2/21/2025**
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