

PMC-ND
(1.08.09.13)

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



RECIPIENT: University of Hawaii

STATE: HI

PROJECT TITLE : Comprehensive analysis of Hawaii's geothermal potential through Play Fairway

| Funding Opportunity Announcement Number | Procurement Instrument Number | NEPA Control Number | CID Number |
|---|-------------------------------|---------------------|------------|
| DE-FOA-0000841 | DE-EE0006729 | GFO-0006729-003 | |

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

CX, EA, EIS APPENDIX AND NUMBER:

Description:

- | | |
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| 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.) |
| B3.1 Site characterization and environmental monitoring | Site characterization and environmental monitoring (including, but not limited to, siting, construction, modification, operation, and dismantlement and removal or otherwise proper closure (such as of a well) of characterization and monitoring devices, and siting, construction, and associated operation of a small-scale laboratory building or renovation of a room in an existing building for sample analysis). Such activities would be designed in conformance with applicable requirements and use best management practices to limit the potential effects of any resultant ground disturbance. Covered activities include, but are not limited to, site characterization and environmental monitoring under CERCLA and RCRA. (This class of actions excludes activities in aquatic environments. See B3.16 of this appendix for such activities.) Specific activities include, but are not limited to: (a) Geological, geophysical (such as gravity, magnetic, electrical, seismic, radar, and temperature gradient), geochemical, and engineering surveys and mapping, and the establishment of survey marks. Seismic techniques would not include large-scale reflection or refraction testing; (b) Installation and operation of field instruments (such as stream-gauging stations or flow-measuring devices, telemetry systems, geochemical monitoring tools, and geophysical exploration tools); (c) Drilling of wells for sampling or monitoring of groundwater or the vadose (unsaturated) zone, well logging, and installation of water-level recording devices in wells; (d) Aquifer and underground reservoir response testing; (e) Installation and operation of ambient air monitoring equipment; (f) Sampling and characterization of water, soil, rock, or contaminants (such as drilling using truck- or mobile-scale equipment, and modification, use, and plugging of boreholes); (g) Sampling and characterization of water effluents, air emissions, or solid waste streams; (h) Installation and operation of meteorological towers and associated activities (such as assessment of potential wind energy resources); (i) Sampling of flora or fauna; and (j) Archeological, historic, and cultural resource identification in compliance with 36 CFR part 800 and 43 CFR part 7. |

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to the University of Hawaii to address the overarching theme of uncertainty quantification and reduction for geothermal exploration, specifically through the development of Geothermal Play Fairways. A play fairway analysis defines levels of uncertainty with respect to the presence and utility of geothermal system elements, and translates them into maps to high grade the geographic area over which the most favorable combinations of heat, permeability, and fluid are thought to extend. A previous NEPA Determination (GFO-FOA0000841-001; CX A9; 07/31/14) reviewed Phase/Budget Period 1 activities. A second NEPA Determination (GFO-0006729-001; CX A9, B3.1, B3.6; 04/25/16) reviewed Budget Period 2 (BP2) but restricted Task 10 pending further review, and a third NEPA Determination (GFO-0006729-002; CX A9, B3.1; 06/02/16) reviewed Task 10 but restricted Subtask 10.2 pending further review. This NEPA Determination is for the remainder of BP2 activities and it reviews Subtask 10.2: MT/AMT and gravity data acquisition on Haleakala volcano (Maui). Additional NEPA review will be required if the recipient is selected to move forward into Budget Period 3.

Activities associated with Subtask 10.2 would involve performing noninvasive geophysical surveys on the island of Maui at the privately owned Ulupalakua Ranch, in addition to the analysis of data collected. The proposed geophysical surveys include establishing temporary magnetotelluric (MT), audiomagnetotelluric (AMT) data collection stations and gravity surveys at 12 data collection stations, all of which are located along existing dirt roadways within the ranch

property.

Gravity survey data collection requires no surface disturbance but the MT/AMT survey would require two small trenches approximately 40 inches long by 6 inches wide by 6 inches deep at each site in which cylindrical antennae would be placed. The MT/AMT sites would be installed in the dirt road track. There would be five holes approximately 6 inches deep or less and 4 inches in diameter in which small electrode units would be placed. The electrodes would be connected to the antennae by wire, and the wiring and data logger would be above ground and contained in a plastic laundry basket. The dipole lengths would be adjusted to maintain fit within the current road disturbance. The stations would occupy the sites for less than 72 hours, then all equipment would be removed from the study area, and all holes would be filled in upon completion of the measurements. See the uploaded file (Description of MT Method.pdf) for a more detailed description of the University of Hawaii's proposed MT survey methodology and equipment configuration at the data collection stations.

Due to project work occurring within previously disturbed areas and the minimal amount of surface disturbance anticipated at each location, DOE has determined that the proposed survey activities do not have the potential to affect historic properties/archaeological sites and subsequently DOE has no further obligations under the National Historic Preservation Act. None of the 12 proposed data collection stations are located within areas designated by the U.S. Fish and Wildlife Service as critical habitat for threatened or endangered species, and all of the stations would be located entirely within areas of pre-existing disturbance associated with the building of roadways. In view of these factors, as well as the temporary timeframe of survey activities, DOE has determined that there would be no effect to sensitive biological resources as a result of the proposed project.

Based on the review of the proposal, DOE has determined the proposal fits within the class of action(s) and the integral elements of Appendix B to Subpart D of 10 CFR 1021 outlined in the DOE categorical exclusion(s) selected above. DOE has also determined that: (1) there are no extraordinary circumstances (as defined by 10 CFR 1021.410 (2)) related to the proposal that may affect the significance of the environmental effects of the proposal; (2) the proposal has not been segmented to meet the definition of a categorical exclusion; and (3) the proposal is not connected to other actions with potentially significant impacts, related to other proposals with cumulatively significant actions, or an improper interim action. This proposal is categorically excluded from further NEPA review.

NEPA PROVISION

DOE has made a conditional NEPA determination for this award, and funding for certain tasks under this award is contingent upon the final NEPA determination.

Insert the following language in the award:

You are restricted from taking any action using federal funds, which would have an adverse affect on the environment or limit the choice of reasonable alternatives prior to DOE/NNSA providing either a NEPA clearance or a final NEPA decision regarding the project.

Prohibited actions include:

Budget Period 3.

This restriction does not preclude you from:

Budget Period 1.

Budget Period 2.

If you move forward with activities that are not authorized for federal funding by the DOE Contracting Officer in advance of the final NEPA decision, you are doing so at risk of not receiving federal funding and such costs may not be recognized as allowable cost share.

Insert the following language in the award:

You are required to:

During the installation of field work equipment, if cultural or archeological artifacts are encountered, the recipient must stop the site installation immediately and inform the DOE Project Officer of the finding. The affected installation must be relocated to another nearby site.

Note to Specialist :

Geothermal Technologies Office

This NEPA determination requires a tailored NEPA Provision.

NEPA review completed by Whitney Doss, 02/06/2017.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:  Casey Strickland  Date: 2/6/2017
NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

Field Office Manager review required

NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON:

- Proposed action fits within a categorical exclusion but involves a high profile or controversial issue that warrants Field Office Manager's attention.
- Proposed action falls within an EA or EIS category and therefore requires Field Office Manager's review and determination.

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

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