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



RECIPIENT: University of Missouri

STATE: MO

PROJECT TITLE : Large Scale GSHP as Alternative Energy for American Farmers: Technical Demonstration & Business Approach

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000116	DE-EE0002824	GFO-0002824-004	GO2824

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:

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.)
B5.15 Small-scale renewable energy research and development and pilot projects	Small-scale renewable energy research and development projects and small-scale pilot projects, provided that the projects are 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.
B5.19 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.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to the University of Missouri to increase the deployment of ground source heat pumps (GSHP) through a new commercial-scale technology demonstration. DOE completed a previous NEPA review (GFO-10-307 CX A9 & B3.1 3/23/2010) authorizing a feasibility study and the engineering design for both Farms A & B. A second NEPA review (GFO-0002824-003 CX A9 & B5.1 11/8/11) authorized installation and commissioning of equipment, performance monitoring and data collection, and project management and reporting for Farm B only as well as financial partner identification and technology transfer related to both Farms A & B. These activities were carried out at Holliday Farms near Prairie Home, Missouri. After the last NEPA Determination, one of the participant farms dropped out of the program and a new location had to be chosen. For the purpose of this determination DOE will be reviewing only the new location.

The University of Missouri seeks to carry out the design, fabrication, installation, operation and monitoring of a full-scale waste heat recovery (WHR) assisted GSHP system at Eigsti Farm located at 31492 Olive Branch Rd, near Sedalia in Pettis County, MO, (38-50-58N, 93-08-01W). The proposed installation area has been previously disturbed by construction and is currently in use as a poultry farm. Four buildings (460' X 42') would be involved in this project, two of which would be operating WHR systems only, with the other two operating WHR-assisted GSHP systems. In a 4000 sq.ft. area on the south side of each of the WHR-assisted GSHP buildings, horizontal ground loop heat transfer piping with a 5-ton capacity would be installed approximately six feet deep. Existing vegetation would be removed prior to construction and restored upon completion of installation. No boring will be required and the installation will remain well above the water table. There would be four waste heat recovery units resting on 6' X 8' concrete pads at the east end of each barn and two open shelters will be constructed for the heat pumps both of which will be located within the previously disturbed area. Additional modifications to the existing structures would include the following: Curtain walls on the south side of each building would be replaced by solid or adjustable louvered walls; north and south sides would be insulated with foam spray; and ventilation fan system modifications would be performed where necessary.

No new electrical transmission services would be installed and the GSHP system would be using water as their heat exchange fluid. No additional permits, licenses or authorizations would be required as a result of the proposed project. Due to the previously disturbed and developed condition of the site DOE has determined that the proposed project would not adversely affect threatened and endangered species in the area. Additionally, the National Register of Historic Places does not identify any historic or cultural resources at the proposed project site. There are not expected to be any adverse effects to wetlands, or floodplains as a result of the proposed project as these resources are not present at the project site.

Based on review of the project information and the above analysis, DOE has determined the operation of the proposed WHR-assisted GSHPs would not have a significant individual or cumulative impact to human health and/or the environment. DOE has determined the proposed project is consistent with actions contained in DOE categorical exclusion A9 "Information gathering, analysis and dissemination", B5.15 "Small-scale renewable energy research and development and pilot projects" and B5.19 "Ground source heat pumps" and is categorically excluded from further NEPA review.

NEPA PROVISION

DOE has made a final NEPA determination for this award


Insert the following language in the award:

If you intend to make changes to the scope or objective of your project you are required to contact the Project Officer identified in Block 11 of the Notice of Financial Assistance Award before proceeding. You must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved.

Note to Specialist :

This NEPA determination does not require a tailored NEPA provision.
Review completed by Rebecca McCord 07/23/2014.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: 
NEPA Compliance Officer

Date: 7/24/2014

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: _____
Field Office Manager

Date: _____