

PMC-ND

(1.08.09.13)

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



RECIPIENT: Southern Research Institute

STATE: GA

PROJECT TITLE : Geothermal Thermoelectric Generation (G-TEG) with Integrated Temperature Driven Membrane Distillation and Novel Manganese Oxide for Lithium Extraction

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001016	DE-EE0006746	GFO-0006746-001	

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.)
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.

Rationale for determination:

Southern Research Institute (Southern) would utilize DOE and cost share funding, working with partners Novus Energy Technologies (Novus), Carus Corporation (Carus), Applied Membrane Technology, Inc. (AMT), and Alterra Power (Alterra), to develop a Geothermal Thermoelectric Generation (G-TEG) system specially designed to both generate electricity and extract lithium from low-temperature geothermal brines. The proposed system would provide baseload renewable electricity to the grid, with a low power generation cost, and high-value lithium recovery system that would decrease costs 20% to 50% versus the current state of the art.

The proposed project would consist of (1) individual component modeling, systems modeling, and laboratory testing of advanced G-TEG systems with Novus thermoelectric devices, application tailored AMT membranes, lithium extraction with Carus developed sorbent systems, and mineral rich brines provided by Alterra, and (2) development of a full business plan and techno-economic feasibility study of the proposed system and its integration with low-temperature mineral rich geothermal sources. The proposed project is a standalone development effort and is not connected to a larger project.

Project work would occur at various laboratories/facilities around the United States. Project work occurring at each facility would conform to existing facility usage with no new permits needed for project work. All facilities have existing health and safety policies in place for the anticipated project work. The Environmental Questionnaire submitted by the recipient lists the locations and details of project work occurring at each facility. Geothermal brine would be sampled from the Soda Lake Power Plant in Nevada.

Based on review of the project information, DOE has determined that project activities would not have a significant individual or cumulative impact to human health and/or the environment. DOE has determined that these activities are consistent with actions contained in DOE categorical exclusions A9 "Information gathering, analysis, and dissemination," and B3.6 "Small-scale research and development, laboratory operations, and pilot projects," and are 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.

Casey Strickland 08/26/2014

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Electronically Signed By: Kristin Kerwin Date: 8/27/2014
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