

**U.S. DEPARTMENT OF ENERGY
EERE PROJECT MANAGEMENT CENTER
NEPA DETERMINATION**



RECIPIENT: Geotek Energy, LLC

STATE: TX

PROJECT TITLE : Gravity Head Energy System (GHES)

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000336	DE-EE0005129	GFO-0005129-002	GO5129

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.

Rational for determination:

DOE is proposing to provide funding to GeoTek Energy, LLC (GeoTek) for Phase IIA which would be used to complete laboratory testing on the prototype Gravity Head Energy System (GHES). There are three main components of the GHES including the Expander Pumping Unit (EPU), the Downhole Heat Exchanger (DHE), and the turbine. The EPU and DHE will be tested in the laboratory, while the turbine component will only be simulated via computer modeling. Phase I activities were previously approved by GFO-0005129-001 on September 9, 2011.

There has been no change in scope, but this project included a go/no-go decision point between Phase I and Phase II of the original Statement of Project Objectives (SOPO). DOE made a conditional "go" decision to proceed with this project. A condition of that decision was to only allow incremental funding up to but not including field testing. The outcome of that condition was that an additional go/no-go decision point was added after Tasks 6 and 7 in the SOPO, which comprise Phase IIA laboratory testing and permitting activities in anticipation of Phase IIB. Phase IIB contains remaining project tasks related to field testing of the prototype GHES unit. Only Phase IIA activities are being funded by DOE at this time, so this NEPA determination is for Phase IIA activities only. Should Phase IIA be successful, Phase IIB would be analyzed by a future NEPA determination.

Phase IIA tasks analyzed as part of this NEPA determination (see current SOPO for details):

Task 6: Manufacture & Lab Test EPU, DHE & Related Instrumentation

Task 7: Complete Permitting for Pilot Well Location Including an Update of Initial Surface Equipment Design

Primary testing will take place at Concepts NREC's test lab facility in White River Junction, VT. According to the R&D Laboratory Questionnaire, no additional permits are needed beyond what is already in place. The lab has all necessary safety equipment in place for testing. No gases, chemicals, or heavy metals would be employed in the testing. No hazardous waste, liquid effluent, or air pollution would be created as part of the testing.

Go/No-Go Decision Point – A Go/No-Go review would be conducted on the acceptability of deliverables and the probability of project success in order to determine the path forward for Phase IIB.

Based on review of the project information, DOE has determined that the Phase IIA activities would not have a significant individual or cumulative impact to human health and/or 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 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:

Phase IIB (all tasks)

This restriction does not preclude you from:

Phase I (all tasks)

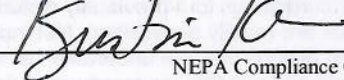
Phase IIA (all tasks)

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.

Note to Specialist :

Casey Strickland 6/13/2013

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:  Date: 6/14/2013
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