PMC-EF2a
(2.06.02)

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

RECIPIENT: GeoTek Energy, LLC **STATE:** TX

PROJECT TITLE : Energy Production with Innovative Methods of Geothermal Heat Recovery

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000336	DE-EE0005129	GFO-0005129-001	0

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 (including, but not limited to, literature surveys, inventories, audits), data analysis (including computer modeling), document preparation (such as conceptual design or feasibility studies, analytical energy supply and demand studies), and dissemination (including, but not limited to, document mailings, publication, and distribution; and classroom training and informational programs), but not including site characterization or environmental monitoring.

Rational for determination:

DOE is proposing to provide federal funding to GeoTek Energy, LLC (GeoTek) to complete feasibility studies and conceptual designs of the GHES components required to complete the manufacturing designs for the Gravity Head Energy System (GHES) Pilot Well size components. GeoTek's goal is a GHES Pilot Well capable of producing 200 to 400Kwh. GeoTek would operate and test the GeoTek GHES Pilot Well for the purposes of verifying the output, operating costs, control functions and reliability necessary to market the GeoTek GHES as a commercial technology. GeoTek plans to further develop and update its GHES economic model using the DOE Geothermal Electricity Technology Evaluation Model ("GETEM") and refined GHES cost estimates as design work continues. This NEPA determination applies to Phase I and Task 11 (Reporting) only.

PHASE I (Budget: $450,000 by DOE, $1,308,802 by GeoTek = $1,758,802)

Task 1: Identify Potential Resources- GeoTek would use a combination of geothermal resource mapping available, existing public information on discovered and producing wells and published studies of domestic and international geothermal power plant developments to estimate the potential universe of geothermal resources to which GHES could apply.

Task 2: Estimate the Potential Production Ranges for Resources- GeoTek would apply the operating parameters of the GHES, as projected, using the potential geothermal resources identified to estimate the potential production ranges to quantify the additional net power production capability.

Task 3: Economic Modeling- GeoTek would refine the GHES model by incorporating more detailed cost estimates based on final site selection, advances in GHES component design over traditional binary central plant technology and bids received from vendors.

Task 4: Systems & Conceptual Designs- Conceptural design manufacturing drawings and cost estimate for the downhole heat exchanger ("DHE"), the downhole expander pumping unit ("EPU") and the well-site surface power generation facilities.

Task 5: Pilot Well Site Negotiation- Negotiate with geothermal power plant developer/operators about possible sites in the western United States for the GeoTek GHES Pilot Well.
Task 11: Reporting

Go/NoGo Decision Point – A Go/NoGo review would be conducted on the acceptability of deliverables listed below and the probability project success in order to determine the path forward for Phase 2.

The testing locations for Phase II have not been identified, and the geothermal technology has not been defined, therefore DOE cannot complete the NEPA review for Phase II at this time. DOE will complete the NEPA review for Phase II once the testing locations and technologies have been defined and submitted to DOE for review.

Phase I of this project comprises research, data analysis, and conceptual design to promote the research and development of geothermal resources and technologies; CX A9 applies. Phase II is subject to 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 II (except Task 11)
This restriction does not preclude you from:
Phase I and Task 11
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 :

EF2A written by Christopher Carusona II

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 9/9/2011
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