PMC-ND
(1.08.09.13)

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

RECIPIENT: Foro Energy, Inc. **STATE:** CO

PROJECT TITLE : High Power Laser Tool and System for Unique Geothermal Well Completions

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
	DE-EE0006270	GFO-0006270-001	

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:

Foro Energy would utilize DOE and cost share funds to design, build, and field test an engineering prototype of a high power laser tool and system with the objective of enabling unique geothermal well completions with potential for superior thermal contacting between the wellbore and surrounding geological formation. Funds would be used for conducting an engineering design and then final prototype design, purchasing capital equipment (e.g. high power laser and system), building the tool and system, laboratory testing, and surface system testing. All work would occur at the Foro Energy facilities at 8020 Southpark Circle, Suite 500, Littleton, CO 80120 and 4321 W. Sam Houston Pkwy N, Houston, TX 77043. Future project work may or may not be funded by DOE and if it is would be negotiated separately as a Technology Investment Agreement (TIA) under a different award. If future project activities are funded another NEPA review will be required for those activities.

The project consists of engineering analysis, requirements documentation, product design, project planning, building of the high power laser system, final prototype design of the completion tool, purchase of all necessary supplies and equipment, building of the tool prototype, bench scale testing of the assembly, and laboratory surface testing of the system. Laboratory surface testing would consist of operating the tool at the laboratory site on disturbed land that has previously been used for similar testing of laser drilling systems. All testing would take place at the Foro Energy facilities listed above.

According to the R&D laboratory questionnaire (for work to be completed at both locations), no additional permits are needed for the laboratory activities and there would be no toxic substances or air pollutants produced from this work. Appropriate safety procedures, protocols, and equipment are in place for laboratory personnel and many OSHA standard safety protocols are in place for heavy equipment use, facility organization and safe operating procedures. Please refer to the uploaded documentation for further information.

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 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 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 09/04/2013

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Electronically Signed By: Kristin Kerwin Date: 9/4/2013

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