

PMC-EF2a

(20102)

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



RECIPIENT: Arthur Mansure

STATE: NM

**PROJECT TITLE :** Renewability and Sustainability of Geothermal Energy Production

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
E-FOA-EE0000075	DE-EE0002740	GFO-10-153	2740

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:

Arthur Mansure would complete an Energy Returned on Investment (EROI) for electric power production of Engineered Geothermal Systems (EGS). The framework established and methodology would apply to hydrothermal, low-temperature, direct heat, co-produced fluids, and heat pump utilization of geothermal resources. The project is divided into two tasks.

## Task 1) Preliminary EROI of EGS

Process analysis would be developed for key well construction steps as part of this work. This data would be supplemented with data from Argonne National Lab's LCA (Life Cycle Assessment) of geothermal development other related efforts. The result will be a preliminary determination of EROI for EGS that would be documented in detail including supplemental information and published.

## Task 2) Project Management and Reporting

Reports and other deliverables would be provided in accordance with the Federal Assistance Reporting Checklist following the instructions included therein.

There should be no generation of air emissions or hazardous wastes associated with this project. This project comprises of information gathering and analysis; therefore this project is categorized into Categorical Exclusion A9.

**NEPA PROVISION**

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

None Given.

**SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.**

NEPA Compliance Officer Signature: Kristin Kerwin  
NEPA Compliance Officer

Date: 11/26/2010

**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: \_\_\_\_\_

As information gathering (including, but not limited to, requests for information, interviews, audits, data analysis (including computer modeling), document preparation (such as conceptual design or feasibility studies, preliminary energy study and demand studies), and discussions (including, but not limited to, document meetings, teleconferences, and distribution and discussion among and among project), but not including the preparation of environmental monitoring

Task 1) Preliminary EROI of EGS  
Process analysis would be developed for lay well construction sites as part of this work. This data would be supplemented with data from Argonne National Lab's EGS-CO<sub>2</sub> (Department of Governmental development after project effort. The result will be a preliminary determination of EROI for EGS that would be documented in detail including supplemental information and published.

Task 2) Project Management and Reporting  
Reports and other deliverables would be provided in accordance with the Federal Assistance Reporting Checklist following the instructions included herein.

There should be no generation of the emissions or hazardous wastes associated with this project. This project consists of information gathering and analysis. Therefore this project is categorized into Categorical Exclusion A2.

NEPA REVIEW  
DOE has made a final NEPA determination for the work  
based on the following language in the work:  
None specified:  
None given

SIGNATURE OF THE NEPA REVIEWER CONSTITUTES A RECORD OF THIS DECISION