

PMC-ND  
(1.08.09.13)

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



RECIPIENT: Ceramatec, Inc.

STATE: UT

PROJECT TITLE : Novel Electro-Deoxygenation Process for Bio-oil Upgrading

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA0000812	DE-EE0006288	GFO-0006288-001	GO6288

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:

- |   |  |
|---|--|
| <b>A9 Information gathering, analysis, and dissemination</b>                          | 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.) |
| <b>B5.15 Small-scale renewable energy research and development and pilot projects</b> | Small-scale renewable energy research and development projects and small-scale pilot projects, provided that the projects are located within a previously disturbed or developed area. Covered actions would be in accordance with applicable requirements (such as local land use and zoning requirements) in the proposed project area and would incorporate appropriate control technologies and best management practices.   |

**Rationale for determination:**

The U.S. Department of Energy (DOE) is proposing to provide federal funding Ceramatec, Inc. to research and develop an efficient electrochemical deoxygenation process to upgrade biomass derived pyrolysis oil (bio-oil) to refinery ready hydrocarbons and to show the techno-economic feasibility of the novel deoxygenation technology.

This NEPA determination covers Budget Period 1 tasks, "Laboratory EDOx (electrochemical deoxygenation ) Cell Optimization" and "EDOx Cell Testing with Mixtures of Model compounds and Aqueous Phase Pyrolysis Oil", which include project management, data analysis, computer modeling and laboratory scale research and development activities. Budget Period 2 tasks, "Integration with Fast Pyrolysis Reactor at Bench Scale" and "Techno-economic Feasibility and Life-cycle Analysis (LCA)", are not being considered at this time, as DOE needs to make a critical Go / No Go funding decision at the conclusion of Budget Period 1.

All research and development activities would be small-scale and occur within laboratory environments. Field testing would not occur. Ceramatec would partner with DOE's Pacific Northwest National Laboratory (PNNL) to complete this project. Ceramatec has an existing advance research and development laboratory facility which is located at 2425 South 900 West, Salt Lake City, Utah. Ceramatec has standard protocols in place for facility and laboratory safety, risk management, chemical handling and waste disposal and complies with standard laboratory environmental and safety procedures. All handling and disposal of gases, chemicals, effluents and hazardous wastes comply with appropriate regulations. All standard safety equipment is in place at the facilities. The facilities operate under all applicable permits to conduct laboratory research and would not need additional permits for the proposed activities. GMOs would not be used during this project.

All work completed at DOE National Laboratories (PNNL) may be subject to additional NEPA review by the appropriate DOE NEPA Compliance Officer.

Based on review of the project information and the above analysis, DOE has determined the proposed laboratory based research and development activities would not have a significant individual or cumulative impact to human health and/or environment. DOE has determined the proposed project is consistent with actions contained in DOE categorical exclusions A9 "information gathering, analysis and dissemination," and B5.15 "small-scale renewable energy research and development 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:

Budget Period 2 tasks - "Integration with Fast Pyrolysis Reactor at Bench Scale" and "Techno-economic Feasibility and Life-cycle Analysis (LCA)".

This restriction does not preclude you from:

Budget Period 1 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 :

This NEPA Determination requires a tailored NEPA provision.

Obadiah Broughton 8/23/2013

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

NEPA Compliance Officer Signature: \_\_\_\_\_

  
NEPA Compliance Officer

Date: \_\_\_\_\_

8/26/2013

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