

PMC-EF2a

(20402)

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



RECIPIENT: Iowa State University of Science and Technology

STATE: IA

PROJECT TITLE : Stabilization of Bio-Oil Fractions for Insertion into Petroleum Refineries

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000686	DE-EE0006066	GFO-0006066	EE6066

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:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to the Iowa State University of Science and Technology (ISU) to research, develop, produce and analyze stabilized bio-oil fractions suitable for insertion as feedstock into petroleum refineries. Under this DOE award, funding would be used to produce (approximately 20 gallons), analyze and characterize four distinct bio-oil fractions with an existing Fast Pyrolysis Process Development Unit housed at the BioCentury Research Farm on the ISU campus. Funding would also be used to further process (catalytically upgrade) and stabilize the four distinct bio-oil fractions, evaluate the suitability of the stabilized bio-oil fractions for insertion within a petroleum refinery, and complete a techno-economic analysis (TEA) of producing stabilized fractions of bio-oil fractions for insertion within a petroleum refinery.

The research, development and analysis project would be completed at two existing ISU facilities and laboratories at the University of Oklahoma (OU) and the DOE's Pacific Northwest National Laboratory (PNNL). Production and analysis of the four distinct bio-oil fractions would occur at ISU's BioCentury Research Farm located at 1327 U Ave, Boone, Iowa, 50036. Analysis of the bio-oil fractions and completion of the TEA would occur at the ISU Biorenewables Research Laboratory (BRL) located on the ISU campus at 104 Marston Hall, Ames, Iowa, 50011. Catalytic upgrading and analysis of the bio-oil fractions would occur in laboratories at OU's Sarkey's Energy Center (SEC) located on the OU campus at 100 E. Boyd St, Norman, Oklahoma, 73019; as well as at three laboratories operated by PNNL located at 902 Battelle Boulevard, Richland, Washington, 99352.

ISU, OU and PNNL have all completed an R&D questionnaire addressing the protocols for laboratory and site safety, risk management and waste disposal. The laboratories/sites comply with standard safety procedures and all processes and procedures are monitored by the Environmental Health and Safety staff. The laboratories/sites have all applicable permits in place, and would not need additional permits for the proposed activities. All handling and disposal of gases, chemicals, wastes and liquid effluents comply with appropriate regulations. The corn stover used as a feedstock by ISU to produce bio-oil fractions, is produced from GMO corn. The GMO corn is part of ISU's Department of Agricultural and Biosystems Engineering ongoing research activities. Surplus corn stover is currently provided to the BioCentury Research Farm for existing activities, is commercially available and handled according to applicable regulations.

Based on review of the project information and the above analysis, DOE has determined the research, development and analysis activities associated with production and analysis of small quantities of stabilized bio-oil fractions as a potential feedstock into petroleum refineries 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 exclusion 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.

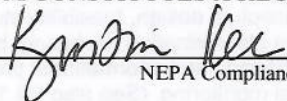
Note to Specialist :

Obadiah Broughton 1/14/2013

DOE Funding: \$750,000

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____



NEPA Compliance Officer

Date: _____

1/15/2013

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: _____