

PMC-EF2a

(20402)

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



RECIPIENT: Southern Research Institute

STATE: AL

PROJECT TITLE : Mild Biomass Liquefaction Process for Economic Production of Stabilized Refiner-Ready Bio-Oils

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000686	DE-EE0006062	GFO-0006062-001	

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.

Rational for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to Southern Research Institute (SRI) to demonstrate a lab-scale biomass liquefaction system capable of producing bio-oils from woody biomass, that could be directly blended with hydrotreater and hydrocracker input streams in a petroleum refinery for production of gasoline and diesel range hydrocarbons.

Funding would be used to install a continuous flow lab-scale biomass liquefaction system and related equipment to produce bio-oil samples, to collect and analyze data and to conduct a Technical and Economic Analysis (TEA) and a Life Cycle Assessment (LCA). Collected data, the TEA and the LCA would be used to facilitate the development of a preliminary conceptual commercial-scale plant design and process cost model, as well as identify a potential refinery partner willing to move the process towards commercialization. Once a partner is selected, bio-oil samples would be sent to the refinery for insertion into specific refinery unit operations for analysis and evaluation.

This NEPA determination covers the installation and demonstration of the lab-scale biomass liquefaction system, data collection and analysis activities and the selection of a refinery partner. This NEPA determination does not cover activities associated with the sending of bio-oil samples to a refinery or the insertion of bio-oil samples into a refinery's specific refinery unit operations, as the partner and specific activities are unknown. The potential impacts of these activities cannot be evaluated and a NEPA determination cannot be completed at this time, therefore further NEPA review is required.

Lab-scale demonstration, data collection and analysis activities would be performed at SRI's research and development facility in the Treyburn Industrial Park located at 5201 International Drive, Durham, North Carolina. The SRI facility has offices, labs, and a 42,000 square ft. high-bay pilot plant operation building. LAC modeling would be performed by a consultant to SRI; Princeton Environmental Institute Energy Systems Analysis Group in Princeton, New Jersey.

SRI completed a R&D questionnaire addressing the protocols in place for laboratory safety, risk management, chemical handling and waste disposal at their research and development facility. SRI complies with standard laboratory environmental and safety procedures and is monitored by their in-house safety and environmental program which is periodically audited by an outside entity. All handling and disposal of gases, chemicals, effluents and hazardous wastes comply with all appropriate regulations. All standard safety equipment is in place at the facility. The facility operates under all applicable permits to conduct laboratory research and pilot project operations, including air

emissions, facility wastewater pretreatment, hazardous materials handling/disposal. GMOs would not be used during this project.

This DOE NEPA determination does not apply to activities associated with the sending of bio-oil samples to a refinery or the insertion of bio-oil samples into a refinery's specific refinery unit operations. These activities are subject to further NEPA review prior to the authorization of federal funds.

Based on review of the project information and the above analysis, DOE has determined the proposed installation and demonstration of a lab-scale biomass liquefaction system and data collection and analysis activities would not have a significant individual or cumulative impact to human health and/or environment. DOE has determined the proposed 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 are 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:

Activities associated with the sending of bio-oil samples to a refinery or the insertion of bio-oil samples into a refinery's specific refinery unit operations.

This restriction does not preclude you from:

Activities associated with the installation and demonstration of the lab-scale biomass liquefaction system, data collection and analysis and the selection of a refinery partner.

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 project has a NEPA hold on activities associated with the sending of bio-oil samples to a refinery or the insertion of bio-oil samples into a refinery's specific refinery unit operations and will require an additional NEPA review and approval prior to expenditure of funds for these activities

Obadiah Broughton 12/12/2012

DOE funding: \$654,330

Cost share: \$240,312

Total Project Cost: \$894,642

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____

NEPA Compliance Officer

Date: _____

12/19/2012

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 :