PMC-ND

(1.08.09.13)

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

RECIPIENT: University of Memphis **STATE:** TN

PROJECT TITLE : Biofuel Micro-Refineries for Local Sustainability

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
	DE-EE0003121	GFO-0003121-002	GO3121

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:

B1.31 Installation or relocation of machinery and equipment	Installation or relocation and operation of machinery and equipment (including, but not limited to, laboratory equipment, electronic hardware, manufacturing machinery, maintenance equipment, and health and safety equipment), provided that uses of the installed or relocated items are consistent with the general missions of the receiving structure. Covered actions include modifications to an existing building, within or contiguous to a previously disturbed or developed area, that are necessary for equipment installation and relocation. Such modifications would not appreciably increase the footprint or height of the existing building or have the potential to cause significant changes to the type and magnitude of environmental impacts.
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:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to The University of Memphis to enhance the capabilities of education, research and training facilities at a community college and a metropolitan research University. DOE funding would be used for the enhancement of the existing second generation biodiesel micro-refinery at the Mid-South Community College (MSCC) to improve continuous flow post-esterification processing and produce ASTM standard fuel at both institutions.

DOE made a previous NEPA determination (GFO-0003121-001 CX A9, B3.1, B3.6 5/17/2011) for Task A, to enhance the biodiesel micro-refinery in the Center for Biofuel Energy and Sustainable Technologies (BEST) of the University of Memphis and Task B, to enhance the existing second generation biodiesel micro-refinery at the MSCC. Per DOE directions subsequent to project review, work on Task A was suspended to devote resources to the remaining phases of the award, Task B. This NEPA determination applies to all remaining phases of the award, Task B, to enhance the existing second generation biodiesel micro-refinery and would be performed at one location, the MSCC. The MSCC is located at 2000 W. Broadway Ave, West Memphis, Arkansas 72301.

Task B, which includes enhancements to the second generation biodiesel micro-refinery at the MSCC, would be based on the continuous-flow technologies used in commercial refineries but would fit on a single pallet in a laboratory room. There would be no proposed change in the use, mission or operation of the existing laboratory facilities at the MSCC. There would also be no construction of or modification to transmission lines or other utilities.

The MSCC micro-refinery would be enhanced to process feedstock that requires physical and/or chemical pre-treatment before entering the existing esterification system through the addition of several items. The addition of large storage tanks would increase the capacities of feedstock and product handling while the addition of a pre-treatment distillation column would increase the range of usable feedstock accepted by the existing biodiesel micro-refinery. Efficiency would be increased through the addition of a post-reaction methanol stripping column used to recycle excess methanol. A distillation column would be added to improve the purity and properties of biodiesel and new instrumentation would be added to ensure biodiesel meets or exceeds ASTM standards. Upon completion of enhancement the micro-refinery would be used for educational and training purposes at the MSCC. The processing rate of feedstock to biodiesel of the micro-refinery would be approximately 30 liters per hour.

The University of Memphis completed an environmental questionnaire addressing the protocols for laboratory safety, risk management, chemical handling and waste disposal for all laboratory facilities that may be used in during the proposed project. The laboratories and facilities comply with standard safety procedures and all processes and procedures are monitored by appropriate staff. The laboratories and facilities 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. All hazardous materials would be managed and disposed of in accordance with federal, state, and local environmental regulations.

Based on review of the project information and the above analysis, DOE has determined the proposed 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 exclusion B3.6 "small-scale research and development projects" and B1.31 "installation of machinery or equipment" 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 :

May Mock 3/6/2014
This NEPA determination does not require a tailored NEPA provision.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Electronically Signed By: Kristin Kerwin Date: 3/7/2014

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