

PMC-ND
(1.08.09.13)

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

**RECIPIENT:** University of Wisconsin-Madison**STATE:** WI

PROJECT TITLE: Mono-Ether and Alcohol Bioblendstocks to Reduce the Fuel Penalty of Mixing Controlled Compression Ignition Engine Aftertreatment

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001919	DE-EE0008480	GFO-0008480-001	

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Policy 451.1), 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.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to the University of Wisconsin (UW) to develop and test bioblendstocks for diesel fuel, and to conduct technoeconomic analysis regarding those bioblendstocks. The project would be completed over three Budget Periods (BPs), with a Go/No-Go Decision Point in between each BP. Each BP would include four tasks.

Task 1 in BP1 would include the bench scale catalytic production of bioblendstocks, specifically the coupling of alcohols (ethanol and butane) into larger alcohols. The process would involve the use of different catalysts, including hydroxyapatites, Amberlyst, and zeolites, in a continuous flow reactor. Approximately 1 liter of bioblendstock would be produced in this process. Work in this task would be conducted in the University of Wisconsin Huber Group Laboratories.

Task 2 in BP 1 would be limited to computational work, specifically technoeconomic analysis.

Task 3 in BP 1 would involve engine testing of bioblendstock and diesel fuel in single cylinder and multi cylinder engines. Work in this task would be conducted in the University of Wisconsin engine Research Center Laboratories.

Task 4 in BP 1 would include testing and modeling of fuel properties. This work would include testing at the University of Wisconsin as well as third party vendor independent testing.

In BP 2 and BP 3 UW would incorporate lessons learned in the prior budget period and duplicate the four tasks in the current budget period.

Proposed project activities would be limited to laboratory-scale bioblendstock production and testing. All project activities would be performed at existing, purpose-built laboratory facilities operated by UW and/or its project partners. All facilities regularly conduct experiments/analysis similar to the activities that would be performed as part

of this project. No change in the use, mission or operation of existing facilities would be required, nor would any additional authorizations or permits be required to complete project activities.

The project would involve the use and handling of compressed gases, flammable gases, fuels, and industrial solvents. All handling would occur in dedicated labs in compliance with UW material handling and disposal practices, the UW Spill Prevention, Control, and Countermeasures plan, and in compliance with UW Environmental Health and Safety Policies and Procedures, and in compliance with all applicable Federal, state, and local health, safety and environmental rules and regulations. Any remaining hazardous waste utilized or produced as part of the project would be handled, transported, and disposed of by the UW Environment Health and Safety department and in compliance with approved methods.

NEPA PROVISION

DOE has made a final NEPA determination.

Notes:

Bioenergy Technologies Office

This NEPA determination does NOT require a tailored NEPA provision.

Review completed by Roak Parker, 02/22/2019

FOR CATEGORICAL EXCLUSION DETERMINATIONS

The proposed action (or the part of the proposal defined in the Rationale above) fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D. To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10 CFR Part 1021, Subpart D, Appendix B.

There are no extraordinary circumstances related to the proposed action that may affect the significance of the environmental effects of the proposal.

The proposed action has not been segmented to meet the definition of a categorical exclusion. This proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

The proposed action is categorically excluded from further NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____



Casey Strickland

NEPA Compliance Officer

Date: 2/25/2019

FIELD OFFICE MANAGER DETERMINATION

- Field Office Manager review not required
 Field Office Manager review required

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____

Date: _____

Field Office Manager