PMC-ND

(1.08.09.13)

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

RECIPIENT: MicroBio Engineering Inc **STATE:** CA

PROJECT TITLE : Clean water, sustainable aviation fuel and renewable diesel production from wastewater

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-EE0009752	DE-EE0009752	GFO-0009752-001	GO9752

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 funding to MicroBio Engineering Inc. (MBE) (San Luis Obispo, CA) to assess the potential of hydrothermal liquefaction (HTL), a process that would convert wastewater solids (“sludge”) into biofuel using moderate temperature and high pressure.

Award activities would consist of sludge collection at municipal wastewater treatment plants (WWTPs), for the lab-scale and bench-scale analyses, and later for the pre-pilot scale. The municipal WWTPs are not fully identified yet, however all facilities would be purpose-built municipal WWTP that are already in use, and for whom sludge collection would be a standard activity.

Award activities carried out at MBE would consist of lab characterization of municipal wastewater sludges and the assembly of a dewatering skid,. The lab testing of HTL for both solid and aqueous phase sludge would occur at the California Polytechnic State University (Cal Poly), bench-scale HTL tests of sludges and upgraded biocrude products at the Pacific Northwest National Laboratory (PNNL) (Richland, WA) and at the University of Illinois at Urbana Champaign (UIUC) (Urbana, IL). Pre-pilot scale HTL testing would occur at UIUC, as well as the characterization of byproducts and upgraded biofuel products. In order to operate the pre-pilot system, UIUC would need to obtain authorization from the Campus Environmental Health and Safety Department. Lastly, MBE would perform technoeconomic and life cycle analyses.

The handling of sludges may involve compressed gases, pathogens, and hazardous materials. All existing environmental health and safety (EHS) procedures would be followed, including employee training, proper protective equipment, engineering controls, and monitoring. Hazardous waste generated during the award activities would be disposed of according to the San Luis Obispo County regulations. The collection and transport of wastewater sludges from municipal WWTPs would follow appropriate local, state, and federal regulations. Transportation of larger quantities of sludge from WWTPs would occur in transportation-certified gallon drums and gallon totes. No testing would occur at the WWTPs. Sludge and biocrudes would be sent to hazardous waste processing facilities upon the completion of the project. Heavy equipment usage (forklift) would be possible and would follow all necessary EHS regulations.

All award activities would take place in purpose-built facilities. If necessary, MBE may deploy a mobile skid measuring 10x20 feet for sludge thickening and dewatering, depending on the capabilities of the partner WWTPs. Installation

would be temporary using flexible hoses and temporary fittings with the skid being taken down after about a month of testing. Although exact locations of the WWTPs have not yet been determined, none of these activities would require permanent modifications to the WWTPs. DOE has determined that the project activities would have no potential to cause effects to resources of concern.

NEPA PROVISION

DOE has made a final NEPA determination.

Notes:

Bioenergy Technologies Office (BETO)
Review completed by Alex Colling on 07/29/2022.

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: Electronically Signed By: Casey Strickland Date: 8/1/2022
NEPA Compliance Officer

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