

PMC-ND

(1.08.09.13)

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

**RECIPIENT:** University of Maryland - College Park**STATE:** MD

**PROJECT TITLE:** Innovative Polyhydroxyalkanoates (PHA) Production with Microbial Electrochemical Technology (MET) Incorporation for Community-Scale Valorization

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-0002203	DE-EE0009268	GFO-0009268-001	G09268

**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 the University of Maryland (UMD) to conduct and lead experiments utilizing wet organic wastes (such as food waste) toward production of polyhydroxyalkanoates (PHAs) and towards increase in value and use of PHA.

Research would be undertaken by UMD and project partners including Virginia Tech University (VTU), the Naval Research Laboratory (NRL) of the Department of Defense, Idaho National Laboratory (INL), and Quasar Energy. Initial research would involve utilizing a mix of US food product as described by the US Department of Agriculture (USDA) as the ten most common food wastes. Additional experiments will be conducted utilizing food waste from Maryland Environmental Services, which operates an existing food waste composting site, so that research can compare data from the USDA mix to locally available mixes.

Research on the waste will be varied by project partner. UMD will process wastes in it's laboratory and analyze for carbon conversion. VTU will conduct molecular analysis, pre-treatment, fermentation and PHA extraction. NRL would conduct fermentation experiments. INL would conduct osmosis and PHA purification experiments. All experiments at UMD and these project partners would utilize standard laboratory equipment and would take place in existing laboratories. All existing University and/or corporate health and safety procedures including training and use of PPE would be followed.

Quasar Energy would fabricate a 30 liter reactor for PHA production, and would utilize existing 90 Liter reactors for production of volatile fatty acids. The new small reactor will be fabricated at Quasar's fabrication facility in Independence, Ohio. The new and existing reactors will be shipped to Quasars facility in Wooster, Ohio. Quasar will conduct laboratory scale experiments utilizing the reactors. To conduct laboratory scale experiments, Quasar will rent space at an Ohio State University laboratory. Quasar regularly fabricates research scale as well as large scale reactors. All corporate health and safety practices would be followed during fabrication. All existing University health and safety procedures including training and use of PPE would be followed in the laboratory.

No modifications to any facilities or new permits would be required for any of the work.

Any work proposed to be conducted at a federal facility may be subject to additional NEPA review by the cognizant federal official and must meet the applicable health and safety requirements of the facility.

**NEPA PROVISION**

DOE has made a final NEPA determination.

Notes:

[Bioenergy Technology Office](#)

[This NEPA determination does not require a tailored NEPA provision.](#)

[Review completed by Roak Parker, 02/17/2021](#)

**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: \_\_\_\_\_

  
NEPA Compliance Officer

Date: 2/17/2021

**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: \_\_\_\_\_

Field Office Manager

Date: \_\_\_\_\_