

PMC-ND
(1.08.09.13)

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



RECIPIENT: Battelle

STATE: OH

PROJECT TITLE: Hybrid Approach to Repurpose Plastics Using Novel Engineered Processes (HARNESS)—Technical Area 2 Novel Methods for Deconstructing and Upcycling Plastics

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002245	DE-EE0009299	GFO-0009299-001	G09299

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 Battelle Memorial Institute (Battelle) to develop a platform for waste plastics upcycling of polyether- polyurethane (PE-PU) foams.

Battelle would lead a research team that includes the National Renewable Energy Lab (NREL), Allonnia LLC, and Gingko Bioworks. Research would include biological, chemical, and mechanical processing of PE-PU foams. Work would also include conducting a technoeconomic and lifecycle analysis as well as market transformation and commercialization plans.

Laboratory work at Battelle would initially include mechanical and chemical processing of small amounts (batches well under 1 pound) of PE-PU. This could include grinding, steam blasting, and chemical etching of the material. Processed materials would then be sent to Allonnia and Gingko Bioworks. NREL would complete software modeling and engineering, and then identify and provide enzymes for biological processing. Enzymes would be sent to Allonnia and Gingko Bioworks. Allonnia and Gingko Bioworks would then expose the material received from Battelle to the enzymes received from NREL. After processing the materials, Allonnia and Gingko Bioworks would send the end product back to Battelle for analysis. NREL would also be involved in analyzing the end product data. After analysis, Battelle would use results to modify process steps and expand processing to be able to process larger amounts of PE-PU, up to 20 pounds per day.

All work would be conducted within existing laboratory facilities and would be bench or laboratory scale using existing equipment. No new facilities or modifications to facilities would be required. Work would include use of laboratory equipment, and use of chemical and biological agents. All laboratories would follow established corporate health and safety practices, including use of protective equipment. All materials would be properly disposed of, including autoclaving or bleach disinfecting of any biological agents.

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, 5/13/2021

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: _____

 Electronically
Signed By: **Roak Parker**
NEPA Compliance Officer

Date: 5/13/2021

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: _____