

PMC-ND  
(1.08.09.13)

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

RECIPIENT: [Northwestern University](#)

STATE: IL

**PROJECT TITLE:** [ResIn: Responsible Innovation for Highly Recyclable Plastics](#)

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
<a href="#">DE-FOA-0002029</a>	<a href="#">DE-EE0008928</a>	<a href="#">GFO-0008928-001</a>	<a href="#">GO8928</a>

**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 Northwestern University to achieve chemical recyclability of polyhydroxyurethanes (PHUs) and polythiourethanes (PTUs).

Activities will include: verification of properties, initial foundational research on the recyclability of PHUs and PTUs; computational design; synthesis of PHUs and PTUs; testing of the PHUs and PTUs synthesized; as well as risk assessment, life cycle analysis and techno-economic analysis.

Initial verification, foundational research, design, as well as risk assessment, life cycle analysis and techno-economic analysis would be limited to information gathering and analysis, and computational modeling and would occur at Northwestern University and Argonne National Laboratory.

Synthesis and testing of materials would be conducted at Northwestern University in a dedicated preexisting laboratory facility. Some material testing would also occur at Argonne National laboratory. These processes would utilize about one liter of a bio feedstock, as well as associated chemicals and solvents to synthesize and characterize the polymers (PHU and PTU). Approximately 10 liters of such chemicals would be used. All work would be small scale or bench scale and would be conducted in preexisting laboratory buildings purpose built for such work. All existing health and safety standards would be followed including staff training, protective gear, engineering and monitoring controls, and internal assessments. Approximately 10 liters of waste would be produced at Northwestern during the 3 year lifetime of the project. Such waste would be disposed of in accordance with the Northwestern Office of Research and Safety policies.

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 applicable health and safety requirements of the facility.

## NEPA PROVISION

DOE has made a final NEPA determination.

Notes:

Bio Energy Technology Office

This NEPA determination does NOT require a tailored NEPA provision

Review completed by Roak Parker 10/25/2019

## 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:  \_\_\_\_\_  
NEPA Compliance Officer

Date: 10/25/2019

## 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: \_\_\_\_\_  
Field Office Manager

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