

PMC-ND
(1.08.09.13)

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



RECIPIENT: NREL

STATE: CO

PROJECT TITLE: NREL-19-008 Montana State University Enzyme Research

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
	DE-AC36-08GO28308	NREL-19-008	GO28308

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:

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's (DOE) National Renewable Energy Laboratory (NREL) in Golden, Colorado, proposes to enter into a subcontract with Montana State University (MSU) in Bozeman, Montana, to identify, characterize, and optimize hyperthermophilic (heat-resistant) enzymes that can degrade poly(ethylene terephthalate) (PET).

Once identified, candidate enzymes would be characterized using both biophysical and structural biology methods to determine how enzyme structure directs its ability to degrade PET. Enzyme proteins would be genetically modified to enhance the enzymes' thermostability and activity on PET and other potential plastics. Laboratory tasks associated with the project would involve chemicals and materials typically used in biological work. The enzymes and bacteria that would be used are considered to be safe and pose no hazard to humans or the environment. At the conclusion of the experiments, MSU would deliver select isolated PETases and candidate proteins to NREL, where they would be added to a suite of enzymes currently under investigation for performance and the possibility of further research. The remaining cell cultures would be autoclaved, and the resulting non-hazardous material would be disposed of in accordance with MSU policies and procedures.

All research activities would occur in existing laboratories that perform such work, and no new equipment or infrastructure would be needed to support the experiments. No change in the use, mission, or operation of existing facilities would result from the proposed project. If required, the responsible researcher at MSU will obtain any United States Department of Agriculture Animal and Plant Health Inspection Service (APHIS) permits needed to conduct the work, or to send isolated PETases and candidate proteins to NREL. Any work associated with this proposed project shall not proceed until all required permits have been received.

There would be no anticipated direct or indirect environmental or health and safety impacts due to the work. Existing MSU health and safety policies and procedures would be followed, including safe handling of organisms, proper waste disposal, and the use of employee personal protective equipment.

NEPA PROVISION

DOE has made a final NEPA determination.

Include the following condition in the financial assistance agreement:

Any work associated with this proposed project shall not proceed until all required permits from the United States Department of Agriculture Animal and Plant Health Inspection Service have been received.

Notes:

NREL

Nicole Serio 12/13/2018

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: _____



Kristin Kerwin

NEPA Compliance Officer

Date: 12/13/2018

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: _____