

PMC-ND

(1.08.09.13)

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

**RECIPIENT:** UHV Technologies, Inc.**STATE:** KY

**PROJECT TITLE:** Advanced Sensing for Characterization and Sorting of Non-Recyclable Plastics Using Sensor Fusion with Artificial Intelligence

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-2203	DE-EE0009266	GFO-0009266-001	GO9266

**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 UHV Technologies (UHV) to design, development, fabrication and filed test advanced plastic sorting equipment. Work would also include data analysis, pyrolysis conversion of plastics, and techno-economic and life cycle cost analysis.

UHV, at their corporate offices and laboratories in Fort Wayne, Indiana would lead a project team that would include Idaho National Laboratory (INL), the University of Illinois (UI), and Penn State.

UHV would design and fabricate a plastic sorting machine utilizing existing equipment. UHV and INL would then develop algorithms for testing the sorting machine. The sorting machine would be tested at UHV facilities, data analyzed, new algorithms developed, and re-tested, in an iterative process. All physical testing would occur at UHV, while INL would participate in data analysis and algorithm development. This work would include the use of approximately 3300 pounds of non-hazardous plastic materials. Non-hazardous plastic materials would be transported by vehicle from the Fort Wayne materials recovery facility to UHV laboratories. Work would include the handling of non-hazardous plastic materials around sorting equipment. Existing corporate health and safety procedures would be followed during all laboratory and sorting work.

Work at UI would include pyrolysis conversion of plastics. Work would include conversion of approximately 100 pounds of plastics within a pre-existing University laboratory. Work would utilize existing lab equipment. Work would necessarily include the handling of solvents and plastics. All work would follow existing University health and safety procedures.

Work at Penn State would be limited to conducting a techno-economic and life cycle cost analysis.

No new permits or facility modifications would be required for the proposed work. All wastes generated would be disposed of in accordance with local, State, and Federal regulations.

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, 07/02/2021](#)

**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.

A portion of the proposed action is categorically excluded from further NEPA review. The NEPA Provision identifies Topic Areas, Budget Periods, tasks, and/or subtasks that are subject to additional 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: 7/2/2021

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