

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



RECIPIENT: Michigan Technological University

STATE: MI

PROJECT TITLE: From Sorted MSW to Clean Syngas via Solvent Targeted Recovery and Precipitation (STRAP)

| | | | |
|--|--------------------------------------|----------------------------|-------------------|
| Funding Opportunity Announcement Number | Procurement Instrument Number | NEPA Control Number | CID Number |
| DE-FOA-0002946 | DE-EE0011111 | GFO-0011111-001 | GO11111 |

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 the Michigan Technological University (MTU) for the design, development, and testing of a continuous Process Development Unit (PDU) to recover municipal solid waste (MSW) using a solved base process. More specifically, the project employs a scale unit to convert sorted MSW into affordable biogenic feedstock and pure plastics via the Solved Targeted Recycling and Precipitation solved base process.

Project activities would occur at both prime and sub-prime purpose-built, preexisting facilities for the work to be conducted for this award. HVAC, fire system and electrical improvements would be performed prior to the start of project work. However, no modifications to existing facilities are occurring that would alter the footprint of the building. All activities would comply with existing federal, state, and local laws and regulations. No new permits or additional facility modifications would be required.

No field testing is taking place as all work will be conducted in dedicated laboratory space. Design, development, fabrication, and testing of the PDU and testing of biogenic material and plastic resins would take place at MTU's Advanced Power Systems Laboratories (Calumet, MI). Experiments involving the extraction and characterization of plastics from MSW would occur at the University of Wisconsin- Madison (Madison, WI). Preparation and characterization of MSW feedstock will take place at Idaho National Laboratory's Biomass Feedstock National Facility (Idaho Falls, ID). Presorting of feedstock and data collection will take place at Convergen Energy (Green Bay, WI), and gasification of biogenic material will take place at ThermoChem Recovery's (TRI) Advanced Development Center (Halethorpe, MD). Data analysis will be performed at USA Bioenergy (Scottsdale, AZ). And Amcor Innovation Center (Neenah, WI) will test plastic resins and produce plastic films at lab scale.

Project activities involve the use of flammable solvents that will be stored in appropriate containment cabinets and solid biogenic material used to produce syngas. All materials would be handled and disposed of using UW-Madison and TRI policies, which follow strict standards for handling chemical waste, including proper disposal in accordance with federal, state, and local regulations. Participants would adhere to proper health and safety policies and procedures including employee training and use of proper protective equipment to mitigate hazards to acceptable levels. Additional policies and procedures would be implemented as necessary if new health and safety risks are identified.

DOE has considered the scale, duration, and nature of proposed activities to determine potential impacts on resources, including those of an ecological, historical, cultural, and socioeconomic nature. DOE does not anticipate impacts on these resources which would be considered significant or require DOE to consult with other agencies or stakeholders.

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:

Solar Technologies Office (SETO)
NEPA review completed by James Cherry, 10/28/2024.

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: 10/30/2024

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: _____