

PMC-ND

(1.08.09.13)

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

**RECIPIENT:** University of Connecticut**STATE:** CT

PROJECT TITLE: A Digitalization, Automation, and Optimization Platform for Improved Resiliency and Consistency of Distributed Anaerobic Digestion for Wastewater Resource Recovery

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002366	DE-EE0009497	GFO-0009497-001	GO9497

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 is proposing to provide funding to the University of Connecticut (UConn) in support of a research and development project with the overall goal of optimizing of anaerobic digester operation. The project would be completed over three Budget Periods (BPs) with go/no-go decision points in at the end of BP1 and BP2.

During the project, a sensor array would be developed in a lab and tested at a commercial-scale anaerobic digester for the purposes of data collection and training for a machine learning algorithm-based control and optimization system. The array would be developed and built at UConn and tested at the Greater Lawrence Sanitary District (GLSD). BP1 activities would include assessing current control and monitoring approaches in anaerobic digesters, data collection, development of the array, initial development of a virtual test bed, and selection of a machine learning framework to be used in BP2. BP2 activities would include installing a sensor network at GLSD, data collection and training of the machine learning algorithm, and making improvements to the virtual test bed. BP3 activities would include demonstration of the machine learning algorithm at the virtual test bed and development of an action plan for implementation of machine learning algorithm-aided control system at GLSD.

All laboratory activities would take place in existing purpose-built facilities. All laboratory testing materials would either be disposed of through municipal solid waste, municipal wastewater, or through UConn Environmental Health & Safety chemical disposal. The installation of the sensor array at GLSD may pose health and safety hazards associated with release of biogas. To identify and mitigate these risks, UConn would develop a comprehensive installation plan that will be reviewed by a certified professional engineer prior to installation of the sensor array. Operation of the sensor array would not impact existing operations at GLSD. No new or modified permits would be required.

DOE does not anticipate adverse impacts to any resources of concern as a result of this project.

NEPA PROVISION

DOE has made a final NEPA determination.

Notes:

[Advanced Manufacturing Office](#)

[This NEPA Determination does not require a tailored NEPA provision.](#)

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: 8/10/2021

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: _____