

PMC-ND

(1.08.09.13)

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

**RECIPIENT:** University of South Florida**STATE:** FL**PROJECT****TITLE:** Intensified biogas conversion to value-added fuels and chemicals

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001916	DE-EE0008488	GFO-0008488-001	GO8488

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 University of South Florida (USF) to design, develop, and validate an intensified catalyst for the direct conversion of biogas to liquid fuels and value-added chemicals.

Associated activities would include data analysis, computer modeling, laboratory-based research on biogas conversion and catalyst development (R&D), design and fabrication of a modular bench-scale reactor, and deployment of the reactor and catalysts to an existing facility for a 100-hour pilot demonstration using a slipstream of commercially produced biogas from on-site anaerobic digesters (AD). Analysis, modeling, R&D, and fabrication activities would occur in dedicated university laboratories at USF (Tampa, FL). Additional catalyst characterization and reaction testing would occur at the National Renewable Energy Laboratory (NREL; Golden, CO).

Any work proposed to be conducted at a DOE laboratory may be subject to additional NEPA review by the cognizant DOE NEPA Compliance Officer for the specific DOE laboratory prior to initiating such work. Further, any work conducted at a DOE laboratory must meet the laboratory's health and safety requirements.

Business and technical information from their various biogas generation facilities would be provided by subrecipient Big Ox Energy for the purposes of selecting an operational site(s) for biogas sampling and equipment/process validation. Privately owned and operated Big Ox Energy sites at which project activities may occur include two commercial renewable energy plants (Denmark, WI and Dakota City, NE) and a rural farm digester (Riceville, IA). Sample-size quantities of bottled AD biogas (at least six cylinders with approximately 50 L internal volume or equivalent) generated by Big Ox Energy operations would be collected and delivered to project partners for use during preliminary R&D. End-of-project demonstration activities would be conducted entirely within previously developed, purpose-built space at one of the aforementioned facilities, none of which would require any physical modifications beyond the temporary installation of the prototype reactor. No change in the use, mission, or operation of existing facilities would arise out of these efforts. The recipients have all necessary permits in place to perform

project activities, and would not require any additional permits, licenses, and/or authorizations.

The proposed project would involve the use and handling of various hazardous materials, including metals and industrial solvents. All such handling would occur in properly equipped facilities dedicated to hazardous material management practices in compliance with Federal, state, and local environmental regulations. Existing health and safety policies and procedures would be followed, including employee training, proper protective equipment, engineering controls, monitoring, and internal assessments. USF is anticipated to produce chemical waste in the amount of approximately 3 kg/year. Project activities at NREL and Big Ox Energy combined would produce an estimated 1 kg/year of spent chemicals. These small quantities of waste generated by project activities would be collected by the responsible Environmental Health and Safety department for that respective facility and disposed of according to established guidelines.

NEPA PROVISION

DOE has made a final NEPA determination.

Include the following condition in the financial assistance agreement:

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.

Notes:

Bioenergy Technologies Office

This NEPA determination requires a tailored NEPA Provision.

NEPA review completed by Whitney Doss, 11/20/2018

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: _____



Casey Strickland

NEPA Compliance Officer

Date: 11/21/2018

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: _____