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



RECIPIENT: Water Environment and Reuse Foundation

STATE: VA

PROJECT TITLE : HYPOWERS: Hydrothermal Processing of Wastewater Solids

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001232	DE-EE0007969	GFO-0007969-001	GO7969

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Order 451.1A), 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 Water Environment and Reuse Foundation (WE&RF) to validate processes that convert wastewater solids into biofuels, and develop a detailed design and planning package for an integrated pilot scale hydrothermal processing system. This NEPA determination is for Phase 1 including both Budget Periods 1 and 2. If the recipient is selected to move forward into Phase 2, further NEPA review will be necessary once Phase 2 tasks are defined.

Activities associated with Phase 1 of the proposed project include design, data analysis, business planning, preliminary engineering, and research and development. Desktop design, analysis, and planning work would occur at existing offices of various subrecipients belonging to the Hydrothermal Processing of Wastewater Solids (HYPOWER) consortium led by WE&RF. Validation experiments involving bench scale conversion of wastewater sludge to biocrude oil and methane gas would be undertaken within the Bioprocess Science and Engineering Laboratory at Pacific Northwest National Laboratory (PNNL) in Richland, WA. Wastewater solids would be sourced from an existing wastewater treatment plant in the Central Contra Costa County Sanitary District in Martinez, CA. Small quantities of biocrude produced during Phase 1 of the proposed project would be tested by Tesoro Corporation, an established refiner of crude oil and other feedstocks into transportation fuels. The location has not yet been specified; however, the project would utilize one of Tesoro's existing purpose-built refineries in California. Biocrude oil produced by the project would represent only a fraction of one percent of the volume in the refinery and would consequently be treated in an on-site laboratory. Additionally, bench scale studies of liquid waste processing would take place in a dedicated research laboratory at California Polytechnic State University (CPSU) in San Luis Obispo, CA.

No change in the use, mission or operation of existing facilities would arise out of this effort. No fabrication or installation of new equipment would be performed during Phase 1. All facilities in which Phase 1 work would occur are designed for these types of activities; therefore, no modification or new permits, additional licenses and/or authorizations would be necessary. Emissions as a result of proposed Phase 1 activities at PNNL and the Tesoro refinery would be below permitted emission requirements for each site and processed with the required equipment and procedures to ensure continuous compliance.

Proposed activities would involve the use and handling of various hazardous materials including solvents, catalysts, metals, and high temperature/pressure equipment. All such work would occur in-lab following established health and

safety policies and procedures. The research and industrial facilities in which project work would occur have dedicated hazardous material management practices in compliance with pertinent federal, state, and local environmental regulations, and all employees would be trained in the proper use, storage, handling, and disposal of these materials. Project activities at the wastewater treatment plant would be subject to numerous strict existing regulations and procedures in place for this type of site.

Most of the materials used in Phase 1 activities would be consumed during the analytical processes. No siting, construction or major expansion of waste storage, disposal, recovery, or treatment actions/facilities would be required for Phase 1 activities. Project activities at CPSU would generate a minimal amount of acidic or basic waste that would be disposed of weekly in accordance with the existing university Environmental Health and Safety hazardous waste pick-up. PNNL would use up to 100kg of sterilized wastewater treatment sludges along with small amounts (~100g) of catalyst and other solvents (~1000ml). The experiments would produce up to 3L of biocrude. Non-hazardous waste would consist of small amounts of ash, residual sterilized sludge and wastewater which would be disposed of via standard PNNL practices.

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.

Based on the review of the proposal, DOE has determined the tasks in Phase 1 fit within the class of action(s) and the integral elements of Appendix B to Subpart D of 10 CFR 1021 outlined in the DOE categorical exclusion(s) selected above. DOE has also determined that: (1) there are no extraordinary circumstances (as defined by 10 CFR 1021.410 (2)) related to the proposal that may affect the significance of the environmental effects of the proposal; (2) the proposal has not been segmented to meet the definition of a categorical exclusion; and (3) the proposal is not connected to other actions with potentially significant impacts, related to other proposals with cumulatively significant actions, or an improper interim action. Phase 1 tasks are categorically excluded from further NEPA review.

NEPA PROVISION

DOE has made a conditional NEPA determination for this award, and funding for certain tasks under this award is contingent upon the final NEPA determination.

Insert the following language in the award:

You are restricted from taking any action using federal funds, which would have an adverse affect on the environment or limit the choice of reasonable alternatives prior to DOE/NNSA providing either a NEPA clearance or a final NEPA decision regarding the project.

Prohibited actions include:

Phase 2

This restriction does not preclude you from:

Phase 1 (includes all tasks and subtasks in Budget Periods 1 and 2)

If you move forward with activities that are not authorized for federal funding by the DOE Contracting Officer in advance of the final NEPA decision, you are doing so at risk of not receiving federal funding and such costs may not be recognized as allowable cost share.

Insert the following language in the award:

You are required to:

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.

Note to Specialist :

Bioenergy Technologies Office

This NEPA determination requires tailored NEPA Provision.

NEPA review completed by Whitney Doss, 05/02/2017

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:



Casey Strickland

Date:

5/2/2017

NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

Field Office Manager review required

NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON:

- Proposed action fits within a categorical exclusion but involves a high profile or controversial issue that warrants Field Office Manager's attention.
- Proposed action falls within an EA or EIS category and therefore requires Field Office Manager's review and determination.

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____
Field Office Manager

Date: _____