

FMC-ND

(1.08.09.13)

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

**RECIPIENT:** The Ohio State University**STATE:** OH**PROJECT TITLE** : Biomass Gasification for Chemicals Production Using Chemical Looping Techniques

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
USDA-NIFA-9008-004957	DE-EE0007530	GFO-0007530-001	

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 Ohio State University (OSU) to design, construct and operate a 10 kilowatt-thermal (kWth), commercially scalable, sub-pilot Biomass to Syngas (BTS) system and complete a comprehensive techno-economic analysis of the BTS process using methanol production as an example.

The proposed project activities would include the design, modeling, development, fabrication and in-lab testing of an advanced biomass conversion to chemicals process using the chemical looping technique. The design, testing and development activities would occur at OSU research facility on campus in Columbus, OH. Fabrication would be completed by a licensed fabricator experienced with constructing chemical looping reactor systems. System engineering analyses and economic assessments would be performed at Nexant's offices in San Francisco, CA. All facilities utilized in the proposed project are pre-existing and purpose-built for the type of activities being proposed; therefore, no adverse impacts to sensitive resources are expected as a result of the proposed project. No change in the use, mission or operation of existing facilities would arise out of this effort. The facilities have all applicable permits in place, and would not need additional permits for the proposed activities.

The proposed project would necessitate the handling of hazardous product gases (CO) from the gasification of biomass. Non-sparking induction fans would drive and dilute the produced gases from the sub-pilot testing to be emitted to atmosphere away from test facility. Gas area detectors would be incorporated in the facility with safety protocols/system interlocks in place to terminate system operations if combustible and/or hazardous gases are detected. Wastes produced would be limited to standard office waste and packaging materials which would be disposed of through normal municipal waste streams, and metal oxides which would be disposed of by the University environmental health and safety office.

Based on the review of the proposal, DOE has determined the proposal fits within the class of action(s) and the integral elements of 10 CFR 1021 subpart B 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. This proposal is categorically excluded from further NEPA review.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:


If the Recipient intends to make changes to the scope or objective of this project, the Recipient is required to contact the Project Officer, identified in Block 15 of the Assistance Agreement before proceeding. The Recipient must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved. If the Recipient moves forward with activities that are not authorized for Federal funding by the DOE Contracting Officer in advance of a final NEPA decision, the Recipient is doing so at risk of not receiving Federal funding and such costs may not be recognized as allowable cost share.

Note to Specialist :

Bioenergy Technologies office
This determination does not require a tailored NEPA provision.
Review completed by Rebecca McCord, 08/15/2016

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:

 Electronically Signed By: Kristin Kerwin
NEPA Compliance Officer

Date: 8/29/2016

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: