PMC-ND
(1.08.09.13)

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

RECIPIENT: Virent, Inc **STATE:** WI

PROJECT TITLE: FRACTIONAL MULTISTAGE HYDROTHERMAL LIQUEFACTION OF BIOMASS AND CATALYTIC CONVERSION INTO HYDROCARBONS

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000812	DE-EE0006286	GFO-0006286-001	GO6286

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.)
B5.15 Small-scale renewable energy research and development and pilot projects	Small-scale renewable energy research and development projects and small-scale pilot projects, provided that the projects are located within a previously disturbed or developed area. Covered actions would be in accordance with applicable requirements (such as local land use and zoning requirements) in the proposed project area and would incorporate appropriate control technologies and best management practices.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to Virent, Inc. to research and develop an improved multistage process for the hydrothermal liquefaction of biomass to feed into Virent's catalytic technology producing water soluble, partially deoxygenated intermediates that are ideally suited for catalytic processing to distillate hydrocarbons. Virent would demonstrate, at laboratory-scale, the conversion of biomass feedstocks (pine wood chips and pre-converted corn stover) to drop-in hydrocarbon distillate fuels using a multi-stage fractional conversion system that is integrated with Virent's BioForming® process. DOE funding would be used for data analysis, computer modeling, life cycle and techno-economic analyses, project management and laboratory-scale research and development activities, focusing mainly on the liquefaction, at laboratory-scale, of biomass feedstock.

Funding would be used over two Budget Periods with a Stage Gate Review and Go/No-Go funding decision by the DOE prior to Budget Period 2.

Primary research and development activities, including the design, fabrication, and operation of a prototype liquefaction system, the pre-conversion of feedstocks and the laboratory-scale production hydrocarbons, would occur at Virent's research and development laboratory facility located at 3571 Anderson St., Madison, Wisconsin.
The proposed activities are typical of work performed at Variants facility. Minor modifications to facility utilities would be required to fabricate and operate the prototype systems. Virent completed an environmental questionnaire addressing the protocols for laboratory and facility safety, risk management, chemical handling and waste disposal. The facility complies with standard safety procedures and all processes and procedures are monitored by appropriate staff. The facility has all applicable permits in place, and would not need additional permits for the proposed activities. All handling and disposal of gases, chemicals, wastes and liquid effluents comply with appropriate regulations.

Additionally, DOE's Idaho National Laboratory (INL) would support Virent through feedstock procurement, preparation and pre-processing activities at INL's facility in Idaho Falls, Idaho. All work completed at DOE National Laboratories may be subject to additional NEPA review by the appropriate DOE NEPA Compliance Officer.

Based on review of the project information and the above analysis, DOE has determined the proposed research and development activities would not have a significant individual or cumulative impact to human health and/or environment. DOE has determined the proposed project is consistent with actions contained in DOE categorical exclusions A9 "information gathering, analysis and dissemination," and B5.15 "small-scale renewable energy research and development and pilot projects" and 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 you intend to make changes to the scope or objective of your project you are required to contact the Project Officer identified in Block 11 of the Notice of Financial Assistance Award before proceeding. You must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved.

Note to Specialist :

This NEPA Determination does not require a tailored NEPA provision.

Obadiah Broughton 8/28/2013

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Electronically Signed By: Lori Gray Date: 8/29/2013

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: _____ Date: _____

Field Office Manager