

PMC-EF2a

(20102)

**U.S. DEPARTMENT OF ENERGY
EERE PROJECT MANAGEMENT CENTER
NEPA DETERMINATION**



RECIPIENT: Virent, Inc.

STATE: WI

PROJECT TITLE : Catalytic Upgrading of Thermochemical Intermediates to Hydrocarbons

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000467	DE-EE0005357	GFO-0005357-001	EE5357

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.

Rational for determination:

DOE is proposing to provide federal funding to Virent, Inc. (Virent) to conduct laboratory scale research and development activities intended to develop an integrated process that converts lignocellulosic feedstock into hydrocarbons.

The scope of work would include computer modeling, fundamental research and development, process development, techno-economic analysis and project management. Work under this project would occur at Virent's facilities in Madison, Wisconsin and two research and development farms owned and operated by Iowa State University (ISU) near Ames, Iowa.

Lab work would be conducted within Virent's facilities located at 3551 and 3571 Anderson Street, Madison, Wisconsin 53704. Both facilities are located at the intersection of US Highway 51 and 151. The surrounding area includes commercial businesses, a local technical college and apartment housing. Virent has completed an R&D questionnaire addressing the protocols for laboratory safety, risk management, chemical handling and waste disposal. Virent complies with standard laboratory safety procedures. Labs are inspected by Virent's Environmental, Health and Safety (EH&S) Department. All applicable permits are in place to conduct research on site including:

- Air pollution control permit exemption per s. NR 407.03, Wis. Adm. Code: Permit Exemption No: 113355440-XOI.
- Non-contact cooling water permit per Wisconsin Pollutant Discharge Elimination System, WPDES: Permit Number: WI-0044938-5.
- City of Madison Hazardous Materials License, License Number: 82920.
- Department of Transportation, Hazardous Materials Certificate of Registration, Registration Number: 030111-550-011RT
- Registration permits for all storage tanks/vessels used for the proposed research are maintained.
- Environmental Protection Agency (EPA), TSCA Registration: Not required as the proposed project will be designated as research and development only. No commercial sales are planned.

Techno-economic and life cycle analyses would be developed at two existing ISU agricultural research centers including the Agricultural Engineering and Agronomy Research Farm and the BioCentury Research Farm (BCRF). Both facilities are part of the ISU Research and Demonstration farms located at the intersection of US Highway 30 and U-Avenue, in Boone County, Iowa. The surrounding area consists of agricultural land.

The scope of work for ISU would consist of growing, harvesting, collecting, storing and pre-processing corn stover, one of the three feedstocks that would be used. ISU uses standard approved GMO corn hybrids that are planted, stored and handled in accordance with their respective labels, and standard agricultural production practices and regulations. Two additional feedstocks would be delivered and analyzed including loblolly pine forest harvest residuals from commercial paper supply chains and sugar cane bagasse. The total amount of each variety of feedstock over the life of the project would be less than 1 ton (1 pound for the first year, 100 pounds for the second year and 1,000 pounds for the third year).

ISU has completed an R&D questionnaire addressing the protocols for laboratory safety, risk management, chemical handling and waste disposal. ISU complies with standard laboratory safety procedures. Labs are inspected by University EH&S staff and campus safety personnel. Lab wastes are collected by EH&S and managed at the Regulated Materials Facility on the ISU campus before they are shipped to the Treatment, Storage and Disposal Facility. ISU has all applicable permits in place to conduct research. ISU maintains the following permits:

- EPA Title 5 air operating permit
- Emission point specific air construction permits
- Tier II stormwater permit
- Pretreatment agreement with the local, publically-owned treatment works

The proposed project activities would create low level emissions of agricultural dust air pollutants below the thresholds for agriculture. Almost all operations would be in an open agricultural environment and emissions during grinding operations would be controlled and monitored to maintain these conditions below explosion and exposure limits during operations.

Based on this information, DOE has determined the work outlined is consistent with activities identified in categorical exclusion A9 (information gathering, analysis and dissemination) and B3.6 (small-scale research and development, laboratory operations and pilot projects).

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

Cristina Tyler 6.4.2012

DOE Funding: \$4,000,000

Cost Share: \$3,281,094

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____
 Lori Gray / *Lori Gray* Date: 6/13/2012
 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