

PMC-ND

(1.08.09.13)

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



RECIPIENT: Cargill, Incorporated

STATE: MN

PROJECT TITLE: Production of High Performance Lubricants from Cellulosic Sugar

| | | | |
|--|--------------------------------------|----------------------------|-------------------|
| Funding Opportunity Announcement Number | Procurement Instrument Number | NEPA Control Number | CID Number |
| DE-FOA-0000974 | EE0007007 | GFO-0007007-002 | |

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 Cargill, Inc. to develop engineered microorganisms and bioprocesses that convert cellulosic sugars to caprylate methyl or ethyl esters for the production of high-performance biolubricants.

The proposed project activities would include the design and development of bacterial strains and fermentation processes to convert sugars to caprylate methyl or ethyl esters. Strain development would include enzyme engineering and genetic engineering of the strains, but would not include genetically modifying organisms as defined by the EPA and 40CFR725. These activities would all be undertaken at Cargill's Biotechnology research and development (R&D) laboratories; first in Excelsior, MN and Minnetonka, MN and finishing in Plymouth, MN.

The proposed project would involve the use and handling of various hazardous materials, including small volumes of acids, bases, biological agents (level 1), and industrial solvents. All such handling would occur in-lab and existing corporate health and safety policies and procedures would be followed including employee training, proper protective equipment, engineering controls, monitoring, and internal assessments. All hazardous materials would be managed in accordance with federal, state, and local environmental regulations.

The proposed project is expected to generate non-hazardous solids (garbage, trash, etc.) which would be disposed of through a local waste management company and small amounts of effluent waste which would be discharged into the sanitary sewer. Non-hazardous waste fermentation broth would be neutralized prior to discharge to the sanitary sewer. The proposed project may also generate small volumes of hazardous waste that would need to be collected and transported to an offsite disposal facility. The Minnetonka and Excelsior facilities already generate small volumes of hazardous waste and have provided the required notifications to Hennepin County Environmental Hazardous Waste Department, which could result in a change to current hazardous waste license. The Plymouth location would notify the Hennepin County Environmental Waste Department at startup to determine the appropriate license for the facility as a whole before operations begin. The Minnetonka and Excelsior locations already have agreements/permits in place with the Metropolitan Council. The Plymouth location would notify the Metropolitan Council before startup to ensure all agreements and licenses/permits are in place before operations begin. No siting, construction or major

expansion of waste storage, disposal, recovery, or treatment actions/facilities would be required.

Based on review of the project information and the above analysis, DOE has determined the research, development and testing 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 B3.6 "small-scale research and development, laboratory operations 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:

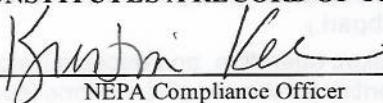
If you intend to make changes to the scope or objective of your project you are required to contact the Project Officer identified in Block 11 of the Notice of Financial Assistance Award before proceeding. You must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved.

Note to Specialist :

Bioenergy Technologies Office
This NEPA determination does NOT require a tailored NEPA provision.
Review completed by Rebecca McCord 10/19/2015

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:


NEPA Compliance Officer

Date: 10/20/15

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: