

PMC-EF2a

(20402)

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



**RECIPIENT:** University of North Dakota Energy & Environmental Research Center

**STATE:** ND

**PROJECT TITLE :** Center for Biomass Utilization 2010

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
CDP	DE-FG36-08GO88054	GFO-08-124-003	GO88054

**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 (including, but not limited to, literature surveys, inventories, audits), data analysis (including computer modeling), document preparation (such as conceptual design or feasibility studies, analytical energy supply and demand studies), and dissemination (including, but not limited to, document mailings, publication, and distribution; and classroom training and informational programs), but not including site characterization or environmental monitoring.
- B3.6** Siting, construction (or modification), operation, and decommissioning of facilities for indoor bench-scale research projects and conventional laboratory operations (for example, preparation of chemical standards and sample analysis); small-scale research and development projects; and small-scale pilot projects (generally less than two years) conducted to verify a concept before demonstration actions. Construction (or modification) will be within or contiguous to an already developed area (where active utilities and currently used roads are readily accessible).
- B5.1** Actions to conserve energy, demonstrate potential energy conservation, and promote energy-efficiency that do not increase the indoor concentrations of potentially harmful substances. These actions may involve financial and technical assistance to individuals (such as builders, owners, consultants, designers), organizations (such as utilities), and state and local governments. Covered actions include, but are not limited to: programmed lowering of thermostat settings, placement of timers on hot water heaters, installation of solar hot water systems, installation of efficient lighting, improvements in generator efficiency and appliance efficiency ratings, development of energy-efficient manufacturing or industrial practices, and small-scale conservation and renewable energy research and development and pilot projects. The actions could involve building renovations or new structures in commercial, residential, agricultural, or industrial sectors. These actions do not include rulemakings, standard-settings, or proposed DOE legislation.

**Rational for determination:**

The University of North Dakota (UND) Energy & Environmental Research Center (EERC) proposes to use DOE funding to demonstrate the feasibility of converting biomass into alternative forms of energy.

UND proposes to use DOE funds for:

- Activity 1) Small-scale biomass conversion
- Activity 2) Pilot-scale conversion of Biomass to Fuels
- Activity 3) Project Management, Educational Activities, Outreach, and Strategic Studies
- Activity 4) Fuels of the Future Research and Development Laboratory.

This NEPA determination applies to Activities 1, 3, and 4 only. There is insufficient information available to complete the NEPA review for Activity 2 at this time. The recipient will submit an additional EF-1 for review by DOE when additional information is available.

The activities that this NEPA determination applies to would be conducted at the University of North Dakota Energy & Environmental Research Center in Grand Forks, Grand Forks County, North Dakota.

The existing EERC laboratory has established safety, laboratory procedure, chemical storage, and waste disposal procedures. UND operates under an air permit issued by the NDDH and has a written agreement with the local public treatment facility to receive and treat any discharge wastewater. All emissions and particulates generated from the gasification process would be thermally oxidized prior to discharge through an existing stack. Activity 1 includes three projects: 1) Pilot-Scale Gasification of Spent Diatomaceous Earth Filter Media 2) Biomass Gasification Demonstration Project 3) Promoting Standardization for Biofuels Characterization. All 3 projects would be conducted at the EERC Laboratory.

The pilot-scale gasification of Dichotomous Earth would be conducted using either an entrained-flow or circulating fluidized bed gasification test system operating at a feed input of 5-20 lb/hr. Testing the fundamental aspects of handling, processing, and gasifying DE in pilot-scale systems would be carried out in an effort to determine the

potential for this resource as a renewable power fuel.

The demonstration project involves the pilot-scale gasification of corncobs, wheat straw and, possibly other biomass feedstock to determine the proper operating parameters and scale-up options for utility-scale power generation.

The standardization for biomass characterization project involves evaluating current standards and test methods, establishing appropriate test methods and analysis routines for biomass characterization, and promoting the standardization among industry.

#### Activity 3- Project Management, Educational Activities, Outreach, and Strategic Studies

The project management responsibilities include managing all the technical, financial, and administrative components of this project. The outreach involves dispersing the research results through presentations at various conferences and workshops. The strategic study involves attending conferences, DOE meetings, and communicating with research groups to plan effective research and studies.

#### Activity 4- Fuels of the Future Research and Development Laboratory.

The activity would involve constructing additional laboratory space to the NCHT facility in a previously disturbed site that consists of office, laboratory, and pilot plant facilities. Rough drawings of the building addition would be prepared; permissions and permits from university and local officials would be obtained; architects and contractors would be selected using a bidding process; and completion of the building addition.

After a review of the proposed site, there is anticipated to be no impact to cultural resources because the site is previously disturbed by earlier construction activities. Visual impacts would be minimal as the newly proposed building would blend in with the existing campus and laboratory facilities. Moreover, there are no existing wetlands or water ways within the buildings area of potential effect.

This project comprises indoor bench-scale research projects and conventional laboratory operations therefore is categorically excluded from further NEPA review under CX B5.1, Actions to Conserve Energy, A9, Information Gathering, and CX B3.6, Siting, construction (or modification), operation, and decommissioning of facilities for indoor bench-scale research projects and conventional laboratory operations (for example, preparation of chemical standards and sample analysis); small-scale research and development projects; and small-scale pilot projects (generally less than two years) conducted to verify a concept before demonstration actions. Construction (or modification) would be within or contiguous to an already developed area (where active utilities and currently used roads are readily accessible).

#### 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:

Activity 2 - Pilot-scale conversion of Biomass to Fuels

This restriction does not preclude you from:

Activity 1 - Small-scale biomass conversion

Activity 3 - Project Management, Educational Activities, Outreach, and Strategic Studies

Activity 4- Fuels of the Future Research and Development Laboratory

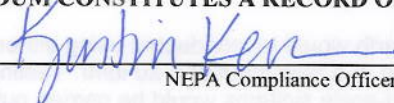
If you move forward with activities that are not authorized for federal funding by the DOE Contracting Officer in advance of the final NEPA decision, you are doing so at risk of not receiving federal funding and such costs may not be recognized as allowable cost share.

Note to Specialist :

Eugene Brown 11/19/2010

**SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.**

NEPA Compliance Officer Signature:

  
NEPA Compliance Officer

Date:

11/19/2010