

PMC-EF2a

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



RECIPIENT: University of Nebraska Board of Regents

STATE: NE

PROJECT TITLE : Second Generation Biofuels: Carbon Sequestration and Life Cycle Analysis

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
CDP	EE0003149	GFO-10-595	0

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).
- B3.1** Onsite and offsite site characterization and environmental monitoring, including siting, construction (or modification), operation, and dismantlement or closing (abandonment) of characterization and monitoring devices and siting, construction, and associated operation of a small-scale laboratory building or renovation of a room in an existing building for sample analysis. Activities covered include, but are not limited to, site characterization and environmental monitoring under CERCLA and RCRA. Specific activities include, but are not limited to:

Rational for determination:

DOE is proposing to provide funding to the recipient for research activities that focus on determining the impact of maize residue removal on (a) carbon sequestration, (b) water use efficiency and (c) life cycle analysis of total greenhouse gas (GHG) emissions. This information is essential for determining whether second-generation biofuel producers using maize residue feedstock meet GHG emissions standards specified in the 2007 Energy Independence and Security Act (EISA).

Research would be conducted in two production size (about 50ha) fields of irrigated maize that are part of the University of Nebraska Agricultural Research and Development Center in Mead NE. This research center has previously been used for agricultural research. Residue will be removed from one field and not the other. Regional residue removal practices will be the basis for developing experimental procedures for residue removal. The following concurrent measurements would be made in both fields:

- (a) CO₂ flux will be measured year-round. Critical weather, soil and plant variables would also be monitored;
- (b) fluxes of water vapor and energy would be measured year-round; and
- (c) fluxes of N₂O and CH₄ will also be monitored. Data from flux measurements along with other relevant information would be used to determine life cycle GHG emissions.

Activities to be completed as part of this project include administration and reporting, standard laboratory analysis, and environmental monitoring. As such, CX A9, CX B3.6, and CX B3.1 apply.

NEPA PROVISION

Note to Specialist :

None Given.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Kristin Kerwin
NEPA Compliance Officer

Date: 8/25/2010