

PMC-EF2a

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



RECIPIENT: Plant Science Dept., South Dakota State Univ.

STATE: SD

PROJECT TITLE : Intensifying the corn-soybean rotation with the use of winter rye grown for biomass energy production.

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
CDP	GO88073	GFO-GO88073-034	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:

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.

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.

B3.8 Outdoor terrestrial ecological and environmental research

Outdoor terrestrial ecological and environmental research in a small area (generally less than 5 acres), including, but not limited to, siting, construction, and operation of a smallscale laboratory building or renovation of a room in an existing building for associated analysis. Such activities would be designed in conformance with applicable requirements and use best management practices to limit the potential effects of any resultant ground disturbance.

Rational for determination:

DOE is proposing to provide funding to the Department of Plant Science, South Dakota State University to perform crop rotation experiments designed to enhance biofuel biomass feedstock production as well as minimize the intrusion of biofuel feedstock crops into food cropland. The project would entail annual planting of winter rye on fields that also support a spring soybean planting and summer corn planting. Three growing sites located in northern South Dakota, southeastern South Dakota, and southern Illinois would be used to represent a more to less stressful winter growing season gradient to demonstrate the effect of varying conditions on winter rye production.

This project would be conducted as three, sequential, one-year phases used to determine the effect of each of the three crops on successive plantings.

Success of known plant varieties based on growing/biomass production under variable conditions would be used to identify successful plant types. No GMOs would be used. The three experimental crop fields are:

- 1) 5 acres at the SDSU Northeast Research Farm (15710 455th Ave. South Shore, SD 57263),
- 2) 3 acres at the SDSU Southeast Research Farm (29974 University Road Beresford, SD 57004),
- 3) 1.5 acres at the Adaptive Management Research (333 Junction Falls Road Creal Springs, IL 62922).

All field sites have recently been cultivated for corn, wheat, or soybean production. EPA registered pesticides will be used according to label instructions if needed for weed and pest control during the course of the field trials. Pesticide applications would be performed by licensed personnel. Standard practices for production of these crops will be followed.

Five threatened or endangered species could occur on or in the vicinity of the three growing sites. The United States Fish and Wildlife Service (USFWS) lists the endangered Indiana bat as occurring in Williamson County, IL, the location of the Adaptive Management Research (AMR) site. Air photography of this location was reviewed to determine if likely wood lots or other forested acreage used for summer Indian bat roosting and brooding were proximate to the growing site. The nearest likely area would be 0.5 mile from the AMR site; therefore growing site activities at AMR would not adversely affect Indiana bats.

The threatened piping plover, and endangered least tern and Topeka shiner are listed as occurring in Clay County, SD where the three acre SDSU Southeast Research Farm (SDSUSRF) growing site near Beresford would be located. This growing site would not impact critical habitat or have habitat features used by piping plover or least tern. The endangered Topeka shiner is known to occur in the Vermillion River within four straight-line miles of the SDSUSRF growing site. The SDSU Northeast Research Farm near South Shore, SD is located within the range of the shiner, but is not located near any known populations. Thus, the project would not have an adverse effect on these species.

The threatened Western prairie fringed orchid is listed as having occurred in Clay County, however it is not currently known to occur there and no habitat exists at the growing site. As a result this species would not be adversely affected.

No prime agricultural land would be changed or converted as a result of this research.

The National Register of Historic Places does not list any cultural or historic features on or near the three growing sites. All the acreages that would be used are disturbed by multiple years of agricultural cultivation, therefore continued use as cropland would not affect cultural resources.

Physical/Chemical analyses of soils and biomass would be performed using standard techniques in the field and at the SDSU Plant Sciences laboratory. No hazardous waste would be generated as a result of this research. Laboratory work would be performed applying SDSU physical and chemical hazard safety procedures and conform to OSHA standards.

DOE has determined that project comprises small-scale renewable energy and outdoor ecological research in a small area that would not result in any permanent change to the ecosystem, and conventional laboratory analysis. CX B3.8, B5.15 and B3.6 apply.

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 :

John DuWaldt 11-23-2011

DOE Funding: \$248,697
Cost Share: \$ 65,225
Total Funding:\$313,922

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:  Date: 11/23/2011
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