

PMC-EF2a

(20102)

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



RECIPIENT: South Dakota State University

STATE: SD

PROJECT TITLE : Developing Gas Stripping, Catalytic Fast Pyrolysis Conversion of Corn Stover to Drop-In Quality Hydrocarbons, Electrophoretic Deposition of Biochar Nanoparticle based Films for Energy Storage

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
	DE-FC36-08GO88073	GFO-GO88073-001	GO88073

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:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to South Dakota State University (SDSU) to fund three sub-awards under the Sun Grant Initiative titled, "Regional Biomass Feedstock Development Partnership". The Sun Grant Initiative facilitates communication and partnership development between universities, national laboratories, federal and state governments, the private sector and public interest groups to lead the nation towards a renewable, sustainable, domestic energy industry. The three research and development projects are as follows:

- 1) Developing Gas Stripping - Adsorption/Desorption Separation Processes based on Porous Carbon Adsorbents for Biofuel Purification from Bioreactors
- 2) Electrophoretic Deposition of Biochar Nanoparticle based Films for Energy Storage
- 3) Catalytic Fast Pyrolysis Conversion of Corn Stover to Drop-In Quality Hydrocarbons

DOE funding would be used to develop a highly efficient and selective gas stripping-adsorption/desorption separation platform for purifying advanced biofuels and chemicals from biochemical processing streams. Funding would be used to verify the feasibility of an electrophoretic deposition scheme to produce biochar nanoparticle based supercapacitors for energy storage applications. Funding would also be used to develop a thermochemical process to convert lignocellulosic feedstocks into liquid fuels and/or fuel additives.

Project #1 would be conducted within the bioenergy and biomaterials laboratories in the Department of Agricultural and Biosystems Engineering (ABE) at SDSU, located in Brookings, South Dakota. These laboratories are equipped with thermochemical conversion capabilities, wet-lab capabilities, a fume hood, pressure air and vacuum lines. High-purity deionized and reversed osmosised water systems are also available in these laboratories. Project #2 would be conducted within the Microelectronics Laboratory at SDSU. Project #3 would be conducted within the Agricultural Engineering Building at SDSU. The university has completed an R&D questionnaire addressing the protocols in place for laboratory safety, risk management, chemical handling and waste disposal. The facility complies with standard laboratory safety procedures and labs are inspected by university staff and safety personnel. The university operates under all applicable permits to conduct research.

Based on the review of the project information and the above analysis, DOE has determined the research and development 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

exclusion 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:

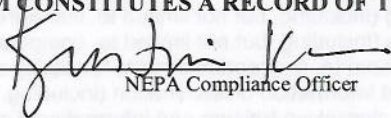
If you intend to make changes to the scope or objective of your project you are required to contact the Project Officer identified in Block 11 of the Notice of Financial Assistance Award before proceeding. You must receive notification of approval from the DOE Contracting Officer prior to commencing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

Note to Specialist :

Kelly Daigle 5/7/2013

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____


NEPA Compliance Officer

Date: _____

5/9/2013

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: _____