PMC-EF2a
(2.04.02)

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

RECIPIENT: Texas Engineering Experiment Station **STATE:** TX

PROJECT TITLE : Lignocellulosic Biofuels from New Bioenergy Crops

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-EE0003135	GO88075	GFO-08-053-002	GO88075

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:

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:

This project is a renewal of an existing project that received a CX 5.1 for tasks of the current SOPO. The tasks under the original project were to develop, grow, harvest, and process high-tonnage energy crops (mainly sorghum) into advanced bio-fuels. The test plots are located on an existing Texas A&M Research Farm, about 10 miles west of College Station, TX. Biochemical conversion (microbial and oligimerization processes) will be conducted at a pilot plant located at the Texas A&M University Services Building in College Station, TX.

All tasks of this project are the same as they were on the in the previous SOPO. However, a few sub-tasks have been added or modified (tasks 2.3, 2.5, 2.7, 2.8, 2.9, and 5.4) and these sub-tasks are detailed below:

Task 2.3: Form modules from harvested sorghum and evaluate storage abilities. Results from project year 2 showed that the redesigned packages were successful in maintaining an anaerobic environment during storage, but the dry matter density achieved did not meet the goal of 15 dry matter lbs/ft3. The goal is to form packages that maintain integrity during extended storage, and will withstand rigors of handling and transport

Task 2.5: Develop alternative methods of forming biomass modules. The use of the modified cotton module builder is suitable for proof of concept determination, but will not be an acceptable approach for large scale operations. An alternative that can form modules continuously during harvest is desired. The following activities will be undertaken to identify appropriate design principles for such a mechanism. The goal is to develop the design principles that will support machines for continuous formation of biomass modules during harvest.

Task 2.7: Determine field efficiency and capacity for machine operations with the sorghum crop (goal is to characterize costs of all potential operations for sorghum in Texas conditions)

Task 2.8: Assess the influence of field storage on quality and quantity of biomass available. Experiences in project year 2 demonstrated lodging of the crop began in late October/early November timeframe. As the crop was allowed to stand in the field and experience weathering, the lodging became more severe, but with the loss of leaves, the performance of the harvesting machines actually improved. Further data collection under these conditions is necessary to establish the reasons for this phenomenon. The harvested biomass was reduced with increased weathering, but the potential cost per harvested ton may not be decreasing. The goal is to evaluate performance of harvest alternatives and the cost of delivered biomass under weathered conditions.

Task 2.9: Remote sensing assessment of energy sorghum yield. Management of biomass feedstock supply chains will require real time estimates of the biomass present in fields. A cooperative program will provide both multi-band aerial images and ground truth measurements of biomass. The goal is to predict sorghum yield from remotely sensed images.

Task 5.4 Investigation of the feasibility of integrating the Gasification/Pyrolysis Process into the overall MixAlco process.

The pilot plant and all of the work will occur at Texas A&M's Texas Engineering Experiment Station in College Station, TX. All Texas A&M safety protocols have been published and will be followed. All gases, chemicals, liquid effluents, toxic waste will be disposed of by the Universities Health & Safety Office. None of the biomass used will be genetically modified. Lastly, there are no operation permits required to run the pilot plant and the pilot plant will not emit a significant amount of air pollutants.

In addition to the Texas Engineering Experiment Station conducting work, a subcontractor, Texas AgriLife Research, will conduct work alongside of Texas Engineering Experiment Station. Both of these entities are members of the Texas A&M University system and follow the same safety protocol.

All work will be conducted in existing facilities with appropriate procedures in place; therefore this action is categorically excluded from further NEPA review under CX B3.6, Siting/construction/operation/decommissioning of facilities for bench scale research, conventaional laboratory operations, small scale research, and development and pilot projects, and B5.1, Actions to Conserve Energy.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

None Given.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Electronically Signed Date: 8/25

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