

PMC-EF2a

(200402)

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



RECIPIENT: ZeaChem Inc

STATE: OR

PROJECT TITLE : High Yield Hybrid Cellulosic Ethanol Process Using High-Impact Feedstock for Commercialization by 2013

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000096	EE0002880	GFO-0002880-001	EE2880

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).
- 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.

Rational for determination:

This NEPA determination is for BP2 activities. BP1 activities were reviewed previously and categorically excluded from additional NEPA review.

DOE and cost share funds would be used to design, construct, and operate the "Boardman Project." The Boardman Project consists of the design, construction and operation of two standalone processing units. One unit would convert biomass to a fermentable sugar solution (chemical fractionation) and the other would convert carboxylic esters to ethanol (hydrogenolysis). The intent is for one unit to be installed at front end of the ZeaChem Core Facility and the other unit would be installed at the back end of the Core process. The Boardman Project, together with ZeaChem's Core Facility, would constitute an integrated cellulosic ethanol biorefinery capable of producing ethanol and other co-products from cellulosic materials utilizing patented chemical, thermal and biological processes.

DOE has determined that the ZeaChem Core Facility has independent utility apart from the DOE funded portions of the project. Therefore, this NEPA determination evaluates the incremental difference in environmental impacts between the construction and operation of the Boardman Project (chemical fractionation and hydrogenolysis) and the baseline, which is the ZeaChem Core Facility.

ZeaChem Inc. has obtained all of the permits required for construction and operation of the both the Core Facility and the Boardman Project. The proposed site is located within and existing agricultural/industrial park. The site is currently being used for the construction of the Core Facility. The combined facility will be modularized with sections being assembled off-site and brought to the site on trucks as complete process units. Surface disturbance associated with the Boardman Project would be minimal, and would be adjacent to areas already disturbed due to the Core Facility construction.

The combined facility would produce ethanol at a rate of 250,000 gallons per year (gpy) from 10 BDT per day of cellulosic materials consisting primarily of hybrid poplar wood chips from a nearby tree farm. Switchgrass and sorghum campaigns are also planned.

Utilities that would otherwise support the Core Facility will be adequate to supply the DOE funded portions of the project as well. Supplies of water, electricity, natural gas and wastewater disposal are all within the capacity of the providers without modification.

ZeaChem has consulted with the Oregon SHPO. The SHPO concurs that there will be no impact to cultural resources as a result of the combined projects.

The site is not within the 100 year floodplain and contains no wetlands. The previously disturbed site would not provide wildlife habitat. Per USFWS, are no threatened or endangered species found in Morrow County. Vehicle access to the Boardman Project site would be via Rail Loop Drive, a two-lane asphalt road designed by the Port of Morrow to accommodate industrial traffic within the Port's industrial park. The roads in the industrial park acan accommodate additional traffic created by the Boardman Project.

The duration of the Boardman Project is three years, with an engineering, procurement and construction period of 14 months, and an operational period of 22 months. After the completion of the operational phase, the most likely option for decommissioning is to re-purpose the facility for the production of bio-based propylene under an agreement with private (non-federal) investors.

The Boardman Project constitutes a small-scale pilot project and will include construction within and contiguous to an already developed area where utilities and currently used roads are readily accessible. Therefore CX B3.6 applies. The project also includes final design tasks and project management activities. Therefore CX A9 also applies.

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: _____

Kymber Kern
NEPA Compliance Officer

Date: _____

10/14/2010

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: _____