PMC-ND
(1.08.09.13)

U.S. DEPARTMENT OF ENERGY
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
NEPA DETERMINATION

RECIPIENT: Arizona State University **STATE:** AZ

PROJECT TITLE: A Novel Platform for Algal Biomass Production Using Cellulosic Mixotrophy

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001320	DE-EE0007562	GFO-0007562-001	

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.
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.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to Arizona State University (ASU) to demonstrate stable outdoor mixotrophic cultivation at volumetric productivities near 1.0 g/L-day.

Activities associated with the proposed project would include the design, development, fabrication and field testing of advanced algal cultivation systems adapted to mixotrophic cultivation requirements. These activities would be completed by ASU from their AzCATI (Arizona Center for Algae Technology and Innovation) testbed site and the adjacent lab on campus in Mesa, AZ. Additional laboratory activities in support of the field testing include small-scale culturing, analytical assays for biomass characterization, media preparation, biochemical extractions and microscopy. Laboratory cultivations and analyses of resulting biomass for metabolites and proteins produced would be completed at New Mexico State University (NMSU) in Las Cruces, NM. In-lab physiological investigations to evaluate composition and traits would be undertaken by Heliae, Inc. from their commercial facilities in Gilbert, AZ. Computational modeling of data would be completed by Colorado State University (CSU) and modeling for techno-economic analysis would be completed by the National Renewable Energy Lab (NREL) in Golden, CO. All facilities utilized in both lab work and field studies are pre-existing and purpose-built for the type of activities being proposed; therefore, no adverse impacts to sensitive resources are expected as a result of the proposed project. No change in the use, mission or operation of existing facilities would arise out of this effort. The facilities have all applicable permits in place, and would not need additional permits for the proposed activities.

The proposed project would not necessitate the use or handling of any hazardous materials, nor would any hazardous wastes be produced. Culture pH values are no lower than that of carbonated beverages, and culture liquids would be neutralized prior to discharge in accordance with federal, state and local regulations. Laboratory studies would generate solid wastes disposed of through normal municipal waste streams. Aqueous solutions from analytical

experiments would be disposed of using the local municipal wastewater treatment system. No siting, construction or expansion of waste storage, disposal, recovery, or treatment actions/facilities would be required.

Based on the review of the proposal, DOE has determined the proposal fits within the class of action(s) and the integral elements of 10 CFR 1021 subpart B outlined in the DOE categorical exclusion(s) selected above. DOE has also determined that: (1) there are no extraordinary circumstances (as defined by 10 CFR 1021.410(2)) related to the proposal that may affect the significance of the environmental effects of the proposal; (2) the proposal has not been segmented to meet the definition of a categorical exclusion; and (3) the proposal is not connected to other actions with potentially significant impacts, related to other proposals with cumulatively significant actions, or an improper interim action. This proposal 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 the Recipient intends to make changes to the scope or objective of this project, the Recipient is required to contact the Project Officer, identified in Block 15 of the Assistance Agreement before proceeding. The Recipient must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved. If the Recipient moves forward with activities that are not authorized for Federal funding by the DOE Contracting Officer in advance of a final NEPA decision, the Recipient is doing so at risk of not receiving Federal funding and such costs may not be recognized as allowable cost share.

Insert the following language in the award:

You are required to:
Any work proposed to be conducted at a DOE laboratory may be subject to additional NEPA review by the cognizant DOE NEPA Compliance Officer for the specific DOE laboratory prior to initiating such work. Further, any work conducted at a DOE laboratory must meet the laboratory's health and safety requirements.

Note to Specialist :

Bioenergy Technologies office
This determination requires a tailored NEPA provision.
Review completed by Rebecca McCord, 08/25/2016

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 8/29/2016
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