

PMC-ND
(1.08.09.13)

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



RECIPIENT: MicroBio Engineering, Inc.

STATE: CA

PROJECT TITLE : Integrated Low Cost and High Yield Microalgal Biofuel Intermediates Production

| | | | |
|--|--------------------------------------|----------------------------|-------------------|
| Funding Opportunity Announcement Number | Procurement Instrument Number | NEPA Control Number | CID Number |
| DE-FOA-0001471 | DE-EE0007691 | GFO-0007691-001 | |

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 MicroBio Engineering, Inc. to develop improved algal strains that produce high oil or high carbohydrate algal biomass, and to study the combining of auto- and mixo-trophic production in open ponds for increased annual production of biofuel intermediates.

The proposed project activities would involve in-lab investigations and field studies. Initial validations and project management (Tasks 1 and 2) and techno-economic and levelized cost analyses (Task 4) would be completed by MicroBio Engineering from their offices in San Luis Obispo, CA. Outdoor cultivations (Task 3) would be completed by CalPoly at their Algae field station also in San Luis Obispo. Strain selection, isolation and characterization (Task 5) would be undertaken by Cal Poly from their university laboratories in San Luis Obispo. Processing, fermentation, and conversion of biomass (Tasks 6 and 7) would be completed by Sandia National Laboratories (SNL) in Albuquerque, NM. Conversion and evaluation of residuals (Task 8) would be completed by Pacific Northwest National Laboratories (PNNL) from their facilities in Richland, WA. Outdoor study and evaluation of mixotrophic productivity (Task 9) and optimization of culture management strategies and processes (Task 10) would be undertaken by Heliae Development, LLC from their facilities in Gilbert, AZ. 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 necessitate the use and handling of various hazardous laboratory reagents including solvents and metals. All such handling will occur in-lab and would be managed in accordance with federal, state, and local environmental regulations. The Cal Poly Algae Field Station is co-located at the San Luis Obispo Water Reclamation Facility. As such, health hazards would include exposure to wastewater, slips, trips and falls. A safety manual is in force at the site and personnel would receive regular training to minimize site risks. Wastes produced as

a result of the proposed activities would be limited to wastewater which would be discharged to existing municipal wastewater treatment facilities. 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.

Note to Specialist :

Bioenergy Technologies office
This determination does not require a tailored NEPA provision.
Review completed by Rebecca McCord, 08/15/2016

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____

Electronically Signed By: Lori Gray / *Lori Gray*
NEPA Compliance Officer

Date: 8/18/2016

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: _____