

PMC-ND

(1.08.09.13)

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

**RECIPIENT:** Global Algae Innovations**STATE:** CA

PROJECT TITLE: Scale-up of novel drying and extraction unit operations

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002023	DE-EE0009259	GFO-0009259-001	GO9259

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Policy 451.1), 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 funding to Global Algae Innovations (GAI) to complete a research and development project aimed at the advancing algae biofuel production. This project would be completed over three budget periods (BPs) with a go/no-go decision point at the end of BP1 and BP2. BP1 would include initial verification activities to validate baseline data, project targets, and process information and the development of a techno-economic analysis (TEA) and life-cycle analysis (LCA). BP2 would include design, procurement, installation, and initial operations of the engineering-scale drying and extraction unit. BP3 would include operation of the drying and extraction unit and products testing.

Proposed project activities would include laboratory testing, modeling and analysis, algae biomass production, design, procurement, installation and operation of an engineering-scale drying and extraction process, product testing, and project management and reporting. GAI would validate data and process claims presented in the original application at Kauai Algae Lab (Lihue, HI) and develop a TEA and LCA. The TEA and LCA would be updated throughout the project. GAI would cultivate algae strains (for use throughout the project) at the Kauai Algae Facility (KAF), an algae cultivation and processing facility (Lihue HI). GAI would design, procure, install, and initially operate an engineering scale drying and extraction system at KAF. Trailers or containers would house the system

and be placed on existing concrete slabs adjacent to the harvester. Trailers/containers would have utilities to support the equipment. GAI would operate the system in test runs lasting up to 8 hours to evaluate and refine performance. Following the initial testing, a 100-hour test run would be completed for a total of approximately 500 hours of testing. GAI would send algae oil to Neste Oil (Kulloo, Finland) for testing and conversion to other products including feed and fuel. GAI would send algae meal and omega-3 oil to Zeigler Brothers Inc. (Berlin, PA) and Zeigler Aquaculture Research Laboratory (Fort Pierce, FL) for analysis and feed suitability. GAI would send unsaturated oil to Algenesis Materials (La Jolla, CA) for analysis, conversion, and testing. GAI would also send samples of algae oil or algae meal to universities, national laboratories, and companies if requested.

All potential worker health and safety hazards (standard to the type of work proposed) would be mitigated by following existing university and corporate environmental, health, and safety processes and procedures. Installation of a trailer or container at KAF is not anticipated to result in adverse impacts to sensitive resources, as installation would occur on existing concrete pads and no ground disturbance would be required. No new permits are anticipated, however, if algae strains are imported to Hawaii, APHIS permits would be obtained. Materials that would be used (including water, commercial fertilizers, and laboratory chemicals) and produced (diesel and jet fuel, algae oils, and algae meal) as a result of the proposed project would be consistent (in content and quantity) with current operations at each facility. Air emissions associated with the project are anticipated to be minimal. All wastes (hazardous and non-hazardous) produced because of this project would be stored and disposed of in accordance with existing processes. Aquaculture activities at the Zeigler Aquaculture Research Laboratory would take place in a coastal zone. All aquaculture conducted at the Zeigler Aquaculture Research Laboratory would follow Florida Aquaculture Department best management practices to minimize and mitigate environmental impacts. Small quantities of wastewater would be produced during the project and would be disposed of appropriately.

All work would be completed in existing, purpose-built facilities (including analytical and aquaculture laboratories, an algae cultivation and processing facility, and industrial sites). The proposed project would require only minor modification to existing facilities and would not result in a change in the use, mission, or operation of any facilities. DOE does not anticipate adverse impacts to any resources of concern as a result of the proposed project. Work proposed to be conducted at a federal facility may be subject to additional NEPA review by the cognizant federal official and must meet the applicable health and safety requirements of the facility.

NEPA PROVISION

DOE has made a final NEPA determination.

Notes:

Bioenergy Technologies Office (BETO)

This NEPA determination does not require a tailored NEPA provision
NEPA review completed by Jonathan Hogue, 08.18.2021

FOR CATEGORICAL EXCLUSION DETERMINATIONS

The proposed action (or the part of the proposal defined in the Rationale above) fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D. To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10 CFR Part 1021, Subpart D, Appendix B.

There are no extraordinary circumstances related to the proposed action that may affect the significance of the environmental effects of the proposal.

The proposed action has not been segmented to meet the definition of a categorical exclusion. This proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

DOE has determined that work to be carried out outside of the United States, its territories and possessions is exempt from further review pursuant to Section 5.1.1 of the DOE Final Guidelines for Implementation of Executive Order 12114; "Environmental Effects Abroad of Major Federal Actions."

The proposed action is categorically excluded from further NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:  _____ Date: 8/18/2021
NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

- Field Office Manager review not required
- Field Office Manager review required

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____ Date: _____
Field Office Manager