

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



**RECIPIENT:** Global Algae Innovations

**STATE:** CA

**PROJECT TITLE :** Direct Air Capture Algae Cultivation

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-0002396	DE-EE0009758	GFO-0009758-001	GO9758

**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:

<b>A9 Information gathering, analysis, and dissemination</b>	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.)
<b>B3.6 Small-scale research and development, laboratory operations, and pilot projects</b>	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.
<b>B5.15 Small-scale renewable energy research and development and pilot projects</b>	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.
<b>B5.16 Solar photovoltaic systems</b>	The installation, modification, operation, and removal of commercially available solar photovoltaic systems located on a building or other structure (such as rooftop, parking lot or facility, and mounted to signage, lighting, gates, or fences), or if located on land, generally comprising less than 10 acres 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 build and operate the first raceways of a planned pilot-scale algaculture facility in the proximity of Shandon, CA. Activities would not involve the building or operation of the planned facility at full-scale.

DOE has not previously completed any NEPA Determinations (NDs) for this specific award, but DOE previously completed a NEPA Determination (ND) (FOA-0002396-001; A9, B3.6; 5/20/2021) for Funding Opportunity Announcement (FOA) DE-FOA-0002396. The ND for the FOA applies to initial verification activities for awards issued under the FOA, including this award (DE-EE0009758). Initial verification activities for this award would include verification of data and assumptions from the initial award application to establish baseline metrics necessary to determine relative success of subsequent award activities.

Award activities would involve the building of algae raceways (approximately 4 acres total) and supporting infrastructure, including concrete pads, access (gravel) roads, a small-scale solar photovoltaic system, and concrete structures to support raceway pumps. Such activities would involve site preparation activities including excavation (up to approximately 4 feet in depth) and grading. All activities would occur on existing agricultural land in the proximity of Shandon, CA. The raceways and supporting structures would have a total footprint of approximately 8 acres. While

the activities would occur on prime farmland, the facility would continue to support agricultural activities and the characteristics of the facility and methods of its construction are considered to have a negligible impact on the long-term viability of the land for continued agricultural use. Any additional activities with federal involvement, either as part of this award or another proposed federal action, to modify or expand on the facility would require additional NEPA review.

Equipment supporting algae production and harvesting would be procured, installed, and tested. After verification of properly functioning equipment and supporting infrastructure, GAI would produce algae for approximately twelve months. Algae produced during that period would be evaluated and analyzed in a temporary mobile support trailer that would be installed at the site. Algae production activities would consume approximately 6 million liters of water per year. The water consumption is expected to have no effect on water resources of the area as GAI would offset the consumption by proportionally reducing other agricultural cultivation activities that depend on the same water resources.

Additional award activities would include those of an intellectual, academic, and analytical nature. Such activities would support the completion of a techno-economic analysis (TEA).

Award activities would involve the operation of heavy machinery, equipment, and vehicles. Award activities would involve the handling and use of hazardous materials, including commercial fertilizers (approximately 1000 kg). All such handling and storage would occur within controlled settings and would follow existing policies and procedures for handling and disposal of these materials. All organisms used for this award would fall under the lowest risk categories concerning individual and public health as described by federal agencies, i.e. Biosafety Level 1 (BSL-1) or Risk Group 1 (RG1). Existing corporate health, safety, and environmental policies and procedures would be followed at all facilities, including: personnel training, proper personal protective equipment (PPE), engineering controls, monitoring, and internal assessments. All necessary permits would be acquired prior to starting relevant activities.

DOE completed informal consultation with the U.S. Fish and Wildlife Service (FWS) per Section 7 of the Endangered Species Act (ESA) to determine potential impacts on federally listed species and critical habitats. DOE received a letter of concurrence (LOC) from FWS (06/24/2022) stating their concurrence that the award activities would not likely adversely affect listed species or critical habitats, but the concurrence is contingent on conservation measures being properly implemented by all award participants. The conservation measures that would be implemented are described in the LOC.

DOE has considered potential impacts on resources, including those of an ecological, historical, cultural, and socioeconomic nature. DOE does not anticipate adverse impacts on these resources.

## **NEPA PROVISION**

DOE has made a final NEPA determination.

Include the following condition in the financial assistance agreement:

All award participants must implement and adhere to the conservation measures described in the U.S. Fish and Wildlife's letter of concurrence dated June 24th, 2022.

Notes:

Bioenergy Technologies Office (BETO)

This NEPA determination requires legal review of the tailored NEPA provision.

NEPA review completed by Dan Cahill, 06/27/2022.

## **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.

The proposed action is categorically excluded from further NEPA review.

**SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.**

NEPA Compliance Officer Signature:  **Electronically Signed By: Casey Strickland** Date: **6/28/2022**  
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