

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



RECIPIENT: Arizona State University

STATE: AZ

PROJECT TITLE: Secretome Effects on Algal Media and Grazing "SEAMAG"

| Funding Opportunity Announcement Number | Procurement Instrument Number | NEPA Control Number | CID Number |
|---|-------------------------------|---------------------|------------|
| DE-FOA-0002910                          | DE-EE0011060                  | GFO-0011060-001     | GO11060    |

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. |

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide funding to Arizona State University (ASU) to test the effects of media composition and recycling on the secretome during algae cultivation using known infectious agents with established pest models. The award aims to identify triggers that result in reduced productivity and culture crashes with the goal to increase the mean time to failure and maintain or increase productivity in algal cultures relative to the baseline.

Award activities would consist of mostly laboratory work. However, outdoor tests on an algal test bed would occur at Arizona Center for Algae Technology and Innovation (AzCATI) – ASU in Mesa, AZ. AzCATI – ASU would perform indoor award activities at two dedicated laboratory facilities in Mesa, AZ and Tempe, AZ. These activities include small scale (less than 15 Liters) algae cultivation experimentation. New Mexico State University (Las Cruces, NM) would run chemical analyses using laboratory techniques to access how various abiotic and biotic factors influence aspects of algae cultivation. Laboratory-scale cultivation in flasks and environmental photobioreactors would occur at Los Alamos National Laboratory (LANL; Los Alamos, NM). Lastly, Harmon Consulting Inc. (Waimea, HI) and Lucendi, Inc. (Los Angeles, CA) would perform office work at their respective locations. All facilities are preexisting purpose-built facilities for the type of work to be conducted for this award. Facility modifications would not be required.

Award activities would involve typical hazards associated with laboratory work, including handling and use of solvents, compressed gases, and hazardous chemicals. Outdoor work proposed at the AzCATI – ASU Mesa, AZ location would involve much of the same hazards with addition to the operation of machinery. Biological hazards are also expected due to the use of algal pests. The algal pests identified for the award only include Risk Group 1 organisms which do not pose a health hazard. However, if any Risk Group 2 organisms are identified they would either be handed at the appropriate biosafety level or destroyed. If pest agents isolated at other locations need to be shipped for award purposes, ASU is required to obtain a permit from the U.S. Department of Agriculture's Animal and Plant Health Inspection Service. All hazardous biological wastes would either be sterilized by bleach or autoclave before disposal. Existing health, safety, and environmental policies and procedures would be followed to mitigate hazards to acceptable levels. Mitigated hazards would pose negligible risks to the public and environment. All activities would comply with existing federal, state, and local laws and regulations.

DOE has considered the scale, duration, and nature of proposed activities to determine potential impacts on resources, including those of an ecological, historical, cultural, and socioeconomic nature. DOE does not anticipate

impacts on these resources which would be considered significant or require DOE to consult with other agencies or stakeholders.

Any 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.

Include the following condition in the financial assistance agreement:

If pest agents isolated at other locations need to be shipped for award purposes, ASU is required to obtain a permit from the U.S. Department of Agriculture's Animal and Plant Health Inspection Service.

Notes:

Bioenergy Technologies Office (BETO)  
This NEPA determination requires legal review of the tailored NEPA provision.  
NEPA review completed by Corrin MacLuckie, 3/14/2024.

**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:  \_\_\_\_\_ Date: 3/15/2024  
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: \_\_\_\_\_