

PMC-ND

(1.08.09.13)

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



RECIPIENT: University of California, San Diego

STATE: CA

PROJECT TITLE: Biomolecular Films for Direct Air Capture of CO₂

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
0002203	EE0009275	GFO-0009275-001	

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.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide funding to the University of California at San Diego (UCSD) to complete computational modeling, and algal strain engineering and production for enhanced carbon dioxide capture and suitable fuel production. UCSD would also complete a techno-economic analysis for the proposal.

UCSD would oversee the project and a variety of project partners. UCSD would complete computational modeling and data analysis which would lead to the production of a genome scale metabolic model. The model, would then be used to inform research efforts at the National Renewable Energy Lab (NREL) in Golden, CO. NREL would engineer algae strains in the laboratory and grow algae in preexisting indoor algae grow facilities. Resultant recombinant proteins and catalyst would then be transferred from NREL to Gross-Wen Technologies in Salter, IA for larger scale (800 liters) growth in preexisting indoor algae grow facilities. Finally, biomass generated through growth at Gross-Wen would be transferred to Algix, Inc. in Meridan, MS where laboratory scale research would be conducted to utilize the biomass for bioplastic production. The project would utilize approximately 13,000 liters of algal cultivation and result in the production and use of approximately 20 pounds of algae biomass to be used in bioplastic production.

No new facilities, modifications to facilities, or new permits would be required. All work would take place at preexisting facilities designed to conduct the type of work being conducted at those facilities. Activities would include the use of solvents as well as laboratory scale equipment. All project partners would adhere to existing corporate or University health and safety practices for all aspects of work. Personal Protective Equipment would be utilized as appropriate. All research would be laboratory or bench scale, while production at Gross-Wen could include small pilot scale production in 800 liter growth systems. All waste would be disposed of in compliance with local, State and Federal regulations as well as corporate waste management policies.

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.

Notes:

Bioenergy Technology Office

This NEPA determination does not require a tailored NEPA provision.

Review completed by Roak Parker, 01/20/2021

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.

The proposed action is categorically excluded from further NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:



NEPA Compliance Officer

Date: 1/21/2021

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:

Field Office Manager

Date: