

PMC-ND

(1.08.09.13)

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

**RECIPIENT:** Montana State University**STATE:** MT

PROJECT TITLE: High pH/High Alkalinity Cultivation for Direct Atmospheric Air Capture and Algae Bioproducts

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
	EE0009273	GFO-0009273-001	

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 Montana State University (MSU) to develop approaches to improve algal cultivation performance in relation to productivity, biomass quality, and CO₂ capture.

MSU will lead a research team that includes MSU, the University of Toledo (UT), Clemson University (Clemson), the University of North Carolina (UNC) and the Ford Research and Innovation Center. After an initial verification of technical merits MSU would conduct work on improving the cultivation performance in relation to productivity, biomass quality, and CO₂ capture. This would include growing algal strains in a variety of conditions and under a variety of regimes. All algae growth would occur at MSU and UT in preexisting raceways designed for algae growth. These are small scale raceways that are currently utilized for algae production. Laboratory scale analysis of algae would also occur at MSU and UT in existing University laboratory facilities. Conditions and regimes of growth in raceways would be adapted based on analysis of algae.

Laboratory scale conversion of algae to bio-oil, and additional test and analysis on those products, would occur at Clemson. This would be completed at the Clemson Composite Center utilizing existing laboratory equipment. In addition, the utilization of the algal bio-oil for foam production and analysis would be completed at the Ford Research Center.

Work would also include computer modeling, information gathering and analysis, techno-economic analysis, and life cycle cost analysis.

All work involving the growing of algae would occur in preexisting raceways. All laboratory work would occur in preexisting laboratories. Work would involve the use and handling of various hazardous materials, including solvents, acids, and base, as well as the utilization of research equipment such as raceways. All work would be completed in compliance with approved safety and mitigation procedures at all facilities, including employee training, proper protective equipment, engineering controls, monitoring, and internal assessments. No new facilities or modifications to facilities, or permits would be required. No groundbreaking activities would occur. All hazardous and nonhazardous materials will be properly disposed of in compliance with local, state, and federal regulations. Cultivation medium would be sterilized prior to disposal.

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, 01/13/2021

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: 1/14/2021

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: _____