

PMC-ND
(1.08.09.13)

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



RECIPIENT: NREL

STATE: CO

PROJECT TITLE : NREL-20-003b ASU Algae Cultivation Trials - Mesa, AZ.doc

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
	DE-AC36-08GO28308	NREL-20-003B	GO28308

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:

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's (DOE) National Renewable Energy Laboratory (NREL) proposes to enter into a subcontract for an approximately 5-year period with Arizona State University (ASU) to cultivate algal and cyanobacterial strains at the Arizona Center for Algae Technology and Innovation (AzCATI) at the Polytechnic Campus of ASU in Mesa, AZ. The purpose of the project is to collect data that would be used to model production and conversion cost calculations for the production of algal based biofuels. Over the 5-year period, NREL would assign various tasks to ASU for completion, including algae cultivation in different permutations (configurations of ponds), species of algae, varying pond sizes, and preparation of seed cultures using photobioreactors.

DOE completed a NEPA Determination (ND) for a previous project titled "ASU Algae Cultivation – Mesa, AZ"; NEPA Control No. 20-003. The ND was signed by the DOE NEPA Compliance Officer on October 22, 2019. NREL is proposing to subcontract with ASU for additional scopes of work that are related to the original project.

At AzCATI, ASU researchers would first develop seed cultures and then would scale-up the cultures in existing outdoor ponds that are used for algae cultivation. Seed cultures would be prepared either in the laboratory or in photobioreactors (10-150L), which are located indoors in a greenhouse. Various outdoor ponds would be used to grow the cultures at different scales; mini-ponds range from 400-1000L and large ponds go up to 10,000L. AzCATI researchers would monitor the pond ecology for predators or other biotic and abiotic factors impacting growth and biomass quality. Once cultivated, biomass samples would be collected. The biomass samples would be freeze dried before they are sent to NREL in Golden, CO for compositional analysis.

Spent cultivation media from indoor and outdoor experiments would be disposed of per ASU EH&S and local/state regulations. No permits would be needed to dispose of this waste stream. Small quantities of hazardous waste would also be produced; these wastes would be collected and disposed of in accordance with ASU's hazardous waste program requirements. Similarly, waste generated at NREL would be managed and disposed of in accordance with the Waste Management and Minimization program.

All activities performed to support the proposed project would occur in existing AzCATI and NREL facilities that perform such work, and no new equipment or infrastructure would be needed to support the experiments. No change in the use, mission, or operation of existing facilities would result from the proposed project.

There would be no anticipated direct or indirect environmental or health and safety impacts due to the work. Existing AzCATI safety and biosafety policies and procedures would be followed, including safe handling of organisms, proper waste disposal, and the use of employee personal protective equipment.

NEPA PROVISION

DOE has made a final NEPA determination.

Include the following condition in the financial assistance agreement:

Notes:

NREL
Nicole Serio, 12/19/2019

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: Lisa Jorgensen Date: 12/19/2019
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