

PMC-ND
(1.08.09.13)

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



RECIPIENT: University of Washington

STATE: WA

PROJECT TITLE: Developing multi-gene CRISPRa/i programs to accelerate DBTL cycles in ABF hosts engineered for chemical production

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002029	DE-EE0008927	GFO-0008927-001	GO8927

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 is proposing to provide federal funding to the University of Washington to complete a research and development project to develop multi-gene CRISPRa/i programs to accelerate Design-Build-Test-Learn (DBTL)cycles in Agile BioFoundry (ABF) consortium hosts engineered for chemical production. The project would be completed over three Budget Periods (BP).

The proposed research and development activities will include molecular biology, microbial strain engineering, microbial culture, microbial fermentation, multi-omics analysis and computational modeling. Laboratory-scale research and development activities would take place at University of Washington (UW) laboratory facilities in Seattle, WA and in Pacific Northwest National Laboratory (PNNL) facilities in Richland, WA. No experimental work would be performed outside controlled laboratory facilities. The work at Lawrence Berkeley National Laboratory (LBNL) in Berkeley, CA would be computational, with no experimental laboratory component.

All wastes produced through the project would be standard to research and development already being performed at the UW and PNNL facilities. These activities would produce non-hazardous garbage, primarily from packaging, disposable laboratory glass and plastic wear, semi-solid media, and biomass from microbial cultures. Liquid wastes would be produced in the forms of buffers and chemicals used for molecular biology and analysis as well as liquid media from culture growth and fermentation. All waste would be disposed in accordance to State, County and City requirements along with the relevant UW and PNNL standards.

Non-pathogenic strains of *P. putida*, *C. glutamicus*, *Z. mobilis*, *B. subtilis*, and *S. elongatus* will be engineered using standard molecular biology techniques. The recipient would follow all relevant University, state, DOE, and US regulations to ensure the safe handling of these materials, including appropriate training, PPE, and controlled access to the laboratory spaces and reagents. At the end of the project, unwanted biological materials would be treated, autoclaved, and then disposed in the appropriate UW and PNNL biological waste streams.

There would be no physical modifications to the existing facility; no new construction; no ground disturbing activities; no change to use, mission or operation of the existing facility; no installation or deployment of equipment outdoors at The University of Washington (UW), Pacific Northwest National Laboratory (PNNL), or Lawrence Berkeley National Laboratory (LBNL). No new permits, licenses or authorizations would be required. 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 Technologies Office

This NEPA Determination does not require a tailored NEPA provision.

K Kerwin 1/6/2020

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: 1/6/2020

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: _____