



U.S. Department of Energy Categorical Exclusion Determination Form

Submit by E-mail

Proposed Action Title: University of California, Los Angeles (UCLA) - CUSB: A Platform Technology for the Renewable Production of Commodity Chemicals

Program or Field Office: Advanced Research Projects Agency - Energy (ARPA-E)

Location(s) (City/County/State): Los Angeles, CA; Santa Monica, CA

Proposed Action Description:

Funding will support the project team's small-scale, research and development activities to develop cell-free enzyme systems for the continuous production of isobutanol and terpenes from input sugars. Specifically, the project team will (1) stabilize isobutanol production enzymes; (2) stabilize enzymes in terpene build module; (3) implement full isobutanol and terpene production systems; and (4) mock up production systems in bioreactor and test continuous production. If successful, the project will implement enzyme systems that can operate continuously for a week or more, converting sugars into biofuels and commodity chemicals with high yield and high productivity.

Project activities will be conducted at existing facilities designed for the applicable activities at University of California, Los Angeles (Los Angeles, CA) and Provivi, Inc. (Santa Monica, CA). Project tasks will be conducted in accordance with established safety and materials/waste management protocols and pursuant to applicable Federal, State, and local regulatory requirements. All facility modifications will comply with applicable federal, state, and local permitting requirements.

Categorical Exclusion(s) Applied:

B3.6 - Small-scale research and development, laboratory operations, and pilot projects

For the complete DOE National Environmental Policy Act regulations regarding categorical exclusions, including the full text of each categorical exclusion, see Subpart D of [10 CFR Part 1021](#).

Regulatory Requirements in 10 CFR 1021.410(b): (See full text in regulation)

The proposal 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 proposal that may affect the significance of the environmental effects of the proposal.

The proposal 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.

Based on my review of the proposed action, as NEPA Compliance Officer (as authorized under DOE Order 451.1B), I have determined that the proposed action fits within the specified class(es) of action, the other regulatory requirements set forth above are met, and the proposed action is hereby categorically excluded from further NEPA review.

NEPA Compliance Officer:

Date Determined: 11/30/2016



U.S. Department of Energy

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Proposed Action Title: University of California, Los Angeles - CUSB: A Platform Technology for the Renewable Production of Commodity Chemicals

Program or Field Office: Advanced Research Projects Agency - Energy

Location(s) (City/County/State): Los Angeles, CA

Proposed Action Description:

UCLA proposes to conduct laboratory based, small-scale, research and development activities to demonstrate that bioreactors consisting of cell-free biochemical pathways can be built to operate continuously and convert sugars into other useful chemicals. Specifically, UCLA will build a system that can produce gram quantities of terpenoids in high yield via continuous operation of an enzyme bioreactor for several days. Project work involves preparing recombinant plasmids in *E. coli* for protein expression in *E. coli*. All project work, including work with genetically engineered organisms or recombinant DNA, will take place in existing research laboratories at UCLA and will comply with applicable local, state, and federal regulations and procedures -- including the NIH Guidelines for Research Involving Recombinant DNA Molecules. All hazardous materials, solid wastes, and liquid wastes will be managed and disposed of pursuant to UCLA's established EH&S procedures and in accordance with applicable local, state, and federal regulations and procedures.

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Based on my review of the proposed action, as NEPA Compliance Officer (as authorized under DOE Order 451.1B), I have determined that the proposed action fits within the specified class(es) of action, the other regulatory requirements set forth above are met, and the proposed action is hereby categorically excluded from further NEPA review.

NEPA Compliance Officer:

Date Determined: 02/23/2015