U.S. Department of Energy
Categorical Exclusion Determination Form

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Proposed Action Title: (0470-1540) North Carolina State University - Jet Fuel from Camelina Sativa: A Systems Approach

Program or Field Office: Advanced Research Projects Agency - Energy

Location(s) (City/County/State): Raleigh, NC

Proposed Action Description:
Funding will support development of genetically modified (GM) camelina that produces more oil than natural camelina and produces terpenes in the valves and seed coats of the plant. Funding will also support development of catalysts for transforming the oil and terpenes produced by GM camelina into jet fuel.

Proposed work will consist of (1) laboratory-based genetic modification of E. coli and camelina; (2) indoor growth of the resulting GM camelina plants in contained growth chambers and greenhouses; (3) laboratory-based analysis of the resulting GM E. coli and GM camelina plants using standard techniques; and (4) laboratory-based testing and analysis of catalysts for converting oil and terpenes into jet fuel using a bench-scale fixed bed reactor and computer modeling techniques. This project will not involve field testing with GM plants.

All proposed work will take place at the North Carolina State University (NCSU) campus in Raleigh, NC. NCSU will carry out all activities involving recombinant DNA molecules, GM microorganisms, and GM plants in accordance with the NIH Guidelines for Research Involving Recombinant DNA Molecules. NCSU will receive approval from its Institutional Biosafety Committee prior to beginning work with recombinant DNA molecules.

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: Matt Dunn

Date Determined: 11/23/2011