



U.S. Department of Energy Categorical Exclusion Determination Form

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Proposed Action Title: University of Illinois at Urbana-Champaign - Engineering Hydrocarbon Biosynthesis and Storage Together with Increased Photosynthetic Efficiency in the Saccharinae

Program or Field Office: Advanced Research Projects Agency - Energy

Location(s) (City/County/State): Urbana, IL; Gainesville, FL; Durham, NC

Proposed Action Description:

Funding will support the project team's small-scale, research and development activities to continue to develop and introduce genes into transgenic sweet sugarcane that are expected to increase photosynthetic activity and to allow vegetative accumulation of oil in plants. Specifically, the project team proposes to (1) generate additional sugarcane lines and characterize their photosynthetic activity, biomass yields, cold tolerance, and light absorption; (2) perform field trials to generate a second set of field data to provide confidence about the transgenic plants' performance; and (3) test the most promising lines in a phenotyping facility, measuring various traits daily in a controlled environment.

The project team has been issued permits by the U.S. Department of Agriculture's Animal and Plant Health Inspection Service's (APHIS) for small field trials (approximately 1 acre) of transgenic sugarcane. The project team must secure an interstate movement permit from APHIS prior to transferring the transgenic sugarcane between facilities in Florida, Illinois, and North Carolina.

Project activities will be conducted at existing facilities that are designed for the applicable activities, and will be conducted in accordance with applicable Federal, State, and local safety and environmental requirements. Participants will receive and maintain all required authorizations for all work involving recombinant DNA molecules and GM plants prior to beginning work with these materials.

Categorical Exclusion(s) Applied:

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

B3.8 - Outdoor terrestrial ecological and environmental research

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: 02/03/2016



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Proposed Action Title: University of Illinois at Urbana-Champaign - Engineering Hydrocarbon Biosynthesis and Storage Together with Increased Photosynthetic Efficiency into Saccharinae

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

Location(s) (City/County/State): Urbana, IL; Upton, NY; Gainesville, FL; Lincoln, NE; Citra, FL

Proposed Action Description:

The University of Illinois at Urbana-Champaign (UIUC), in conjunction with Brookhaven National Laboratory, University of Florida at Gainesville, and University of Nebraska-Lincoln, aims to develop sweet sorghum and sugarcane with increased photosynthetic productivity and cold tolerance, capable of synthesizing and accumulating lipids in place of sucrose. Laboratory and greenhouse-based tasks for this effort qualified for a categorical exclusion in October 2013, while outdoor field trials for transgenic sugarcane in Florida qualified for a categorical exclusion in March 2014. This determination covers outdoor field trials for transgenic sorghum plants that were not previously excluded from additional NEPA review.

Transgenic sorghum plants will be transported securely from laboratory facilities at the University of Nebraska-Lincoln in Lincoln, NE to laboratory facilities at UIUC in Urbana, IL and, subsequently, to a dedicated agricultural field research site in Champaign County, IL. The sorghum will be planted in a defined area of 0.25 acres surrounded by unplanted alleys that span at least 25 feet. The objective of the field trial is to assess the phenotypic performance of transgenes in sorghum. Field trials are expected to take place sporadically through the end of 2015. Special precautions will be implemented to ensure the contained transportation, release, and growth of transgenic sorghum in this project. The U.S. Department of Agriculture's Biotechnology Regulatory Services issued a standard interstate movement and release permit for the proposed field trials in May 2015.

Categorical Exclusion(s) Applied:

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

B3.8 - Outdoor terrestrial ecological and environmental research

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:06/08/2015



U.S. Department of Energy Categorical Exclusion Determination Form

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Proposed Action Title: University of Illinois at Urbana-Champaign--Engineering Hydrocarbon biosynthesis and storage together with increased photosynthetic efficiency in the Saccharinae

Program or Field Office: Advanced Research Projects Agency-Energy

Location(s) (City/County/State): Urbana, IL; Upton, NY; Gainesville, FL; Citra, FL; Lincoln, NE

Proposed Action Description:

University of Illinois at Urbana-Champaign (UIUC), in conjunction with Brookhaven National Laboratory, University of Florida at Gainesville, University of Nebraska-Lincoln, aims to develop sweet sorghum and sugarcane with increased photosynthetic productivity and cold tolerance, capable of synthesizing and accumulating lipids in place of sucrose.

All proposed work will take place in existing laboratory and greenhouse facilities. No outdoor field trials are included in this determination.

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.

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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: 10/09/2013