

PMC-EF2a

(2.04.02)

**U.S. DEPARTMENT OF ENERGY
EERE PROJECT MANAGEMENT CENTER
NEPA DETERMINATION**



RECIPIENT: Texas A&M AgriLife Research

STATE: TX

PROJECT TITLE : Synthetic Microorganisms to Enable Lignin to Fuel Conversion

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000719-1530	DE-EE0006112	GFO-0006112-001	

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Order 451.1A), 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.

Rational for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to Texas A&M AgriLife Research to develop synthetic microorganisms to enable lignin to fuel conversion. DOE funding would be used to engineer a genetically modified organism, *Rhodococcus jostii* RHA1 (*Rhodococcus*), to convert lignin into lipid for future biofuel applications. *Rhodococcus* is a genus of non-pathogenic soil bacteria.

Research and development would occur at four University laboratory facility locations: Texas AgriLife Research/Texas A&M University, Georgia Institute of Technology (GIT), Washington State University (WSU) and University of British Columbia (UBC).

All microbial engineering and most of the systems biology research would be performed and completed at the research facilities of Texas Agrilife Research, College Station, TX, 77843. All studies would be performed and completed at the research facilities of GIT, Atlanta, GA 30043 including the research facilities at the Institute of Paper Science and Technology building, 500 10th St., NW, Atlanta GA and Molecular Science and Engineering Building/School of Chemistry and Biochemistry, 901 Atlantic Drive, NW, Atlanta, GA. Fermentation optimization and some lignin fractionization would be carried out in the BSysE Bioenergy and Bioproducts Engineering research emphasis area at the Bioproduct, Sciences & Engineering Laboratory at WSU, Tri-Cities, WA, 99354. Microbial engineering and system optimization would be carried out at UBC in the Department of Immunology and Microbiology, 2350 Health Sciences Mall, Life Sciences Centre, Vancouver, BC, Canada, V6T 1Z3.

The recipient and subrecipients completed an Environmental Questionnaire addressing the protocols for laboratory safety, risk management, chemical handling and waste disposal. The proposed project would involve limited usage of hazardous chemicals such as chloroform and other organic solvents for compound extraction. Standard environmental and chemical safety procedures are in place and would be followed at each facility. In addition, bacteria transformation would be carried out, but the work would not impose a hazard to humans.

All hazardous materials would be disposed of in accordance with federal, state, and local environmental regulations. All applicable permits are in place for research and the recipients would obtain an additional Biosafety Level 1 (BSL-1) permit for the genetically modified strain of *Rhodococcus*. Engineered strains of *Rhodococcus* would be transported between collaborators using storage and handling procedures as defined in BSL-1 permits, including the notification to USDA APHIS. The biological waste would be treated with proper procedures including autoclave to avoid environmental and public hazards.

Based on review of the project information and the above analysis, DOE has determined the research and development would not have a significant individual or cumulative impact to human health and/or environment. DOE has determined the proposed project is consistent with actions contained in DOE categorical exclusion A9 "information gathering, analysis and dissemination" and B3.6 "small-scale research and development, laboratory operations and pilot projects" and is categorically excluded from further NEPA review.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

If you intend to make changes to the scope or objective of your project you are required to contact the Project Officer identified in Block 11 of the Notice of Financial Assistance Award before proceeding. You must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved.

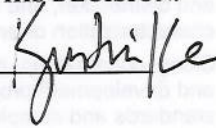
Note to Specialist :

Kelly Daigle 3/28/2013

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____

 **Electronically Signed By: Kristin Kerwin**
NEPA Compliance Officer



Date: 4/15/2013

FIELD OFFICE MANAGER DETERMINATION

Field Office Manager review required

NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON:

- Proposed action fits within a categorical exclusion but involves a high profile or controversial issue that warrants Field Office Manager's attention.
- Proposed action falls within an EA or EIS category and therefore requires Field Office Manager's review and determination.

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____

Field Office Manager

Date: _____