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

RECIPIENT: Virginia Polytechnic Institute and State University **STATE:** VA

PROJECT TITLE : Sweet Hydrogen: High-yield Production of Hydrogen from Biomass Sugars Catalyzed by in vitro Synthetic Biosystems

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000966	DE-EE0006968	GFO-0006968-001	GO6968

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.

Rationale for determination:

Virginia Polytechnic Institute and State University (Virginia Tech) would utilize DOE and cost share funding to improve on and scale-up biological hydrogen production. This project would focus on using starch as a substrate and would enhance biohydrogen generation rates as well as decrease production costs. All proposed project activities would occur within existing laboratories located on the campuses of Virginia Tech and the University of Georgia.

The project would use two microorganisms: Escherichia coli and a hyperthermophilic Archaeon Pyrococcus furiosus. The project would involve the use and handling of recombinant DNA materials at biosafety level 1. All such handling would occur in-lab. Small amounts of non-hazardous biological wastes would be generated by the proposed project. Any solid biological waste would be decontaminated by autoclaving prior to being processed as regular solid waste and any liquid biological waste would be sterilized by mixing with bleach prior to disposal. All hazardous materials would be managed in accordance with federal, state, and local environmental regulations. All R&D activities would take place within existing university laboratories with appropriate staff training being handled by the respective university Environmental Health and Safety departments. A hydrogen project safety plan will be required and will be reviewed by hydrogen safety experts.

Based on review of the project information, DOE has determined that the proposed project activities would not have a significant individual or cumulative impact to human health and/or environment. DOE has determined that these activities are consistent with actions contained in DOE categorical exclusions A9 "Information gathering, analysis, and dissemination," and B3.6 "Small-scale research and development, laboratory operations, and pilot projects," and are 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 :

This NEPA Determination does NOT require a tailored NEPA provision.
Fuel Cell Technologies Office
Casey Strickland 05/21/15

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 5/21/2015
NEPA Compliance Officer

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: _____ Date: _____
Field Office Manager

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Field Office Manager