

PMC-ND

(1.08.09.13)

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



RECIPIENT: Xiaodong Li/University of Virginia

STATE: VA

PROJECT TITLE: Low-Cost, High Performance Carbon Fiber for Compressed Natural Gas Storage Tanks

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002229	DE-EE0009239	GFO-0009239-001	

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

The U.S. Department of Energy (DOE) is proposing to provide funding to University of Virginia (UVA) to develop and test novel compressed natural gas (CNG) storage tanks. A pilot tank would be fabricated and a methodology would be developed for future scale-up. The project would be completed over five Budget Periods (BPs), with a Go/No-Go Decision Point in between each BP.

Proposed project activities would include computer modeling, material characterization, material synthesis (e.g. carbon fibers, composites), process optimization, CNG tank fabrication, and performance testing. Material synthesis and testing would be performed at both laboratory and pilot-scale. Laboratory-scale production would consist of filament and CNG coupon synthesis, as well as the fabrication of sub-scale CNG tank specimens. Pilot-scale production would consist of the manufacture of a full size (e.g. approximately 200 lbs.) pilot CNG tank.

UVA would coordinate all project activities and perform material synthesis, material characterization, and mechanical testing at laboratory facilities at its campus in Charlottesville, VA. Oak Ridge National Laboratory and Solvay Composite Materials would also perform material synthesis, material characterization, and mechanical testing at their laboratory/manufacturing facilities in Oak Ridge, TN and Piedmont, SC, respectively. Savannah River National Laboratory would perform tank design work and mechanical testing at its facilities in Aiken, SC. Hexagon Lincoln would perform composite development, CNG tank fabrication, and performance testing at its manufacturing facility in Lincoln, NE. Hexagon Lincoln regularly manufactures CNG tanks at this location. All project work would be performed at existing, purpose-built facilities. No physical modifications to existing facilities, groundbreaking activities, or changes to the use, mission, or operation of existing facilities would be required. No additional permits or authorizations would be required.

Project work would include the use and handling of industrial chemicals, reactive gases, and powered equipment operating at high temperatures and pressures. All such handling would be performed in controlled laboratory or manufacturing environments that utilize these materials as part of their regular course of business. Potential risks would be mitigated through adherence to established corporate health and safety policies and procedures, as well as the obligatory use of personal protective equipment. Hazardous waste materials would be handled, stored, and disposed of in accordance with existing corporate waste management policies. UVA and its project partners would observe all applicable Federal, state, and local health, safety, and environmental regulations.

Any work proposed to be conducted at a federal facility may be subject to additional NEPA review by the cognizant federal official and must meet the applicable health and safety requirements of the facility.

NEPA PROVISION

DOE has made a final NEPA determination.

Notes:

Fuel Cell Technologies Office
This NEPA Determination does not require a tailored NEPA Provision.
NEPA review completed by Jonathan Hartman, 01/04/2021

FOR CATEGORICAL EXCLUSION DETERMINATIONS


The proposed action (or the part of the proposal defined in the Rationale above) 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 proposed action that may affect the significance of the environmental effects of the proposal.

The proposed action 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.

The proposed action is categorically excluded from further NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:  Casey Strickland Date: 1/5/2021
NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

- Field Office Manager review not required
- Field Office Manager review required

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

Field Office Manager's Signature: _____ Date: _____
Field Office Manager