

PMC-ND

(1.08.09.13)

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

**RECIPIENT:** TreadStone Technologies, Inc.**STATE:** NJ

**PROJECT TITLE:** Development and Manufacturing for Precious Metal Free Bipolar Plate Coating for PEM Fuel Cells

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-0002446	DE-EE0009613	GFO-0009613-001	

**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 TreadStone Technologies, Inc. to develop a novel precious-metal-free coating process for fuel cell applications. Coating formulations would be developed which would be suitable for roll-to-roll manufacturing applications. Coating techniques would also be developed and tested utilizing sample substrate plates.

Proposed project activities include conceptual design work/process development, data analysis, computer modeling, coating formulation development, material characterization, coating demonstrations, and performance testing. Alloy powders would be assessed for potential coating formulations. Formulations that achieve targeted efficiency measures would be characterized (e.g., compositional analysis) and tested for performance (e.g., stress testing, corrosion testing, etc.). As part of testing, formulations would be used to coat sample substrate plates.

TreadStone Technologies would coordinate all project activities and perform laboratory-based research, including material characterization, coating development, and performance testing, at its laboratory facilities in Princeton, New Jersey. University of Tennessee, Knoxville (Knoxville, TN), Los Alamos National Laboratory (Los Alamos, NM), and Pacific Northwest National Laboratory (Richland, WA) would all also perform laboratory-based research at their respective research facilities, including material characterization, coating development, and performance testing. Austin Power Engineering (Wellesley, MA) would assist with data analysis and computer modeling, but would not perform any physical research activities.

All physical research activities would be performed in purpose-built laboratory facilities. No physical modifications to existing facilities, ground disturbance, 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 involve the use and handling of chemical reagents and laboratory equipment. All such handling would be performed in controlled environments that work with these materials as part of their regular course of business. Potential hazards would be mitigated through adherence to established institutional health and safety policies and procedures. Protocols would include the use of employee training, the use of personal protective equipment, engineering controls, and routine monitoring and inspections. Laboratory hoods, air ventilation systems, and sensor equipment would all be used as appropriate when performing relevant project activities. Waste materials would be disposed of by qualified waste management service providers. TreadStone Technologies 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, 08/11/2021

**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:  \_\_\_\_\_ Date: 8/13/2021  
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