

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



RECIPIENT: The Chemours Company

STATE: DE

PROJECT TITLE : Durable, High-Performance Membranes for Proton Exchange Membrane Water Electrolysis

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002922	DE-EE0011311	GFO-0011311-001	GO11311

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.)

B3.15 Small-scale indoor research and development projects using nanoscale materials

Siting, construction, modification, operation, and decommissioning of facilities for indoor small-scale research and development projects and small-scale pilot projects using nanoscale materials in accordance with applicable requirements (such as engineering, worker safety, procedural, and administrative regulations) necessary to ensure the containment of any hazardous materials. Construction and modification activities would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible).

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 federal funding to The Chemours Company (Chemours) to manufacture membranes for use in proton exchange membrane (PEM) water electrolyzers (PEMWE) to enhance their performance, durability, and safety.

Award activities would be completed over three Budget Periods (BPs) with Go/No-Go decision points between the BPs. Award activities would include membrane and membrane electrode assembly (MEA) manufacturing, component validation, data analyses, failure analyses, degradation mechanisms, characterization under hot and wet conditions, and water-soaked creep analyses. At-scale demonstrations, pilot scale demonstrations, and full-scale stack demonstrations would be carried out to test optimized membrane applicability. Polymer and membrane manufacturing, MEA manufacturing and testing, and test stand and ex-situ testing would take place at multiple Chemours locations (Fayetteville, NC; Elkton, MD; Newark, DE). Cummins Hydrogenics (Mississauga, ON, Canada) would assist with MEA manufacturing and testing. Cummins Electrified Power Inc. (Columbus, IN) would provide technical consultation. University of Delaware (Newark, DE) would carry out mechanical property testing, membrane development, and Diversity, Equity, Inclusion, and Accessibility activities such as engaging locally disadvantaged communities, the Society of Women Engineers, and engaging with the DOE's Minority Serving Institution Partnership Program to identify and hire qualifying students and staff.

All project activities would be completed in existing, purpose-built facilities. Potential hazards would include handling of flammable solvents, catalytic materials, platinum group metals, nanoparticles, and hydrogen gas. All such handling would occur in-lab and would follow all applicable health and safety regulations. All hazardous materials and waste would be managed in accordance with federal, state, and local environmental regulations. Hydrogen best practices would be followed as well. All nanoparticles would be handled in agglomerate, so there would be no inhalation risk from dry nanopowder.

MEA testing would produce an effluent water stream which would primarily be recycled back into the electrochemical stack. However, some may be collected for analysis or run to a drain. All effluent discharges would be in accordance with existing wastewater permits for each facility.

DOE has considered the scale, duration, and nature of proposed activities to determine potential impacts on resources, including those of an ecological, historical, cultural, and socioeconomic nature. DOE does not anticipate impacts on these resources which would be considered significant or require DOE to consult with other agencies or stakeholders.

NEPA PROVISION

DOE has made a final NEPA determination.

Notes:

Hydrogen and Fuel Cell Technologies Office (HFTO)
NEPA review completed by Alex Colling on 06/13/2024.

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.

DOE has determined that work to be carried out outside of the United States, its territories and possessions is exempt from further review pursuant to Section 5.1.1 of the DOE Final Guidelines for Implementation of Executive Order 12114; "Environmental Effects Abroad of Major Federal Actions."

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: 6/18/2024
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