

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



RECIPIENT: W. L. Gore & Associates, Inc.

STATE: MD

PROJECT TITLE : Durable, Ultra-Thin Diaphragms for Liquid Alkaline Water Electrolysis

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002922	DE-EE0011324	GFO-0011324-001	GO11324

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.

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).

B5.23 Electric vehicle charging stations

The installation, modification, operation, and removal of electric vehicle charging stations, using commercially available technology, within a previously disturbed or developed area. Covered actions are limited to areas where access and parking are in accordance with applicable requirements (such as local land use and zoning requirements) in the proposed project area and would incorporate appropriate control technologies and best management practices.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to W.L. Gore & Associates, Inc. (Recipient) to design, develop, fabricate, and test pilot-scale ultra-thin diaphragms for liquid alkaline water electrolysis (LAWE) and develop equipment and methods to study and model overpotentials in LAWE. Additionally, electric vehicle (EV) charging stations would be installed at select W.L. Gore & Associates, Inc. campuses, and a series of community outreach and education activities would be implemented.

Award activities would be executed over three annual performance periods (Phases), with Go/No Go decision points between Phases. This NEPA Determination (ND) applies to all tasks and subtasks in Phase 1, Tasks 1 - 4, Subtasks 5.1 - 5.7 and 5.9, and Tasks 6 – 8 of Phase 2, and Tasks 1 - 4, Subtasks 5.12, 5.13, 5.15 - 5.17, and Tasks 6 – 9 of Phase 3. It does not apply to Phase 2 Subtask 5.8 or Phase 3 Subtask 5.14 activities. These activities and locations are dependent on the coordination meetings held in Phase 1 and would require additional NEPA review.

Phase 1 activities include design, development, fabrication, and testing of prototype diaphragms at the Recipient's Elk Mills 1 facility (Elkton, MD). Characterization of bubble phenomena would occur at NYU Tandon School of Engineering (Brooklyn, NY). Additionally, the recipient would reach out to the community for input regarding sustainable improvements in community green spaces. Phase 2 activities involve down-selection of diaphragms through testing and evaluation, and continued characterization of bubble phenomena. Benchmark studies would be carried out on select diaphragm prototypes. Additionally, EV charging stations would be installed at the Elk Mills 1 facility and at Appleton East, a second facility owned by the Recipient (Elkton, MD). Furthermore, the Recipient would start working

with local schools and universities on clean energy outreach programs. Phase 3 would involve an additional down-selection of diaphragms, a scaled-up characterization and testing of the selected diaphragms, continued characterization of bubble phenomena, and a final technoeconomic analysis of production. Phase 3 activities would take place at De Nora Tech (Concord, OH) and NYU. Additional school and community outreach would occur and EV charging rebates would be distributed to the community.

Research and development activities would occur entirely within purpose-built facilities. No new modifications to the facilities would be required. No change in the use, mission, or operation of existing facilities would arise out of this effort.

EV charging stations would be installed in accordance with the following parameters outlined in the Advisory Council on Historic Preservation's (ACHP) exemption for Section 106 of the National Historic Preservation Act (NHPA): installation would be restricted to existing footprints and areas of previous ground disturbance within an existing parking facility (defined as any building, structure, land, right-of-way, facility, or area used for parking of motor vehicles). Infrastructure must be installed using reversible, non-permanent techniques, and where appropriate, use the lowest profile EV charging equipment reasonably available that provides the necessary charging capacity. EV charging stations shall be sited in minimally visibly intrusive areas, use colors complementary to the surrounding environment, where possible, and be limited to the current electrical capacity. This applies to Level 1, Level 2, and Level 3 (also known as Direct Current (DC) Fast Charging) EV charging stations.

Air emissions may occur from routine operation of the facilities and would be mitigated via operation under existing facility-wide permits. Award activities would involve hazards typical of manufacturing facilities such as loud work environments, operation of machinery, working with electricity, nanoscale materials, and hazardous materials. Hazardous materials and hazardous waste would be handled, managed, stored, and disposed of in accordance with applicable federal, state, and local environmental regulation. All nanoscale materials would be handled using proper engineering controls until adhered to surface materials or dissolved in solvents. Hazards would be mitigated via existing corporate health and safety policies and procedures, including employee training, proper protective equipment, engineering controls, monitoring, and internal assessments. The Recipient and their subcontractors would obtain and comply with all applicable federal, state, and local permits, requirements, and regulations.

DOE has considered the scale, duration, and nature of the proposed activities to determine potential impacts on sensitive resources, including those of an ecological, historical, cultural, and socioeconomic nature, and found no effects that would be expected to result from the proposed project activities.

NEPA PROVISION

DOE has made a conditional NEPA determination.

The NEPA Determination applies to the following Topic Areas, Budget Periods, and/or tasks:

Phase 1 (All Tasks and Subtasks),
Phase 2 (Tasks 1, 2, 3, 4, 6, 7, 8 and Subtasks 5.1 - 5.7 and 5.9), and
Phase 3 (Tasks 1, 2, 3, 4, 6, 7, 8, 9 and Subtasks 5.12, 5.13, 5.15 - 5.17).

The NEPA Determination does not apply to the following Topic Area, Budget Periods, and/or tasks:

Phase 2 (Subtask 5.8) and
Phase 3 (Subtask 5.14).

Include the following condition in the financial assistance agreement:

1. EV charging stations would be installed in accordance with the following parameters outlined in the Advisory Council on Historic Preservation's (ACHP) exemption for Section 106 of the National Historic Preservation Act (NHPA): installation would be restricted to existing footprints and areas of previous ground disturbance within an existing parking facility (defined as any building, structure, land, right-of-way, facility, or area used for parking of motor vehicles). Infrastructure must be installed using reversible, non-permanent techniques, and where appropriate, use the lowest profile EV charging equipment reasonably available that provides the necessary charging capacity. EV charging stations shall be sited in minimally visibly intrusive areas, use colors complementary to the surrounding environment, where possible, and be limited to the current electrical capacity. This applies to Level 1, Level 2, and Level 3 (also known as Direct Current (DC) Fast Charging) EV charging stations.

2. Subtasks not reviewed within this NEPA determination, and EV charging stations not compliant with the parameters referenced within this NEPA determination, are subject to additional NEPA review and approval by DOE. For activities requiring additional NEPA review, Recipients must complete the environmental questionnaire (EQ-1) found at <https://www.eere-pmc.energy.gov/NEPA.aspx> and receive notification from DOE that the NEPA review has been completed and approved by the Contracting Officer prior to initiating the project or activities.

Notes:

Hydrogen and Fuel Cell Technologies Office (HFTO)

This NEPA determination requires legal review of the tailored NEPA provision.

NEPA review completed by Amy Lukens, 7/3/2024.

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.

A portion of the proposed action is categorically excluded from further NEPA review. The NEPA Provision identifies Topic Areas, Budget Periods, tasks, and/or subtasks that are subject to additional NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:


NEPA Compliance Officer

Date: 7/3/2024

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:

Field Office Manager

Date: _____