

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



RECIPIENT: Ionomr Innovations, Inc.

STATE: NY

PROJECT TITLE : Alkaline stable, non-porous, anion exchange ionomer and membrane separator scale-up for liquid alkaline electrolysis

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002922	DE-EE0011317	GFO-0011317-001	NT11317

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 Ionomr Innovations, Inc. (Ionomr) to design, fabricate, and test high performance and durable liquid alkaline technologies with potassium hydroxide (KOH) electrolyte concentrations to be used in protein exchange membrane water electrolysis and polymer production.

The proposed award activities would occur over three budget periods (BPs), with Go/No Go decision points between the BPs. Award activities would include polymer scale-up, pilot manufacturing, process optimization, coating formulation development, techno-economic analyses, durability testing and other laboratory scale activities.

Ionomr (Vancouver, BC, Canada; Rochester, NY) would carry out administrative and testing activities. Kodak (Rochester, NY) would perform scale-up and pilot manufacturing of polymers and membranes, as well as membrane coating and electrode ink formulations. University of South Carolina (Columbia, SC), De Nora Tech, LLC (Concord, OH), and Teledyne Energy Systems (Hunt Valley, MD) would configure, evaluate, and down-select electrodes, test in-cell components and behavioral characterization, and design and build cells. Electrolyzer testing and further in-cell component testing would be performed by Plug Power, Inc. (Concord, MA).

An additional, unidentified, subrecipient would complete manufacturing scaling work described in SOPO Tasks 2, 8, and 14. Once the subrecipient has been selected, their information (EQ1) would be submitted by the award recipient to the DOE Project Officer for subsequent NEPA sufficiency review.

Diversity, equity, and inclusion community engagement activities would occur under this award, including creating internships for local undergraduate and graduate students, the development of career days, shadowing days, high school workshops, and co-op student placements.

Potential hazards would include the use of nanoscale catalyst particles, acids, solvents, flammable solvents, KOH,

metal salt solutions, polymeric binder solutions, compressed gases, and hydrogen gas. All hazardous materials would be handled in-lab. All nanoscale materials would be handled using proper engineering controls. Existing corporate health and safety policies and procedures would be followed, including employee training, proper protective equipment, engineering controls, monitoring, and internal assessments. Cooling water would be discharged into the local stormwater system and monitored to ensure chlorine levels and temperatures are maintained in accordance with state and local regulations. KOH waste would be collected in drums and removed by a third party contracted waste management service.

All project activities would be completed in existing, purpose-built facilities. No ground disturbing activities or facility modifications would occur.

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.

Include the following condition in the financial assistance agreement:

Once a subrecipient has been selected to complete the manufacturing scaling work described in SOPO Tasks 2, 8, and 14, their information (EQ1) must be submitted by the award recipient to the DOE Project Officer for subsequent NEPA sufficiency review. Activities at that location are restricted until the subrecipient's information has been reviewed by DOE.

Notes:

Hydrogen and Fuel Cell Technologies Office (HFTO)
This NEPA determination requires legal review of the tailored NEPA provision.
NEPA review completed by Alex Colling on 06/27/2024.

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: 6/27/2024
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