

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



**RECIPIENT:** NexTech Materials, Ltd.

**STATE:** OH

**PROJECT TITLE :** Scaleup and Demonstration of High Temperature Electrolysis Technology

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-0002922	DE-EE0011306	GFO-0011306-001	GO11306

**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.)

**B1.31 Installation or relocation of machinery and equipment**

Installation or relocation and operation of machinery and equipment (including, but not limited to, laboratory equipment, electronic hardware, manufacturing machinery, maintenance equipment, and health and safety equipment), provided that uses of the installed or relocated items are consistent with the general missions of the receiving structure. Covered actions include modifications to an existing building, within or contiguous to a previously disturbed or developed area, that are necessary for equipment installation and relocation. Such modifications would not appreciably increase the footprint or height of the existing building or have the potential to cause significant changes to the type and magnitude of environmental impacts.

**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 NexTech Materials (NexTech) to develop a pilot-scale planar cell and high temperature electrolysis stack manufacturing capability. The proposed award would occur over three budget periods (BPs), with two Go/No Go decision points between the BPs.

Proposed award activities at each location would be as follows:

1. NexTech (Lewis Center, OH): Manufacturing and testing of planar solid oxide electrolysis cells (SOEC), materials, and stacks. Procurement and installation of manufacturing equipment to augment existing production capacity.
2. Current Chemicals – Ivanhoe Road Plant (Cleveland, OH): Manufacturing of planar SOEC stacks and procurement and installation of manufacturing equipment to augment existing production capacity.
3. University of Connecticut (Storrs, CT): Research and development (R&D) of SOEC manufacturing process.
4. Czero – Main Facility (Fort Collins, CO): Design and construction of multi-stack testing apparatus.
5. Idaho National Laboratory (Idaho Falls, ID): Durability testing of solid oxide electrolysis stacks and multi-stack modules.
6. Georgia Tech Research Institute (Atlanta, GA) and Florida A&M University (Tallahassee, FL): Conducting energy audits of the manufacturing process.
7. Clark Atlanta University (Atlanta, GA): Construction of stack test stand and testing of sub-scale solid oxide electrolysis stacks.
8. Strategic Analysis (Arlington, VA): Techno-economic analysis, cost estimations, and progress tracking.

Additional activities at all locations would include executing a community benefits plan to ensure a diverse, equitable, inclusive, and accessible environment for advancing hydrogen production technology and providing outreach, training,

and education to future workforces.

Award activities would involve the use and handling of oxides, acids, bases, salts, solvents, and other hazardous materials. Low levels of hydrogen would be released into the atmosphere. Hazardous materials would be utilized, managed, stored, and disposed of in accordance with applicable federal, state, and local environmental regulation and would pose no risk to the public. Existing health, safety, and environmental policies and procedures would be followed at each facility, including employee training, personal protective equipment, engineering controls, monitoring, and internal assessments.

All project activities would be completed in existing, purpose-built facilities that are currently used for the type and scale of activities being proposed. No ground disturbance or changes in the use, mission, or operation of existing facilities would arise out of this effort. No permits, licenses, or authorizations would be required.

DOE has considered the scale, duration, and nature of the 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.

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:

Hydrogen and Fuel Cell Technologies Office (HFTO)  
NEPA review completed by Brittany White, 6/21/2024

## 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.

The proposed action is categorically excluded from further NEPA review.

## SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:

 Electronically  
Signed By: Melissa Parker

NEPA Compliance Officer

Date: 6/26/2024

## 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: \_\_\_\_\_