PMC-ND

(1.08.09.13)

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

RECIPIENT: The Board of Regents of the University of Wisconsin System **STATE:** WI

PROJECT TITLE : Demonstration of a SOEC Hydrogen Direct Reduction (HDR) at the Toledo, OH Steel Plant

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-EE0002997	EE0011231	GFO-0011231-001	

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 federal funding to The Board of Regents of the University of Wisconsin System to design, fabricate, assemble, and demonstrate a 250 kilowatt electric (kWel) solid oxide electrolyzer cell (SOEC) system for pressurized steam co-electrolysis.

Award activities would occur over three budget periods (BP) and 5 tasks. BP1 would include research and development, BP2 would include detailed design and fabrication, and BP3 would include installation and demonstration. Testing of SOEC cells and analysis of solid particles composition and size from flue gases samples would occur at University of Wisconsin-Madison in Madison, WI. Design and fabrication of the SOEC system would occur at the Fuel Cell Energy in Danbury, CT. The SOEC system would be shipped to, installed, and demonstrated at Cleveland Cliffs HBI Plant in Toledo, OH. Simulation and modeling activities would occur at EPRI in Palo Alto, CA; Laboratorio Energia Ambiente Piacenza (LEAP) in Piacenza, Italy; Dipartimento di Energia Politecnico di Milano in Milan, Italy; and the National Fuel Cell Research Center in Irvine, CA.

Installation and demonstration of the SOEC system would occur at the Cleveland Cliffs HBI Plant, which is a heavily developed industrial area. The system would arrive at the site packaged in two 38’x7’10”x7’7” containers, which would be installed outdoors near the plant’s existing shaft furnace and necessary connections made (e.g., electric grid, process water line, flue gas stream). Minor ground disturbance would be required to prepare the site for the containers. All other award activities would occur entirely within existing research and development facilities that are purpose-built for the type and scale of activities being proposed. No change in the use, mission, or operation of existing facilities would arise out of this effort.

Award activities would involve handling and use of various hazardous materials including, flammable gasses (H2, CO) at pressurized temperature conditions. Project activities involving hazardous materials pose no risk to the public. Hazardous materials would be utilized, managed, stored, and disposed of in accordance with applicable federal, state, and local environmental regulation. Existing laboratory and governmental health and safety policies and procedures would be followed, including employee training, proper protective equipment, engineering controls, monitoring, and internal assessments.

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 final NEPA determination.

Notes:

Hydrogen and Fuel Cell Technologies Office (HFTO)
NEPA review completed by Dustin Hill, 5/29/2024

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: Electronically Signed By: Melissa Parker Date: 5/30/2024

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