



National Environmental Policy Act (NEPA) Determination Categorical Exclusion

Recipient: Battelle Memorial Institute (Battelle)

States: West Virginia, Ohio, Pennsylvania

Project Title: Appalachian Regional Clean Hydrogen Hub (ARCH2)

Funding Opportunity Announcement Number: DE-FOA-0002779

Award Number: DE-CD000043

OCED NEPA Control Number: OCED-0000043-001-CX

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:

CATEGORICAL EXCLUSION APPENDIX, NUMBER, AND 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.

B3.1 Site characterization and environmental monitoring: Site characterization and environmental monitoring (including, but not limited to, siting, construction, modification, operation, and dismantlement and removal or otherwise proper closure (such as of a well) of characterization and monitoring devices, and siting, construction, and associated operation of a small-scale laboratory building or renovation of a room in an existing building for sample analysis). Such activities would be designed in conformance with applicable requirements and use best management practices to limit the potential effects of any resultant ground disturbance. Covered activities include, but are not limited to, site characterization and environmental monitoring under CERCLA and RCRA. (This class of actions excludes activities in aquatic environments. See B3.16 of this appendix for such activities.) Specific activities include but are not limited to: (a) Geological, geophysical (such as gravity, magnetic, electrical, seismic, radar, and temperature gradient), geochemical, and engineering surveys and mapping, and the establishment of survey marks. Seismic techniques would not include large-scale reflection or refraction testing; (b) Installation and operation of field instruments (such as stream-gauging stations or flow[1]measuring devices, telemetry systems, geochemical monitoring tools, and geophysical exploration tools); (c) Drilling of wells for sampling or monitoring of groundwater or the

vadose (unsaturated) zone, well logging, and installation of water-level recording devices in wells; (d) Aquifer and underground reservoir response testing; (e) Installation and operation of ambient air monitoring equipment; (f) Sampling and characterization of water, soil, rock, or contaminants (such as drilling using truck-or mobile-scale equipment, and modification, use, and plugging of boreholes); (g) Sampling and characterization of water effluents, air emissions, or solid waste streams; (h) Installation and operation of meteorological towers and associated activities (such as assessment of potential wind energy resources); (i) Sampling of flora or fauna; and (j) Cultural resources (archaeological and historic) identification in compliance with 36 CFR part 800 and 43 CFR part 7.

Rationale for Determination:

DOE's Office of Clean Energy Demonstrations (OCED) is proposing to provide funding to Battelle Memorial Institute (Battelle) in support of the Appalachian Regional Clean Hydrogen Hub (ARCH2) project. The ARCH2 Hub is an integrated network of hydrogen Sub-Projects proposed in the states of Ohio, West Virginia, and Pennsylvania. The ARCH2 Hub has proposed to develop clean hydrogen production, storage, and offtake Sub-Projects.

At this time, DOE is proposing to provide funding in support of ARCH2 Phase 1 activities which include planning and design activities, information gathering and field surveys to inform additional DOE NEPA review and a go/no-go decision prior to authorizing federal funding in support of subsequent project phases. The ARCH2 Hydrogen Hub's Phase 1 activities are described below and would be performed by the following Sub-Projects within the Hub:

Subrecipient / Sub-Project Name

Air Liquide Hydrogen Energy U.S. LLC / Air Liquide Liquefaction Plan
Allegheny Science & Technology Corp (AST) / ARCH2 Hub Management and Integration
Battelle Memorial Institute (BMI) / ARCH2 Hub Management and Integration
CNX Green Ventures LLC (CNX) / CNX Blue Ammonia
The East Ohio Gas Company dba Enbridge Gas Ohio / Enbridge Gas Ohio Hydrogen Production
Empire Diversified Energy / Empire Biomass Pyrolysis
EQT Ventures LLC (EQT) / EQT Gas-to-Liquids Plant
MGS Midstream 1, LLC(Fidelis) / Fidelis Mountaineer Gigasystem ATR
Gas Technology Institute (GTI) / ARCH2 Hub Management and Integration
Clean Fuel Services LLC (Hog Lick Aggregates) / Hog Lick Clean Fuels Services Depot
Hope Gas, Inc. / Hope Gas / WATT Residential Fuel Cells
Independence Hydrogen Inc. / Independence Hydrogen Waste Gas Separation
KeyState Natural Gas Synthesis LLC / KeyState ATR
National Energy Technology Laboratory (NETL) / ARCH2 Hub Management and Integration
Plug Power Inc. / Plug Power Liquefaction Plant
Plug Power Inc. / Plug Power Distribution and On-Road Mobility
TC Energy Development Holdings Inc / TC Energy/Chemours Belle Electrolysis Plant
TC Energy Development Holdings Inc / TC Energy/Chemours Washington Electrolysis Plant

The ARCH2 Phase 1 scope includes desktop and administrative actions, preliminary design and engineering, agency coordination for permits and approvals, and Community Benefits planning and stakeholder coordination. The following specific activities are planned:

- Perform program management activities
- Develop initial ARCH2 safety plans
- Develop environmental and regulatory plans to prepare for permitting and approval processes
- Update Community Benefits Plan (CBP) and implement Phase 1 CBP Scope
- Engineering and design
- Desktop review and analysis of potential site alternatives
- Desktop traffic analysis
- Preliminary design and identification of potential pipeline routing
- Site visits, pedestrian surveys, and land surveys

In addition, the following Phase 1 activities have been sufficiently defined and are included in this categorical exclusion determination. All proposed field work activities to include natural resource surveys, cultural resource surveys and geotechnical investigations are subject to the condition included in the “Notes” section below. Only the following Sub-Projects are cleared to perform field activities as described in the following section.

Empire Biomass Pyrolysis, Follansbee, WV

Geotechnical investigation is proposed and would occur on previously disturbed property (brownfield). The geotechnical investigation would involve drilling five 6-inch diameter geotechnical borings to approximately 30 feet below ground surface (i.e. top of bedrock) and backfilling boreholes with auger cuttings and/or grout. If determined necessary by DOE, a cultural resource survey will be performed prior to any geotechnical ground disturbing activities.

Enbridge Gas Ohio Hydrogen Production, Canton, OH

Site assessment and cultural resource surveys would be completed.

Fidelis Mountaineer Gigasystem ATR, North Point Pleasant, WV

Natural and cultural resource surveys would be completed.

Hog Lick Clean Fuel Services Depot, Fairmont, WV

Land survey, site evaluation, geotechnical investigation, and limited site grading and drainage (to allow for site access and erosion control) would be completed at a pre-disturbed site.

Independence Hydrogen Waste Gas Separation, Ashtabula, OH

Sampling and laboratory analysis of the existing INEOS Industrial Plant waste process vent gas will be performed by a third-party analysis company to determine the constituency of the process vent gas to inform the basis of process design. A site visit consisting of visual inspection and inquiries to local utility providers to determine the availability, location, and capacity of

services. A geotechnical investigation and analysis of soil bearing capacity is proposed that will require on-site soil borings.

Plug Power Liquefaction Plant (Plug LH2 Plant), Marshall County, WV

Site assessment and natural and cultural resource surveys would be completed.

TC Energy/Chemours Washington Electrolysis Plant, Washington, WV

Geotechnical borings (if necessary), wetland/waterbody survey and cultural resource surveys would be completed. Due previous disturbance at the site, it is anticipated that only archival research will be necessary to identify potential cultural resources. Coordination with DOE on the archival research will determine if cultural surveys, including shovel testing would be performed within the proposed site layout and a Phase 1 Cultural Resource Survey Report would be developed. If resources are identified, there may be a need to perform deep testing and prepare a Phase 2 Cultural Resource Survey Report.

TC Energy/Chemours Belle Electrolysis Plant, Belle, WV

Geotechnical borings (if necessary), wetland/waterbody survey and cultural resource surveys would be completed. Due previous disturbance at the site, it is anticipated that only archival research will be necessary to identify potential cultural resources. Coordination with DOE on the archival research will determine if cultural surveys, including shovel testing would be performed within the proposed site layout and a Phase 1 Cultural Resource Survey Report would be developed. If resources are identified, there may be a need to perform deep testing and prepare a Phase 2 Cultural Resource Survey Report.

Consultations (Section 106 NHPA, Section 7 ESA, etc.): See “Notes” below for preliminary requirements.

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 1501.9(e)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.1(g)(3)) 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.

A portion of the proposed action is categorically excluded from further NEPA review.

Notes:

Only the proposed Phase 1 activities that are sufficiently defined to enable DOE to conduct a meaningful environmental review have been included in this CX determination. Proposed Phase 1 activities that are not described in this CX determination are subject to additional NEPA review by DOE when sufficient information is available to conduct the review.

If the Recipient proposes to add to or modify the activities and/or locations described in this CX determination, those new activities/locations or modified activities/locations will be subject to additional NEPA review.

All cultural resource identification activities (e.g., archaeological, historic above ground, historic visual assessments) must be completed in accordance with applicable guidelines and standards provided by the West Virginia, Ohio, or Pennsylvania State Historic Preservation Offices (SHPO) or Tribal Historic Preservation Office (THPO) and the Secretary of the Interior’s Identification Standards. Coordination with DOE is required to establish an Area of Potential Effects (APE) and scope of effort (i.e., research design) prior to geotechnical surveys and cultural resource field investigations. The DOE will initiate Section 106 consultation prior to geotechnical surveys and cultural resource field investigations in order to support coordination with SHPO/THPO, Tribes, and other Section 106 consulting parties. Formal consultation as part of the Section 106 process will be led by and carried out in coordination with OCED staff.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

OCED NEPA Compliance Officer Signature:

Date: