

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



RECIPIENT: The Pennsylvania State University

STATE: PA

PROJECT TITLE : BIO-coke for reducing CO2 emissions in iron and steel manufacturing.

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002804	DE-EE0010845	GFO-0010845-001	GO10845

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 funding to The Pennsylvania State University to demonstrate that several sources of biomass can be converted to a bio-carbon pellet as a direct substitute for coal injection in steel manufacturing. The use of bio-carbon replacements would result in lower green-house gas emissions during the manufacturing process.

Award activities would be completed over three Budget Periods (BPs,) with a Go/No Go Decision Point between the BPs. This NEPA determination applies to all three BPs.

Proposed project activities by location are:

Engineering Design and Innovation Building, The Pennsylvania State University, University Park, PA

- Research team meetings, computation activities and discussion, preparation of equipment for testing, pilot-scale tests, fabrication, and instruction.

Materials Research Institute, The Pennsylvania State University, University Park, PA

- Materials characterization, testing, instruction, demonstration, and results discussion.

Sackett Building, The Pennsylvania State University, University Park, PA

- Lab-scale experimental work with bio-char.

Civil Infrastructure Testing and Evaluation Laboratory, The Pennsylvania State University, State College, PA

- Pilot-scale testing of higher production quantities of bio-char and instruction.

ArcelorMittal, Hamilton, Canada

- Testing and evaluation of bio-coke pellets; electric arc furnace (EAF) testing, as needed.

AM/NS Calvert, Calvert, AL

- Internal testing and validation of bio-pellets; EAF testing, as needed.

The proposed project activities would be performed at existing, purpose-built laboratory facilities. Project activities would involve the use and handling of potentially hazardous materials, including biomass, biochar, biochar pellets, and cleaning solutions. All such handling would occur in-lab, and all the facilities listed above have well established methods and procedures for hazardous material handling and disposal practices. All hazardous materials would be managed in accordance with federal, state, and local environmental regulations.

No modifications to existing facilities, ground disturbing activities, or changes to the use, mission, or operation of

existing facilities would be required. No additional permits, licenses, or authorizations would be required. DOE does not anticipate any impacts to resources of concern due to the proposed award activities.

NEPA PROVISION

DOE has made a final NEPA determination.

Notes:

Industrial Efficiency & Decarbonization Office (IEDO)
NEPA review completed by Melissa Parker, 12/12/23

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: _____



Casey Strickland

NEPA Compliance Officer

Date: 12/13/2023

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: _____