

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



RECIPIENT: [Purdue University](#)

STATE: [IN](#)

PROJECT TITLE: [An Active Membrane Energy Exchanger-Integrated Dedicated Outdoor Air System for Improved Energy Efficiency and Indoor Air Quality](#)

Notice of Funding Opportunity Number
[DE-SOL-0003158](#)

Procurement Instrument Number
[DE-EE0011578](#)

NEPA Control Number
[GFO-0011578-001](#)

CID Number
[GO11578](#)

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 provide federal funding to Purdue University for the design, development, fabrication, and testing of an Active Membrane Energy Exchanger to be used in a highly efficient and environmentally friendly cooling system.](#)

[Fabrication, characterization, modeling, prototype development and testing would occur at Purdue University in West Lafayette, Indiana; computational fluid dynamics simulations and modeling would occur at Oak Ridge National Laboratory in Oak Ridge, Tennessee; system modeling would occur at University of Texas at Austin in Austin, Texas; and system design and refrigerant selection would occur at Carrier Corp in Indianapolis, Indiana.](#)

[Potential hazards include exposure to chemicals, nanoscale materials, and refrigerants. Handling, storage, and disposal of hazardous materials would occur within controlled settings and would follow existing laboratory policies and procedures. All nanoscale materials would be handled using proper engineering controls until adhered to surface materials. Existing health, safety, and environmental policies and procedures would be followed at all facilities, including personnel training, proper personal protective equipment, engineering controls, monitoring, and internal assessments.](#)

[All project activities would be completed in existing, purpose-built laboratory facilities. No facility modifications, new permits, or licenses would be required. DOE does not anticipate any impacts to resources of concern due to the proposed project activities.](#)

[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.

Include the following condition in the financial assistance agreement:

Notes:

Building Technologies Office
NEPA review completed by Jason Spencer, 11/12/2024

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: Matthew Blevins
NEPA Compliance Officer

Date: 11/12/2024

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: