

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



RECIPIENT: [Purdue University](#)

STATE: IN

PROJECT TITLE: [Additive Manufacturing of Modular Tools with Integrated Heating for Large-Scale Wind Blade Manufacturing](#)

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
<a href="#">DE-FOA-0002960</a>	<a href="#">DE-EE0011008</a>	<a href="#">GFO-0011008-001</a>	<a href="#">G011008</a>

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:

<b>A9 Information gathering, analysis, and dissemination</b>	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.)
<b>B3.6 Small-scale research and development, laboratory operations, and pilot projects</b>	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 [Purdue University \(Purdue\)](#) to design, develop, fabricate, and field test a section of a modular tool design for wind blade manufacturing.

This effort would occur at six locations throughout the United States. Validation of a proof-of-concept tool through measurements and part fabrication on printed tools would take place at [Purdue](#), located in West Lafayette, Indiana. The Compounding of thermoplastic material formulations for printing/tooling would occur at [Techmer PJM](#) in Clinton, Tennessee. Engineering support for the design of modular printed tools and support/guidance on the fabrication of wind blades would occur at [TPI Composites](#) in Warren, Rhode Island. Printing, machining, and testing of joining techniques for modular tool design, fabrication of a tool design support frame, and tool assembly/fabrication would occur at [Dimensional Innovations](#) in Overland Park, Kansas. Integration of in-situ heating technology, design of printing process for modular tool design, as well as printing and finishing of modular tool sections would occur at [Thermwood Corporation](#) in Dale, Indiana. Design and simulation software development would occur at [Dassault Systèmes](#) in Waltham, Massachusetts.

Award efforts at [Purdue](#) and [Dimensional Innovations](#) would utilize acetone as a solvent and epoxy resin in the fabrication of parts in the proof-of-concept tool and the section of the modular tool design that would be demonstrated in this process. Appropriate personal protection equipment would be provided for handling of these substances, and the appropriate EPA protocols would be followed for the disposal of residues. All hazardous materials and equipment would be managed in accordance with federal, state, and local environmental regulations. There would be no use/handling of hazardous materials at the remaining four facilities associated with this award.

Greenhouse emissions are estimated from the transportation of feedstock material and from the transportation of the printed tools and are expected to be negligible. No direct emissions are expected to be generated as a result of this project.

All project work would be performed at the purpose-built facilities of the recipient and subrecipients, with no modification of the existing facilities, ground disturbances, changes in use of facilities or outdoor equipment installations. 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:

Advanced Materials and Manufacturing Technologies Office  
NEPA review completed by Chris Akios, 06/05/2024

**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:  Andrew Montano Date: 6/5/2024  
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