

PMC-ND

(1.08.09.13)

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

**RECIPIENT:** Lehigh University**STATE:** PA

PROJECT TITLE: COUPLED AERO-HYDRO-MECHANICAL HYBRID SIMULATION TESTING OFFSHORE WIND TURBINES SUBJECTED TO OPERATIONAL AND EXTREME LOADING CONDITIONS

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002071	DE-EE0008964	GFO-0008964-001	

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 Lehigh University (Lehigh) to upgrade their existing soil-foundation interaction testing facility and to develop aero-hydro-mechanical hybrid simulation for offshore wind turbines.

Proposed tasks would include gathering and dispersing information, design work, fabrication, testing, analysis, and evaluation. All tasks would be completed at Lehigh, in Bethlehem, PA, in offices or dedicated laboratory and testing facilities.

Lehigh would initially gather an advisory group, develop a website, develop a seminar series, and develop workshops. These tasks would be limited to information gathering and dissemination.

Lehigh would then fabricate soil boxes which would be used for wind tower testing. The soil boxes would be approximately 12 feet by 12 feet by 12 feet and would hold up to 1700 cubic feet of soil. Boxes would be fabricated from steel. Once fabricated the soil test boxes would be utilized for scale model wind tower foundation tests. Scale model foundation test units, and corresponding connections, would be fabricated from steel. Actuators and displacement sensors would be connected to foundation units. Tests of up to 500,000 cycles would then be conducted on the foundation test units. After each test soil would be removed from the soil boxes, and reinstalled for additional tests or for testing a different foundation unit. Tests would be conducted on a variety of foundation types including monopile, multiple-piles, and floating.

All project fabrication and testing work would occur at previously existing University laboratory facilities designed for such work. Existing University Environmental Health and Safety Department policies and procedures would be followed and implemented with all other activities related to fabrication and testing. The project would involve the use and handling of soil materials in the laboratory. To mitigate any issues related to dust, wet soil will be pumped into the testing soil box. The ventilation system in the building would also be utilized to address dust. Workers would also be required to use the appropriate masks.

NEPA PROVISION

DOE has made a final NEPA determination.

Notes:

Wind Energy Technologies Office

This NEPA determination does not require a tailored NEPA provision.

Review completed by Roak Parker, 4/6/2020

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: **Roak Parker**
NEPA Compliance Officer

Date: 4/6/2020

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: _____