

PMC-ND

(1.08.09.13)

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



RECIPIENT: Alstom Renewables US LLC

STATE: VA

**PROJECT TITLE** Cost Of Energy reduction for offshore Tension Leg Platform (TLP) wind turbine systems  
: through advanced control strategies for energy yield improvement, load mitigation and stabilization

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-0000415	DE-EE0005494	GFO-0005494-003	GO5494

**Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Order 451.1A), 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.)

**B5.15 Small-scale renewable energy research and development and pilot projects**

Small-scale renewable energy research and development projects and small-scale pilot projects, provided that the projects are located within a previously disturbed or developed area. Covered actions would be in accordance with applicable requirements (such as local land use and zoning requirements) in the proposed project area and would incorporate appropriate control technologies and best management practices.

## Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to Alstom Renewables US (Alstom) to design and test new control strategies for utility-scale wind turbines that would reduce the levelized cost of energy through increased energy yield, particularly in an offshore environment.

DOE completed two previous NEPA determinations for this project. The first NEPA determination included activities for Budget Period 1 (BP1), originally defined as Tasks 1-11 and redefined in the Budget Period 2 (BP2) Statement of Project Objectives (SOPO) as Tasks 11-7 (GFO0005494001, CX A9, 01/19/2012). The second NEPA determination applied to the remainder of the project, including BP2 (GFO0005494002, CX A9, CX B3.1, CX B5.15, 7/31/2014).

DOE is now considering changes to the SOPO proposed by Alstom. Alstom is proposing to revise BP2 to include a task to test and evaluate an outrigger damper which would be installed on the flange at the base of the ECO110 wind turbine tower at the National Renewable Energy Laboratory's National Wind Technology Center (NREL's NWTC). The purpose of this added task is to advance the tension leg platform - outrigger damper technology by testing its operation under power production and extreme winds. In addition to the outrigger damper, sensors would be installed on the flange at the tower's base to measuring structural loads.

NREL would provide the necessary personnel to install the damper and sensors and provide data acquisition/management during testing along with Alstom and other contractor personnel. NREL would assemble a report for the data taken.

Safety risks associated with outrigger activities on the operational wind turbine include welding, working at heights, and working in restricted spaces. Work carried out on the wind turbines would be performed by qualified NREL employees, Alstom employees, or contractors who are trained in carrying out the specified tasks in the hazardous environments in accordance with NREL and Alstom's operational procedures and requirements. Appropriate safe work practices would be reviewed with all onsite personnel by the Alstom/NREL team.

The only changes to the existing ECO110 wind turbine tower would be installation of the damper, support fixtures, and sensors. These fixtures and dampers would be installed on a temporary basis only and do not materially affect the wind turbine's operational envelope or function. Limited ground disturbance may occur on a previously disturbed area, but is not expected because the area around the turbine is currently paved. At the conclusion of the project, the

wind sensors and dampers would be removed.

Any work proposed to be conducted at a DOE laboratory may be subject to additional NEPA review by the cognizant DOE NEPA Compliance Officer for the specific DOE laboratory prior to initiating such work. Further, any work conducted at a DOE laboratory must meet the laboratory's health and safety requirements.

Based on the review of the proposal, DOE has determined the proposal fits within the class of action(s) and the integral elements of Appendix B to Subpart D of 10 CFR 1021 outlined in the DOE categorical exclusion(s) selected above. DOE has also determined that: (1) there are no extraordinary circumstances (as defined by 10 CFR 1021.410(2)) related to the proposal that may affect the significance of the environmental effects of the proposal; (2) the proposal has not been segmented to meet the definition of a categorical exclusion; and (3) the proposal is not connected to other actions with potentially significant impacts, related to other proposals with cumulatively significant actions, or an improper interim action. This proposal is categorically excluded from further NEPA review.

**NEPA PROVISION**

DOE has made a final NEPA determination for this award

Insert the following language in the award:

If the Recipient intends to make changes to the scope or objective of this project, the Recipient is required to contact the Project Officer, identified in Block 15 of the Assistance Agreement before proceeding. The Recipient must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved. If the Recipient moves forward with activities that are not authorized for Federal funding by the DOE Contracting Officer in advance of a final NEPA decision, the Recipient is doing so at risk of not receiving Federal funding and such costs may not be recognized as allowable cost share.

Insert the following language in the award:

You are required to:

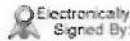
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Note to Specialist :

Wind Energy Technologies Office  
This NEPA determination requires a tailored NEPA provision.  
Review completed by Chris Rowe, 6/1/2017

**SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.**

NEPA Compliance Officer Signature: \_\_\_\_\_



Kristin Kerwin

NEPA Compliance Officer

Date: 6/2/2017

**FIELD OFFICE MANAGER DETERMINATION**

Field Office Manager review required

**NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON:**

- Proposed action fits within a categorical exclusion but involves a high profile or controversial issue that warrants Field Office Manager's attention.
- Proposed action falls within an EA or EIS category and therefore requires Field Office Manager's review and determination.

**BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :**

Field Office Manager's Signature: \_\_\_\_\_

Field Office Manager

Date: \_\_\_\_\_