



# **NREL/University of Delaware Offshore Wind R&D Collaboration**

## **Cooperative Research and Development Final Report**

**CRADA Number: CRD-10-393**

NREL Technical Contact: Walt Musial

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## Cooperative Research and Development Final Report

In accordance with Requirements set forth in Article XI, A(3) of the CRADA document, this document is the final CRADA report, including a list of Subject Inventions, to be forwarded to the Office of Science and Technical Information as part of the commitment to the public to demonstrate results of federally funded research.

**Parties to the Agreement:** University of Delaware

**CRADA Number:** CRD-10-393

**CRADA Title:** NREL/University of Delaware Offshore Wind R&D Collaboration

### **Joint Work Statement Funding Table Showing DOE Commitment:**

<b>Estimated Costs</b>	<b>NREL Shared Resources</b>
Year 1	\$ 50,000.00
Year 2	\$ 50,000.00
Year 3	\$ 50,000.00
Year 4	\$ 50,000.00
Year 5	\$ 50,000.00
<b>TOTALS</b>	<b>\$ 250,000.00</b>

### **Abstract of CRADA Work:**

Specifically, the work under this CRADA includes, but is not limited to, the development of test procedures for an offshore test site in Delaware waters; testing of installed offshore wind turbines; performance monitoring of those turbines; and a program of research and development on offshore wind turbine blades, components, coatings, foundations, installation and construction of bottom-fixed structures, environmental impacts, policies, and more generally on means to enhance the reliability, facilitate permitting, and reduce costs for offshore wind turbines. This work will be conducted both at NREL's National Wind Technology Center and participant facilities, as well as the established offshore wind test sites.

### **Summary of Research Results:**

NREL assisted the University of Delaware in the development of test procedures for its offshore test site at the wind turbine test facility at its Lewis Campus. They performed testing on the Gamesa 2-MW wind turbine including performance monitoring and assessment of environmental impacts and policies. More general assessment was performed for means to enhance the reliability, facilitate permitting, and reduce costs for offshore wind turbines. This work was primarily conducted at NREL's National Wind Technology Center. Key contributions were realized by Delaware, at their facilities and at the established offshore wind test sites, through

NREL's support in developing plans for an offshore test site in Delaware waters and by sponsoring several graduate students for parts of their research conducted for various offshore wind topics including foundation modeling, environmental issues, and testing support.

**Subject Inventions Listing:** None

**Report Date:** 9/30/15

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