NREL
NATIONAL RENEWABLE ENERGY LABORATORY

NaREC Offshore and Drivetrain Test Facility Collaboration

Cooperative Research and Development Final Report

CRADA Number: CRD-04-140

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.

CRADA Number: CRD-04-140

CRADA Title: NaREC Offshore and Drivetrain Test Facility Collaboration

Parties to the Agreement: National Renewable Energy Center (NaREC)

Joint Work Statement Funding Table Showing DOE Commitment:

Estimated Costs	NREL Shared Resources
Task 1	$ 20,000.00
Task 2	$ 66,000.00
TOTALS	$ 86,000.00

Abstract of CRADA Work:

The National Renewable Energy Laboratory (NREL) and the National Renewable Energy Centre (NaREC) in the United Kingdom (UK) have a mutual interest in collaborating in the development of full-scale offshore wind energy and drivetrain testing facilities. NREL and NaREC will work together to share resources and experiences in the development of future wind energy test facilities. This Cooperative Research and Development Agreement (CRADA) includes sharing of test protocols, infrastructure cost data, test plans, pro forma contracting instruments, and safe operating strategies. Furthermore, NREL and NaREC will exchange staff for training and development purposes.

By 2012, NaREC plans to have a 100 megawatt (MW) offshore wind research and development site in operation in waters off the coast of the UK where prototype commercial wind turbines can be deployed and tested. NREL, as the leading laboratory for offshore wind in the United States, has an interest in developing U.S. ocean test facilities to facilitate the development of new wind turbine technology for deployment, demonstration, evaluation, and validation in U.S. waters. NREL and NaREC will work together under this CRADA to share resources and experiences in the development of future ocean wind energy test facilities.

NREL operates the only drivetrain test facility in the United States that is capable of performing full-scale testing of mega-watt-size wind turbine drivetrains. NREL has obtained extensive drivetrain testing experience using its 2.5-MW dynamometer over the last decade. NaREC is planning a 15-MW drivetrain testing facility for accelerated drivetrain testing. This CRADA will leverage NREL's experience testing and operating its 2.5-MW dynamometer to support NaREC's commissioning of the NaREC drivetrain test bench. NaREC will send up to two staff to NREL for secondments up to six months in duration for training by dedicated NREL staff. In addition, NaREC staff will be allowed to observe operational procedures and best practices in NREL's 2.5-MW dynamometer by assisting with customer tests (subject to customer approval).

NaREC is a corporation organized under the laws of the United Kingdom with a principal place of business at Eddie Ferguson House, Ridley Street, Blyth, NE24 3AG, UK.

Summary of Research Results:

NREL and NaREC collaborated in the development of full-scale offshore wind energy and drivetrain testing facilities. NREL and NaREC worked together to share resources and experiences in the development of future wind energy test facilities. Under the CRADA NREL shared test protocols, infrastructure cost data, test plans, pro forma contracting instruments, and safe operating strategies to help NaREC establish a large blade testing capability in their facilities at Blyth UK. NREL and NaREC also exchanged staff for training and development purposes under the blade structural testing activity as well as the development of NaREC's dynamometer.

Under this CRADA NREL supported NaREC in the planning of the NaREC drivetrain test bench. NaREC sent staff members to NREL to be trained by dedicated NREL staff. In addition, NaREC staff observed operational procedures and best practices in NREL's 2.5-MW dynamometer by assisting with tests.

Subject Inventions Listing:

None

Report Date:

June 9, 2014

Responsible Technical Contact at Alliance/NREL:

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