

National Offshore Wind Research and Development Consortium

Carrie Cullen Hitt
Executive Director



**NATIONAL
OFFSHORE WIND**
RESEARCH & DEVELOPMENT CONSORTIUM

National Offshore Wind R&D Consortium

Mission

Goal: Facilitate a nationally-focused, not-for-profit organization collaborating with industry on prioritized R&D activities to reduce levelized cost of energy (LCOE) of offshore wind in the U.S. and maximize other economic and social benefits

Desired Impacts:

- Innovations directly responsive to the technical and supply chain barriers faced by offshore wind project developers in the U.S.
- Build strong networks connecting technology innovators, investors, and industry
- Increase U.S. content and job opportunities

Administrator: (competitively awarded by DOE in 2018): New York State Energy Research and Development Administration (NYSERDA), solicitation turned over to the Consortium in 2020

Project Value: \$41 M (\$20.5 DOE funds, matched by NYSERDA) – plus state (MA, VA, MD) and member contributions totaling over \$7M; 85% of the funds go to R&D projects

Duration: 4 years under current funding (+ 3 years to complete all projects); goal is to become self sustaining indefinitely through research partner funding

Current Members: 12 Developers; 4 States, Anbaric, GE, ABB Hitachi, EPRI, National Grid, NYPA, Renewables Consulting Group and **Carbon Trust**



Current Project Awards

| Pillar | Technical Challenge Area | Proposal Title | Lead Proposer |
|-----------------------------------------------------------------|-----------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------|
| Pillar 1: Offshore Wind (OSW) Plant Technology Advancement | 1.1: Array Performance and Control Optimization | Computational Control Co-design Approach for Offshore Wind Farm Optimization | Stony Brook University |
| | | Impact of Low Level Jets on Atlantic Coast Offshore Wind Farm Performance | General Electric |
| | | Reducing LCoE from Offshore Wind by Multiscale Wake Modeling | Cornell University |
| | | Wind Farm Control and Layout Optimization for U.S. Offshore Wind Farms | NREL |
| | 1.2: Cost-Reducing Turbine Support Structures for the U.S. Market | A Low-Cost Modular Concrete Support Structure and Heavy Left Vessel Alternative | RCAM Technologies |
| | 1.3: Floating Structure Mooring Concepts for Shallow and Deep Waters | Demonstration of Shallow-Water Mooring Components for FOWTs (ShallowFloat) | Principle Power, Inc. |
| | | Design and Certification of Taut-synthetic Moorings for Floating Wind Turbines | University of Maine |
| | | Dual-Functional Tuned Inerter Damper for Enhanced Semi-Sub Offshore Wind Turbine | Virginia Tech |
| | | Innovative Anchoring System for Floating Offshore Wind | Triton Systems, Inc. |
| | | Innovative Deepwater Mooring Systems for Floating Wind Farms (DeepFarm) | Principle Power, Inc. |
| | | Shared Mooring Systems for Deep-Water Floating Wind Farms | NREL |
| | 1.4: Power System Design and Innovation Challenge Statement | Techno-Economic Mooring Configuration and Design for Floating Offshore Wind | UMass Amherst |
| | Development of Advanced Methods for Evaluating Grid Stability Impacts | NREL | |
| Pillar 2: OSW Power Resource and Physical Site Characterization | 2.1: Comprehensive Wind Resource Assessment | A Validated National Offshore Wind Resource Dataset with Uncertainty Quantification | NREL |
| | 2.2: Development of a Metocean Reference Site | Development of a Metocean Reference Site near the MA & RI Wind Energy Areas | WHOI |
| Pillar 3: Installation, O&M and Supply Chain Solutions | 3.2: Offshore Wind Digitization Through Advanced Analytics | Enabling Condition Based Maintenance for Offshore Wind | General Electric |
| | | Physics Based Digital Twins for Optimal Asset Management | Tufts University |
| | | Radar Based Wake Optimization of Offshore Wind Farms | General Electric |
| | | Survival Modeling for Offshore Wind Prognostics | Tagup, Inc. |
| | 3.3: Technology Solutions to Accelerate U.S. Supply Chain | 20GW by 2035: Supply Chain Roadmap for Offshore Wind in the US | NREL |

All Dates, Bounds and Challenge Areas Are Subject to Change



NOWRDC Offshore Wind Innovation Solicitation 1

- Opportunity notice and related materials were posted on www.nationaloffshorewind.org and <https://www.nyserda.ny.gov/All-Programs/Programs/Offshore-Wind/Focus-Areas/Research-and-Development>
- Types of proposals
 - Technical Feasibility Studies – Funding Limit \$300,000
 - New Product, Systems, Service or Strategy Development – Funding Limit \$800,000
 - Demonstration of Technologies, Systems or Services – Funding Limit \$1,500,000
 - Multi-Phase Project spanning two or more of the above categories – Sum of Relevant Funding Limits
- Proposers were encouraged, but not required, to provide a projected cost share
- Over 110 proposals received, at least 6 have UK companies or institutions as contractors or partners
- Awarded projects may have been eligible for Innovate UK funded (these are already identified)



Collaboration Opportunities

- Review NOWRDC research projects, identify areas where UK companies are participants
- Joint solicitation on select research projects
- Matched funding on awarded projects
- Partnered research on a few select topics

