An Overview of the New Jersey Academic Alliance for Offshore Wind Energy (A²OSW)

Onur Bilgen, Josh Kohut, and Peggy Brennan-Tonetta
Rutgers, The State University of New Jersey
The New Jersey Academic Alliance for Offshore Wind Energy (A²OSW)
Rutgers Offshore Wind Energy Collaborative

• Created to organize expertise in OSW research and education across the Rutgers community.

• Over 60 faculty from Rutgers New Brunswick, Newark, and Camden!

• Goal is to establish Rutgers as a national leader in OSW innovation.

OSW.rutgers.edu
Accomplishments

• Established strong community of faculty and staff

• Collaborations on numerous proposals including
  o NJEDA Wind Innovation Center
  o DOE Center of Excellence in Offshore Wind
  o Mid-Atlantic Wind Innovation Center (MAWIC)

• Successfully secured grant funding such as the NJEDA University Initiatives Program

• Significant collaborations with industry for research and educational curriculum development

• Website created for easy identification of Rutgers resources/contacts

• Recognition of Rutgers as a leader in offshore wind research

• Planning activities for FY 24
Educational Modules

• **11** faculty from engineering, environmental, and social science disciplines

• **33** modules developed topics include:
  • Wind Turbine Modeling and Optimization
  • Offshore Wind and Fisheries
  • Life Cycle Assessment of Offshore Wind Energy
  • Economics of Wind Generation/ Supply Chain
  • Psychological Dimensions of OSW Development

• Fall ‘23 – Full Launch

• Certificate/badging program being considered
Community Events and Shared Learning

Engage and connect with local communities and businesses on offshore wind energy development, careers in offshore wind energy, environmental health, sustainability, training needs, and networking

1. Rutgers-Camden: May 2, 2023
2. Rutgers-Newark: January 26, 2024
3. Rutgers-New Brunswick: today
Planning for a Future Full-Feature Net-Zero Wind Energy Test (WET) Center

**Onur Bilgen (co-Lead), Josh Kohut (co-Lead), Laurent Burlion, Aziz Ezzat, Travis Miles, Roger Wang, Serpil Guran, Elsayed A. Elsayed, Mohsen Jafari, Michael Crowley**

**Deliverable 1:** Design of the Net-Zero WET Center

**Deliverable 2:** Design & Development of the Rutgers WET Lab

**Deliverable 3:** Laboratory Development and Pilot Implementation

**Deliverable 4:** Collaboration and Outreach Activities

Photo Credit: RODEO Team/BOEM
New Jersey Wind Institute Fellowship Program

- Designed to encourage and support student research in topics in offshore wind and build student and faculty advisor expertise in offshore wind research and innovation in NJ.

- Involves several state higher education institutions (including Rutgers, NJIT, Rowan, Montclair State, Stockton, Seton Hall, Princeton, Stevens).

- Supports both Undergraduate and Graduate Students.
DoE Center of Excellence: Our Response

Enabling Multi-disciplinary Pathways in Offshore Wind Education and Research (EMPOWER)

An Offshore Wind Workforce Development and Research Consortium for Equitable and Environmentally-aware Offshore Energy Deployment
DoE Center of Excellence: Our Response

Rutgers, The State University of New Jersey
Princeton University
New Jersey Institute of Technology
Rowan University
Stevens Institute of Technology
University of Delaware
The State University of New York at Albany
The State University of New York at Stony Brook
Clarkson University
University of Maryland at College Park
University of Texas at Dallas
North Carolina State University
The University of North Carolina at Chapel Hill
East Carolina University

Fathom Science

New Jersey Economic Development Authority
New Jersey Commission on Science, Innovation and Technology
New York State Energy Research and Development Authority
National Offshore Wind Research Development Consortium
National Renewable Energy Laboratory

Photo Credit: RODEO Team/BOEM
DoE Center of Excellence: Our Response

Blade 1: Environmentally-aware Design and Deployment

Blade 2: Energy Transmission from Offshore to Onshore

Blade 3: Equitable Prosperity through Regional Collaboration

Nacelle: The Academy of Wind Energy (AWE)

Tower: Community Engagement

Photo Credit: RODEO Team/BOEM
New Jersey Academic Alliance for Offshore Wind Energy (A²OSW)

New Jersey Academic Alliance for Offshore Wind Energy (A²OSW) Symposium
Friday, January 12, 2024 at Rutgers-New Brunswick

Academia and partners in offshore wind energy – students, faculty, staff, government, nonprofits, and industry – are invited to attend.

For more information and to register, visit: osw.rutgers.edu/event/symposium2024/

Student posters related to offshore wind energy will be on display during the Symposium. Students can present their posters during the breaks throughout the day. To present a poster at the Symposium, please submit the title of your poster to Amy Mandelbaum at amy.mandelbaum@rutgers.edu by Friday, January 5, 2024.

Photo Credit: RODEO Team/BOEM
A²OSW CORE Research & Education Focus Areas

CLIMATE-SMART MODELING

ENVIRONMENTAL IMPACT ASSESSMENT

ELECTRICAL INFRASTRUCTURE

POWER-TO-X AND STORAGE SOLUTIONS

OSW DESIGN AND MANUFACTURING
New Jersey Academic Alliance for Offshore Wind Energy (A²OSW)

Some Introductions
A²OSW Objectives and Approach

Objective: A²OSW to become a leader in integrated approach to the economics, engineering, environmental science, and policy of wind energy.

Approach: collaboration between industry, government, and academic partners…
1) Research in the five Focus Areas
2) A “Physical Space Network” of meeting/gathering spaces
3) Workforce Development Focus (Integrated Academic Programs in OSW)
4) Economic Development and Tech-2-Market Focus
5) Community Engagement Focus
6) A Virtual Data Network and Cybersecurity Capabilities
7) Partnering with Unique Test Facilities
Co-organized by the NJ Academic Alliance for Offshore Wind

Inclusive Period for All Events: OCT 28 (MON) – NOV 2 (SAT)
NAWEA WindTech ‘24: OCT 30 (WED) – NOV 1 (FRI)

Notable Events: ACP Offshore Wind Power (Atlantic City, NJ): OCT 28 (MON) – OCT 30 (WED)
Questions?