Welcome to the Rutgers University Offshore Wind Energy Symposium!

January 12, 2023

osw.rutgers.edu

Please use the hashtag #RutgersOSW in your social media posts.

Video credit: Lissa Eng/BOEM
Welcome

Peggy Brennan-Tonetta,
Director of Resource and Economic Development
Senior Associate Director, New Jersey Agricultural Experiment Station

mbrennan@rutgers.edu
Rutgers Offshore Wind Collaborative

Over 40 faculty from across New Brunswick, Newark and Camden!

osw.rutgers.edu
Welcome

Denise Hien, Vice Provost for Research, Chancellor-Provost’s Office, Rutgers – New Brunswick

denise.hien@smithers.rutgers.edu
Welcome

Senator Bob Smith, Chair, New Jersey Senate Environment and Energy Committee

senbsmith@njleg.org
Keynote Speaker

**Kris Ohleth**, Director, Special Initiatives on Offshore Wind

[kris@offshorewindpower.org](mailto:kris@offshorewindpower.org)
Offshore Wind: The Opportunities and Challenges of Our Nation’s Next Big Thing

Rutgers Symposium
January 12, 2023
About the Special Initiative on Offshore Wind (SIOW)

- Rely on fact-based research and multi-sector collaboration to provide expertise, analysis, information sharing, and strategic solutions to advance the responsible and sustainable development of US offshore wind
- Guided by a Steering Committee of diverse interests
- Not a trade organization - funded by private foundations, which supports our objectivity and unique approach to our work.
Embracing offshore wind as a solution

Why offshore wind
- Environmental
- Economic
- Energy system
The global perspective

Current and planned offshore wind farms

- North America:
  - Active: 2
  - Under development: 12

- Mediterranean:
  - Active: 2

- North-western Europe:
  - Active: 92
  - Under development: 70

- Asia-Pacific:
  - Active: 30
  - Under development: 92

Source: DNV
The national perspective: 30G by 2030

Currently operating: 42 MW
- Block Island Wind Farm
- Coastal Virginia Project

Source: NREL
How offshore wind farms work
Why offshore wind here?

Data Source: AWS Truepower 0-50nm; NREL WIND Toolkit beyond 50nm.
Why offshore wind here?
Why offshore wind here?
New Jersey leases and procurements

North Lease Area:
Atlantic Shores

South Lease Area:
Ørsted

New Jersey State Goal:
11G by 2040

Procurement awards to date:
Over 3.7G
Offshore wind: regulations and permitting

Source: BOEM
Offshore wind for New Jersey: Opportunities and challenges

Opportunities

• Economic development
• Environmental benefits
• Climate change mitigation
• Reliable energy supply

Challenges

• Interconnection
• Stakeholder concerns
• Supply chain constraints and costs
The falling cost of offshore wind

Source: NREL
Why the cost of offshore wind is falling

• Costs have dropped over 60% in the last five years in Europe

• Technology development, including larger turbines

• Experienced supply chain, including specialized vessels and handling

• In the US, a project pipeline assuring payoff of supply chain investments
The economic development benefits of offshore wind

• Job creation, through the development and construction and then operation of the wind farm system itself (turbines, foundations, cables, substations), but also:
  – Manufacturing facilities
  – Ports
  – Vessels

• SIOW’s study: $109 billion revenue opportunity to businesses in the offshore wind power supply chain by 2030

• American Wind Energy Association’s study in 2020: 83,000 jobs by 2030
New Jersey’s ports are perfect for offshore wind

Public and private sector spending that will propel New Jersey forward as a regional hub for offshore wind.
Port of Paulsboro
New Jersey Wind Port, Salem County

The nation’s first purpose-built offshore wind marshaling port, furthering New Jersey’s position as a hub for the U.S. offshore wind industry.
Role of research and academia

- Technical
- Environmental
- Social
- Economic
Kris Ohleth
Director
Kris@OffshoreWindPower.org
(201) 850-3690
World Café Overview

Wade Trappe, Professor and Associate Dean for Academic Programs, School of Engineering

trappe@soe.rutgers.edu
World Café

- You probably Googled it... so what is the “World Café?”
  - It is a conversational process to generate ideas through multidisciplinary group discussion
  - The café part: tables provide the ambience of a “café”

- Operationally:
  - The Table Leader and Scribe will move from table to table
  - For each round, the Table Leader will guide the discussion and the Scribe will take notes
  - Each round is 20 minutes
World Café

• The information that is gathered at the World Café will be compiled into a white paper report after the Symposium

• The Table Leader is critical! This person...
  – Will guide the discussion
  – Pose questions
  – Ensure that new ideas are uncovered

• The Scribe is important too! This person...
  – Will stay with their assigned Table Leader
  – Listen to the table conversation and take notes
Topic A: Benefits and Risks of Offshore Wind

*Upsides and downsides associated offshore wind energy (OSW)*

- What are the potential benefits associated with OSW?
  - Energy contributions
  - Environmental
  - Social
  - New spinoff business/industries?

- What are the potential negative aspects associated with OSW?
  - Regularity of energy generation
  - Environmental and ecological
  - Societal and infrastructure

- How do these benefits and risks compare with traditional energy technologies?
Topic B: Hurdles Facing Offshore Wind

What are the technical, economic, and social hurdles that OSW faces?

- What are the technical hurdles?
  - Transmission and energy storage
  - Durability of platforms
- What are the economic hurdles?
  - Investments
  - Pricing structures
- What are the social hurdles?
  - Equity
- Other hurdles? What are various legacy energy technologies that will be impacted by adoption of OSW?
- What pushback can be expected from legacy energy industry?
  - Will we need to offer safeguards to legacy energy to smooth transition and adoption of OSW?
- Can man-made and nature-provided energy co-exist easily on the grid?
- Should legacy and sustainable energy ultimately co-exist?
Topic C: Partnerships Needed for Social and Economic Viability of Offshore Wind

*Partnerships needed for social and economic viability of OSW?*

- What are types of partnerships and agreements are needed in the next 5 to 10 years to grow this new industry?

- Who “needs to talk to” who in order for this to work?

- How do we encourage investment and deployment?

- How do we encourage social buy-in?

- Do we need to create “standards” for OSW?
Topic D: Offshore Wind Workforce Development

Issues surrounding Workforce Development

- What kinds of job opportunities will OSW generate?
  - Which occupations? What skills are needed for these occupations?
- How prepared are we to train and build a diverse workforce for the industry?
  - Are there existing programs in NJ that can help prepare a diverse workforce and advance equity?
  - What is missing from the current workforce development landscape?
- Are there certain models of workforce development that are best suited for the design, construction, operation, and maintenance phases of OSW?
- What types of investments are needed to build these solutions?
World Café

- Please check your name badge for your table number and assigned room

  - Tables 1, 2, 3, 4 will report to 1st Floor Concepts Lab
  - Tables 5, 6, 7, 8 will report to Room 206
  - Tables 9, 10, 11, 12 will report to Room 208
  - Tables 13, 14, 15, 16 will report to Room 402