



A Roadmap for Success:

NEW JERSEY'S OFFSHORE WIND STRATEGIC PLAN

GENERAL STAKEHOLDER MEETING

Mercer County Community College
1200 Old Trenton Rd, West Windsor, NJ 08550
Wednesday, December 5, 2018 6:00 pm – 8:00 pm



Opening

REMARKS



Ken Sheehan
New Jersey Board of Public Utilities



New Jersey Offshore Wind

WHY IS IT IMPORTANT FOR THE STATE?



Anne Marie McShea

New Jersey Board of Public Utilities

Stephen Myers

New Jersey Department of Environmental Protection

Nicholas Toth

New Jersey Department of Labor & Workforce Development

Maciek Bury

New Jersey Economic Development Agency



Offshore Wind Expert:

EXPERIENCE FROM A DEVELOPER



Andy Geissbuehler
BVG Associates





Environmentally Responsible

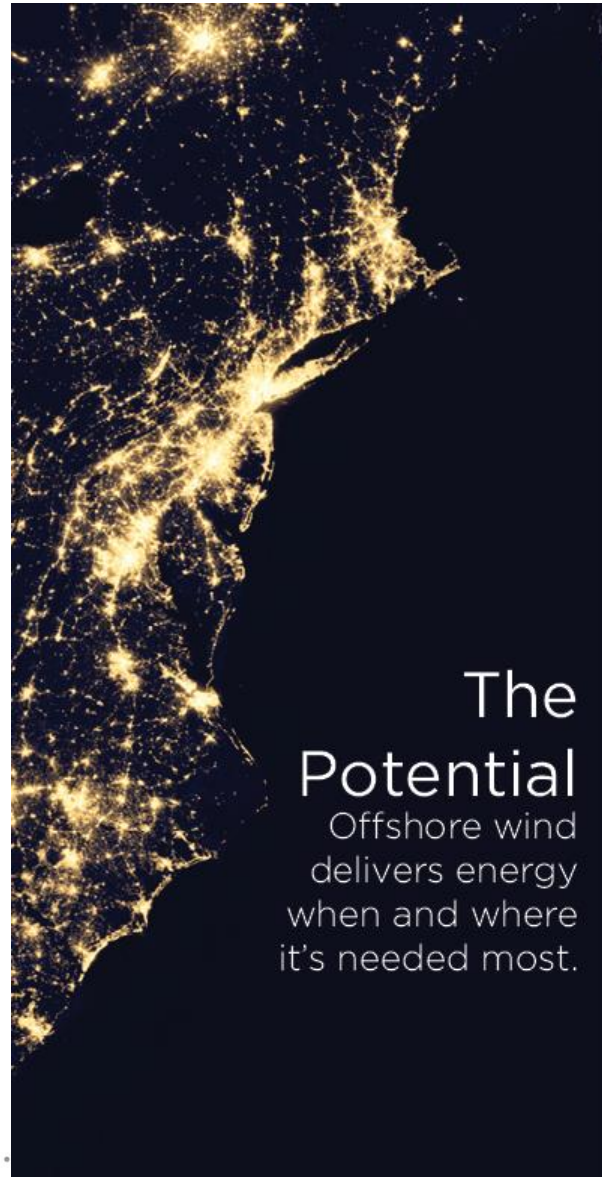
OFFSHORE WIND DEVELOPMENT

Doug O'Malley
Environment New Jersey

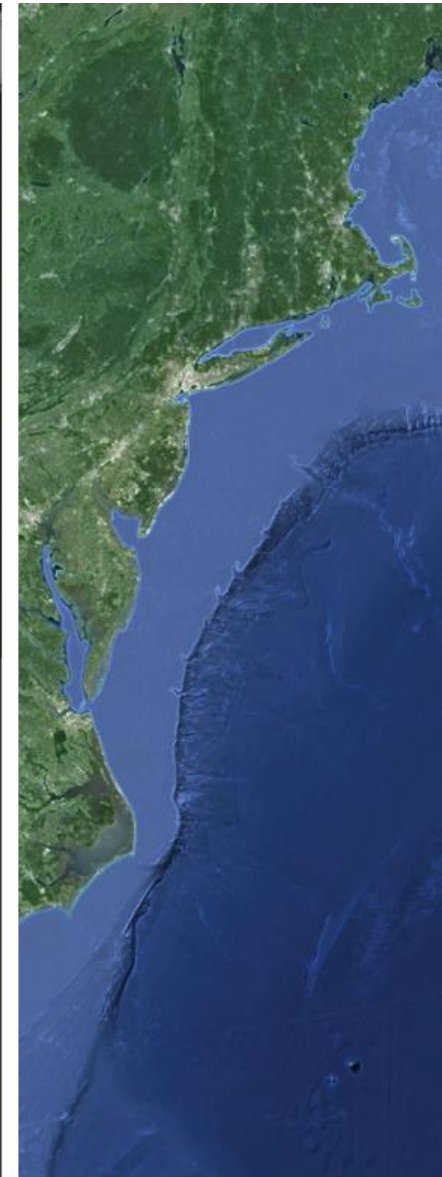
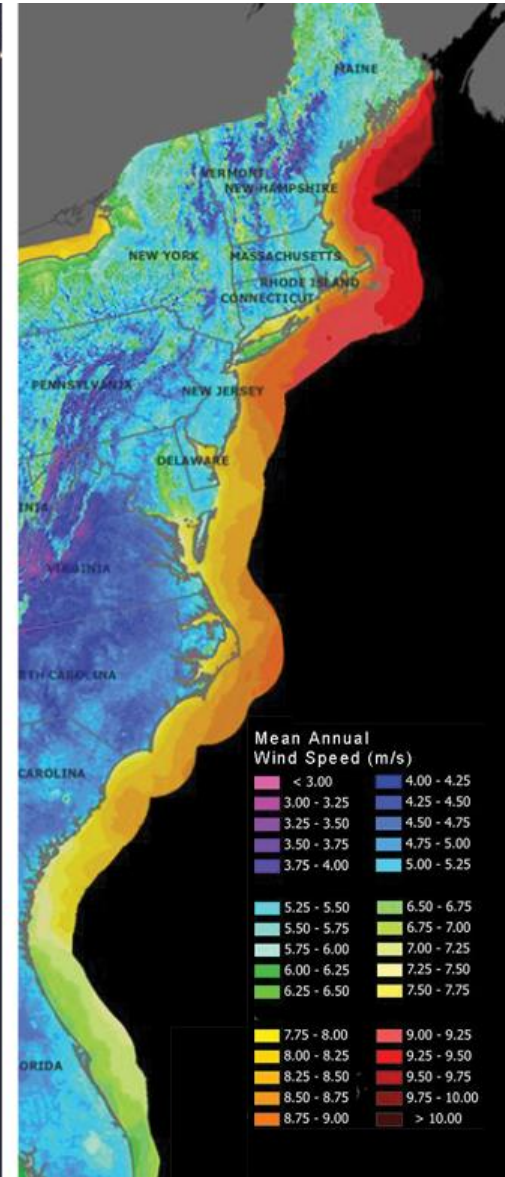


Why Offshore Wind Power?

1. **A Critical Climate Change Solution:** America's abundant offshore wind resource is a game-changer for transitioning to a clean energy economy
2. Available in **close proximity to America's largest electricity markets** currently facing significant coal & nuclear plant retirements
3. Energy production **corresponds with peak electricity demand**, offering an increasingly valuable & cost-competitive energy choice
4. Opportunity to create **hundreds of thousands of jobs** & spark massive economic development for coastal & inland communities
5. **Offshore wind power can be developed responsibly with minimal impacts to coastal & marine wildlife**



The
Potential
Offshore wind
delivers energy
when and where
it's needed most.



U.S. Offshore Wind Power Market Finally Taking Shape

State Market Commitments: **8,480 MW by 2030!**

- **NJ: 3,500 MW by 2030** (increased state goal passed 2018; open solicitation for 1,100 MW)
- **NY: 2,400 MW by 2030** (Gov. commitment; open solicitation for 800 MW or more)
- **MA: 1,600 MW by 2027** (state legislation passed 2016; expansion authorized in 2018; RFP for 800 MW expected early 2019)
- **MD: 368 MW projects committed** (2 projects awarded ORECs May 2017)
- **RI: 400 MW project committed** (awarded May 2018; open clean energy RFP)
- **CT: 200 MW project committed** (awarded June 2018; open clean energy RFP)
- **VA: 12 MW demonstration project committed** (August 2018 Gov. announcement)



U.S. Offshore Wind Projects Moving Forward

- **America's 1st offshore wind project operating successfully since late 2016:** Block Island Wind Farm - **30 MW online**
- **7 Projects Awarded Contracts &/or ORECs: 1,870 MW by 2022**
 - **MA:** *Vineyard Wind* (**800 MW** PPA in process for 800 MW by 2021/22)
 - **RI:** *Revolution Wind* (**400 MW PPA** in process for 400 MW by 2021)
 - **MD:** *MD Offshore Wind Project* (**248 MW** OREC award by 2020)
Skipjack Wind Farm (**120 MW** OREC award by 2022)
 - **CT:** *Revolution Wind* (**200 MW PPA** in process by 2022)
 - **NY:** *South Fork Wind Farm* (**130 MW** contract w/LIPA by 2022)
 - **VA:** *Coastal Virginia Offshore Wind Project* (**12 MW** by 2020)



Where Will Those 8,500 MW Be Built?

BOEM Office of Renewable Energy Programs: Atlantic Leasing & Permitting Process

Leasing

12 active wind energy leases

Upcoming lease sales in MA (2018) and NY Bight (2020)

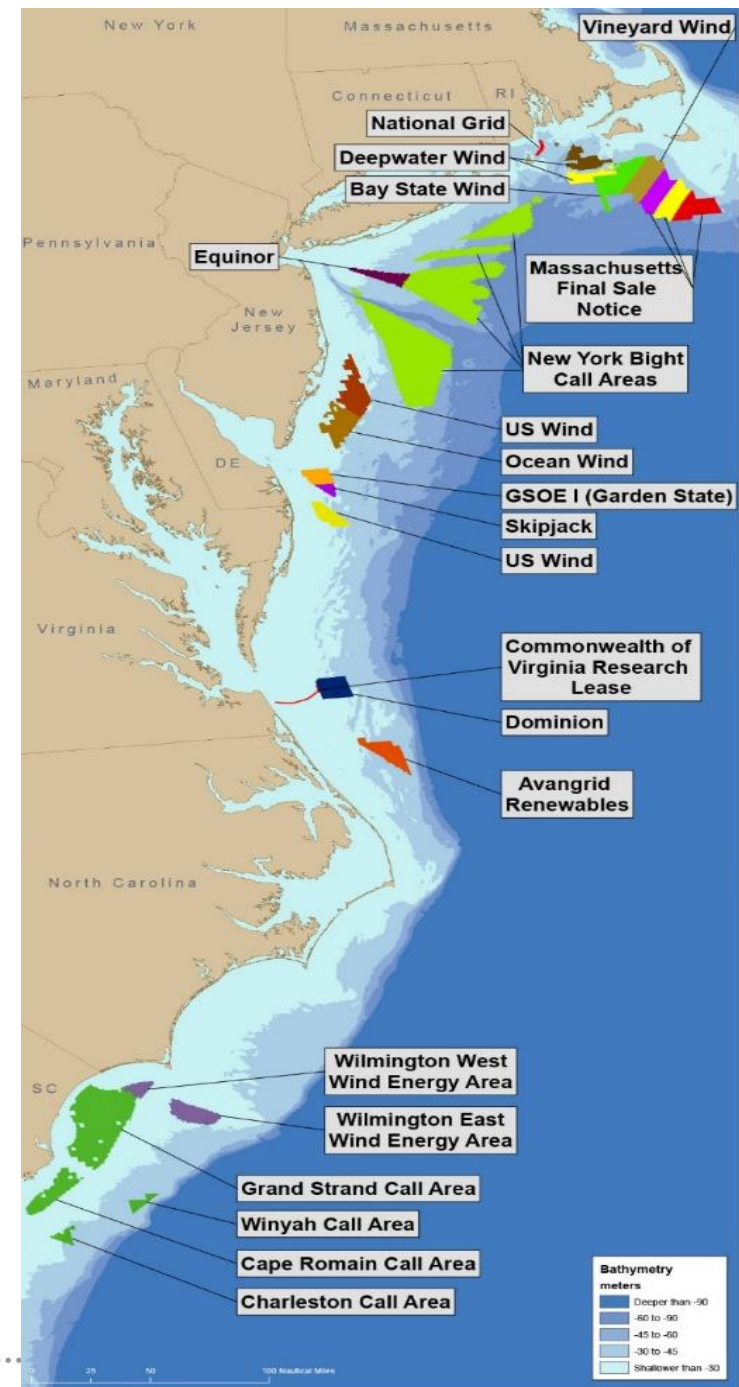
Site Assessment Plans (SAP)

7 approved (MA, RI, VA, MD, MA, NJ, NY)

Construction and Operations Plans (COP)

2 processing (Vineyard Wind & South Fork Wind Farm)

www.boem.gov/Renewable-Energy/



Responsible Offshore Wind Development for New Jersey

Every megawatt of offshore wind power built for New Jersey can and must be developed responsibly in a manner that:

- ✓ protects our valuable marine and coastal resources
- ✓ maximizes job creation and other economic benefits for the state



Key Principles for Environmentally Responsible Offshore Wind Development

Guided By Science & Comprehensive Input - All siting & permitting decisions informed by:

- best available data
- effective expert & stakeholder engagement
- current ocean planning efforts
- ongoing, comprehensive monitoring

Mitigation Hierarchy Approach at All Stages of Development - Avoid, minimize, &/or offset impacts through:

- **SITING/DESIGN:** Avoid locating projects in sensitive, critical wildlife habitat areas (i.e. near shore areas, shoals, boulder reefs, etc.)
- **CONSTRUCTION:** Adjust timing & method of survey & construction activities to protect sensitive wildlife, with specific attention to highly endangered North Atlantic Right Whales
- **OPERATIONS & MAINTENANCE:** Lighting, vessel speeds
- **DECOMMISSIONING:** Ensure long-term planning for all project development sites



A Team Effort To Advance Responsibly Developed Projects

Federal Agencies

- NEPA review of all leasing decisions & development plan approvals
- Ongoing, robust stakeholder outreach & engagement
- Advance research (baseline, post-construction, cumulative impact analysis)

State Governments

- Procurement process that prioritizes responsibly developed projects
- Technical Advisory Groups to inform decision making (ie: NYSERDA Environmental & Fishing Technical Working Group; MA Habitat & Fisheries Working Groups; RI Habitat & Fisheries Advisory Boards)
- Ongoing, robust stakeholder outreach & engagement
- Permitting reviews of cable routes & near/onshore infrastructure
- Advance research (baseline, post-construction, cumulative impact analysis)

Industry

- Commitments to responsible development practices
- Ongoing, robust stakeholder outreach & engagement
- Advance research (baseline, post-construction, cumulative impact analysis)

NGOs & Other Stakeholders

- Engage early & often, in all of the above





A Road Map For Success:

NEW JERSEY'S OFFSHORE WIND STRATEGIC PLAN



RAMBOLL

Alan Shimada
Ramboll

Stantec

John Crowther
Stantec

BUSINESS
NETWORK for
OFFSHORE
WIND

William O'Hearn
The Business Network for Offshore Wind

RUTGERS
THE STATE UNIVERSITY
OF NEW JERSEY

Joseph Brodie
RU-COOL

RAMBOLL



The Board of Public Utilities ("BPU"), the Department of Environmental Protection ("DEP"), and any other New Jersey state agencies ... shall take all necessary actions ... to promote and realize the development of wind energy off the coast of New Jersey to meet a goal of 3,500 megawatts of offshore wind energy generation by 2030."

~ Executive Order 8

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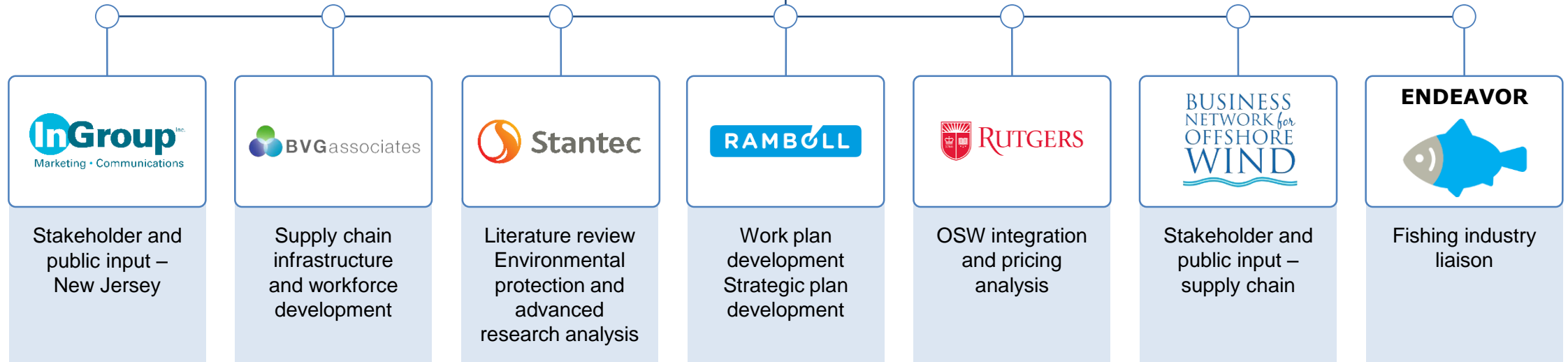
- Unique offshore wind resources
- Address global climate change threat
- Want to be THE leader in assembly and manufacturing facilities
- New Jersey ports and harbors key to attracting infrastructure to New Jersey





Our New Jersey

OFFSHORE WIND STRATEGIC PLAN DEVELOPMENT TEAM





Three Primary Elements to the

OFFSHORE WIND STRATEGIC PLAN



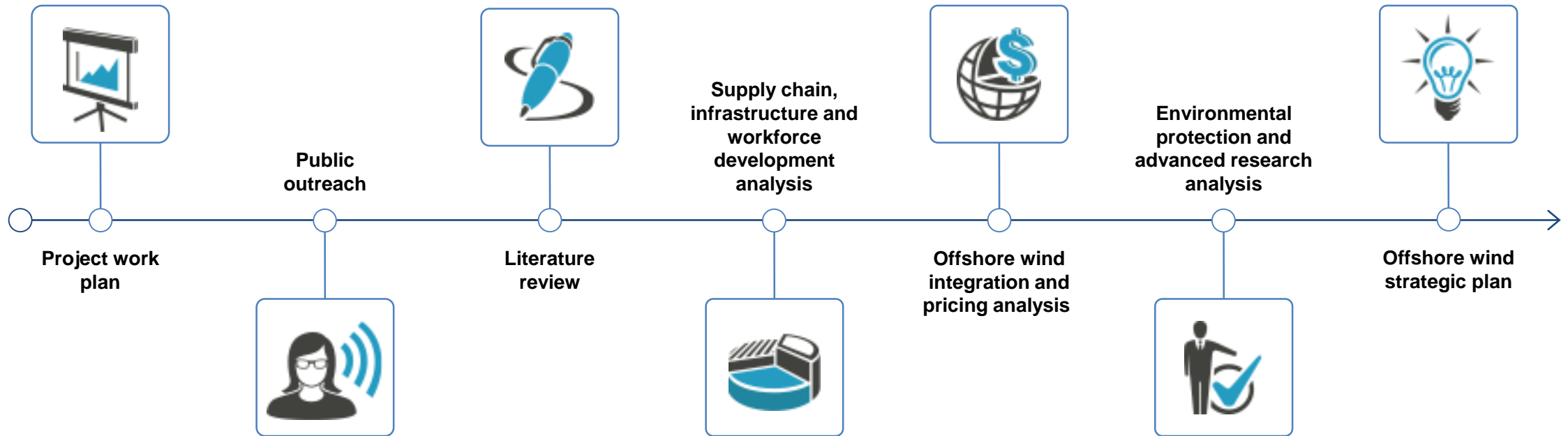
Stakeholder outreach and engagement is important throughout the process.



The New Jersey

OFFSHORE WIND STRATEGIC PLAN SCOPE OF WORK

Project scope of work includes the following:



Stakeholder outreach and engagement is important throughout the process.



SUPPLY CHAIN INFRASTRUCTURE & WORKFORCE DEVELOPMENT



Ports & Infrastructure Assessments

- Which ports can be modified to support OSW development (*assembly and installation*)
- Construction timeline of Jones Act-compliant heavy installation vessel (HIV)
- Include OSW developers in discussions
- Transmission solutions
- Opportunities for redevelopment of industrial and brownfield areas

Supply Chain Studies

- Maximize manufacturing in NJ for economic development and job creation
- Supply chain networking event – November 29, 2018 |

Workforce Development and Job Training

- Skill sets required for construction and operations and maintenance (O&M)
- Training and investment needs



ENERGY PRICING & MARKETS



Opportunities to lower energy costs

Levelized Cost of Energy (LCOE) for offshore wind project development

Interconnection to Energy Market (PJM)

- Integration of electricity generation from offshore wind into the PJM grid
- Load forecasting and optimization
- Macroeconomic impact modeling (e.g., wholesale electricity pricing for NJ consumers)

Offshore Renewable Energy Credits (OREC) Pricing

- Pricing analyses
- NJ state economic impact

Impacts of technological advancement on economics of offshore wind development



ENVIRONMENTAL PROTECTION



Multi-tiered overlay analysis

- Built off of earlier studies completed by the State of New Jersey
- Individual layers to be weighted by importance

Information includes

- Biological systems, including birds, mammals, sea turtles and fish and fisheries
- Atmospheric and oceanographic conditions
- Geotechnical conditions of the ocean floor

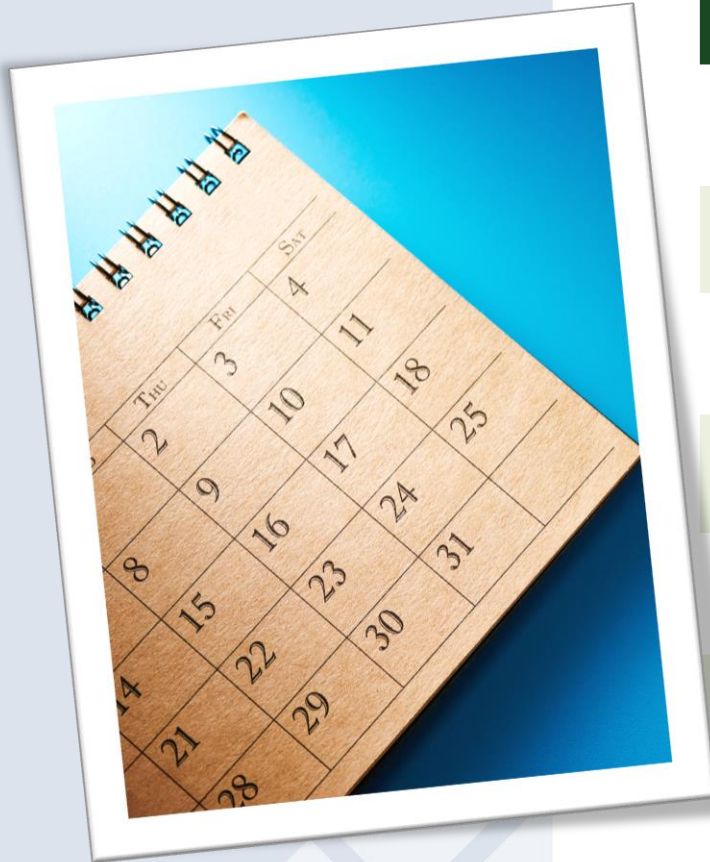
Analyses to include

- Sensitive areas analysis
- Model and mitigation integration
- Potential development scenarios
- Environmental and economic impact on commercial and recreational fisheries
- Stakeholder input





SCHEDULE



Milestone	Projected Date
Data gathering and model development	August – December 2018
Initial stakeholder engagement	December 2018
Initial modeling and analysis	January – February 2019
Subject area specific stakeholder engagement meetings	January – April 2019
Report on Initial Analysis	April 2019
Preliminary Recommendations to NJ BPU	May 2019
Draft Offshore Wind Strategic Plan	June 2019



***Your input
will help
structure the
Offshore Wind
Strategic Plan.***

PLEASE PARTICIPATE

**New Jersey Board of Public Utilities invites
you to become engaged:**

- **General Public Meetings**
- **Issues-Focused Meetings on:**
 - Environmental Protection
 - Commercial and Recreational Fisheries
 - Economic Development, Ports, Harbors, and Supply Chain
 - Energy Pricing and Markets
- **Email comments** to Offshore.Wind@bpu.nj.gov
- **Get more information** on New Jersey's offshore wind initiatives at www.NJCleanenergy.com/NJ-Offshore-Wind
- **Follow the Conversation on NJ offshore wind**
[#OffshoreWindNJ](https://twitter.com/OffshoreWindNJ)





PUBLIC Q&A





***Your input
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