



NYSERDA

New York State Offshore Wind Program Updates December 2022

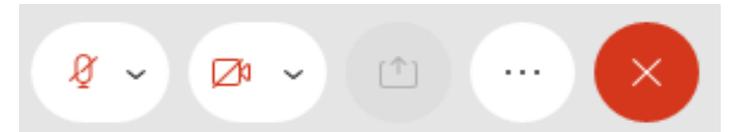


Meeting Procedures

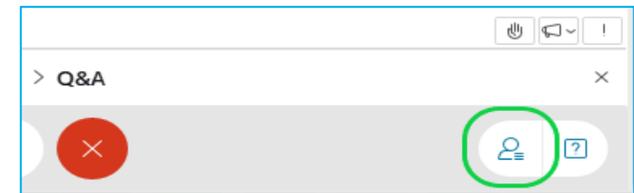
Webinar recording and presentation will be available at wind.ny.gov

Participation for Members of the Public:

- > Members of the public will be muted upon entry.
- > Questions and comments may be submitted in writing through the Q&A feature at any time during the event.
- > If technical problems arise, please contact Sal.Graven@nyserda.ny.gov



You'll see  when your microphone is muted



NYSERDA's Offshore Wind Team

Name	Role
Georges Sassine	Vice President Large Scale Renewables
Gregory Lampman	Director Offshore Wind
Jeremy Magliaro	Program Manager Environmental Research
Sherryll Huber	Senior Project Manager Offshore Wind Portfolio
Laila El-Ashmawy	Offshore Wind Procurement Manager
Jessica Dealy	Senior Policy Advisor Stakeholder Engagement & Workforce Development
Peter Lion	Senior Advisor Supply Chain and Economic Development Benefits
Kate McClellan Press	Senior Project Manager Environment and Wildlife
Morgan Brunbauer	Offshore Wind Marine Fisheries Manager
Janna Herndon	Offshore Wind Outreach and Engagement Manager
Tess Arzu	Offshore Wind Special Projects Manager

Contact Us at OffshoreWind@nyserda.ny.gov

Agenda

- New York State Project Updates
- New York 2022 OREC Solicitation Updates
- Environmental and Fisheries Engagement and Research
- New York State Jobs and Workforce Development
- New York State Supply Chain Updates
- Q&A

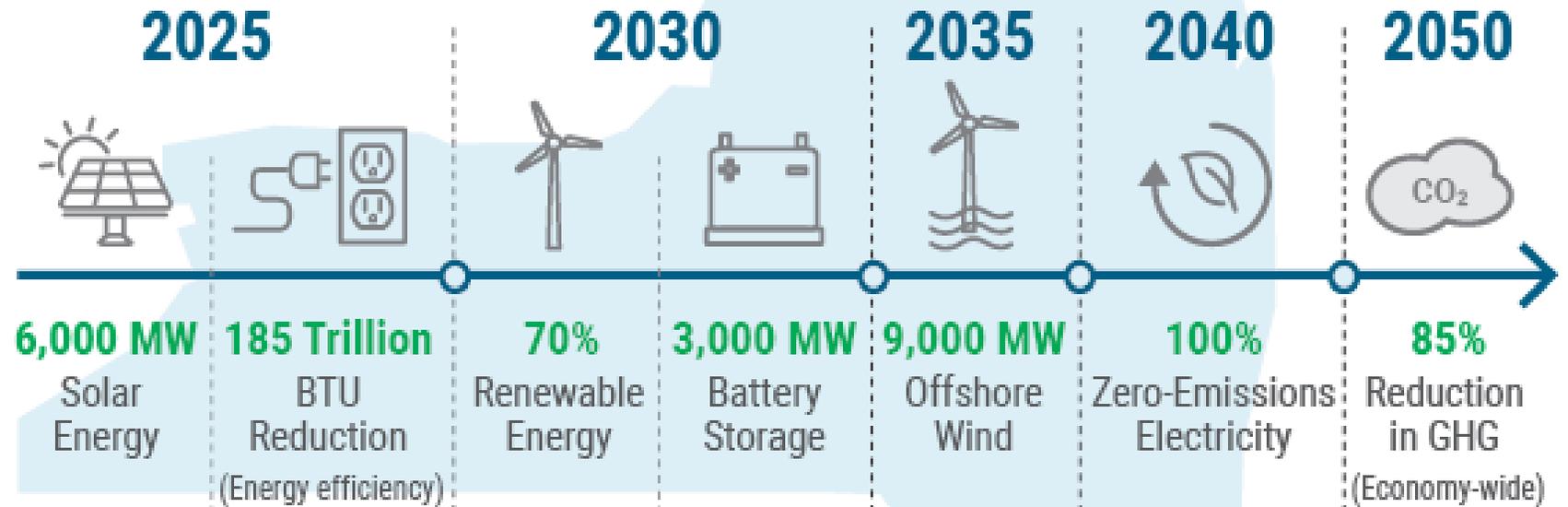
**New York State
Clean Energy Goals
and Offshore Wind Project Updates**

New York's Clean Energy Goals



**9,000 MW of
offshore wind
by 2035**

Under the Climate Leadership and Community Protection Act (2019)



More than 4,300 MW in Active Development

Nation-Leading Five Offshore Wind Projects

- > More than **6,800** direct jobs and combined economic activity of **\$12.1 billion** statewide

Recent Project Milestones:

- > Equinor launches **\$5 million clean energy community grant program (Ecosystem Fund)**
- > Bureau of Ocean Energy Management (BOEM) releases **Draft Environmental Impact Statement (DEIS) for Empire Wind**
 - **Public comment period open NOW**
 - **Final virtual public meeting TODAY at 1:00pm.** Visit BOEM's Empire Wind webpage to register.
- > BOEM releases **DEIS for Sunrise Wind**
 - **Public comment period open NOW**
 - Visit BOEM's Sunrise Wind webpage to register for virtual public meetings.
- > Sunrise Wind **transmission line approved** by New York State Public Service Commission

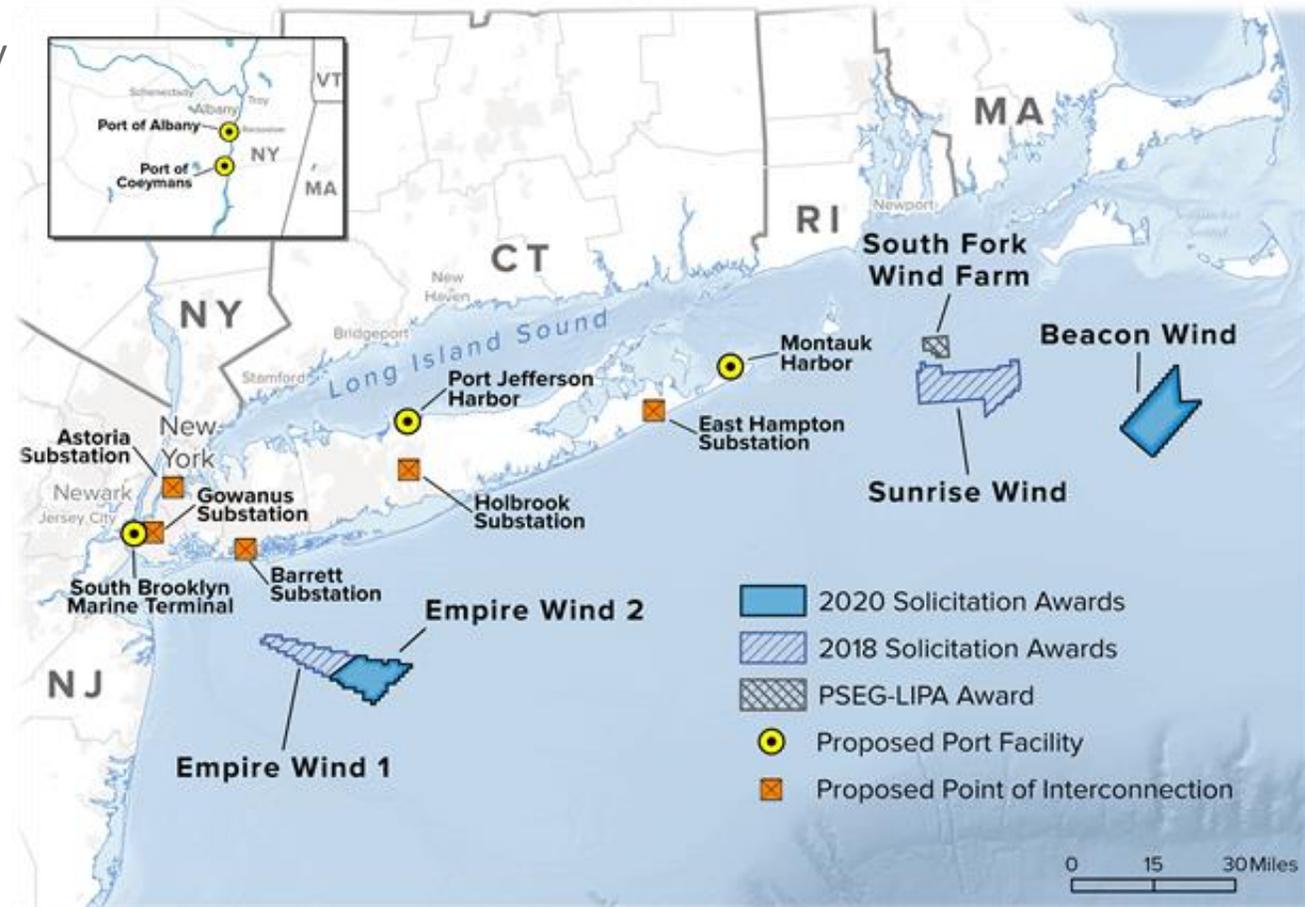


Photo: EEW SPC/Andreas Duerst, Studio 3



Empire Wind 1: Foundation and Cable Fabrication, Offshore Substation Construction

Empire Wind 1: Foundation & Offshore Cable Installation

Empire Wind 1: Turbine Installation, **Expected Operational**

Empire Wind 2: **Expected Operational**

South Fork Wind Farm Operational

2022

2023

2024

2025

2026

2027

2028

2030

Sunrise Wind: Vessels, Foundation and Cable Manufacturing

Sunrise Wind: Offshore and Onshore Construction

Beacon Wind: Expected Offshore and Onshore Construction

Sunrise Wind: Turbine Installation, **Expected Operational**

Beacon Wind: **Expected Operational**

NYSERDA's Third Offshore Wind Solicitation (NY3)

- First installment of \$500 million of Funding to support Investments
- Offshore Transmission Grid “Mesh-Readiness” and Optional Storage
- Prioritized Fossil-Fuel Retirements
- Stakeholder Engagement, Labor Plans and Environmental Stewardship
- Benefits to New York State Underserved Communities including Workforce Training
- 2021 NYS Public Service Law Changes: Prevailing Wage, Project Labor and Peace Agreements

Procuring at least 2,000 MW of Offshore Wind

UPDATED SCHEDULE

NY3 Solicitation Schedule	
RFP Release	July 27, 2022
Notice of Intent to Propose	December 1, 2022
Bid Submission	January 26, 2023
Award Notification	Q1 2023
Contract Execution	Q2 2023

6 Notices of Intent to Propose received, representing:

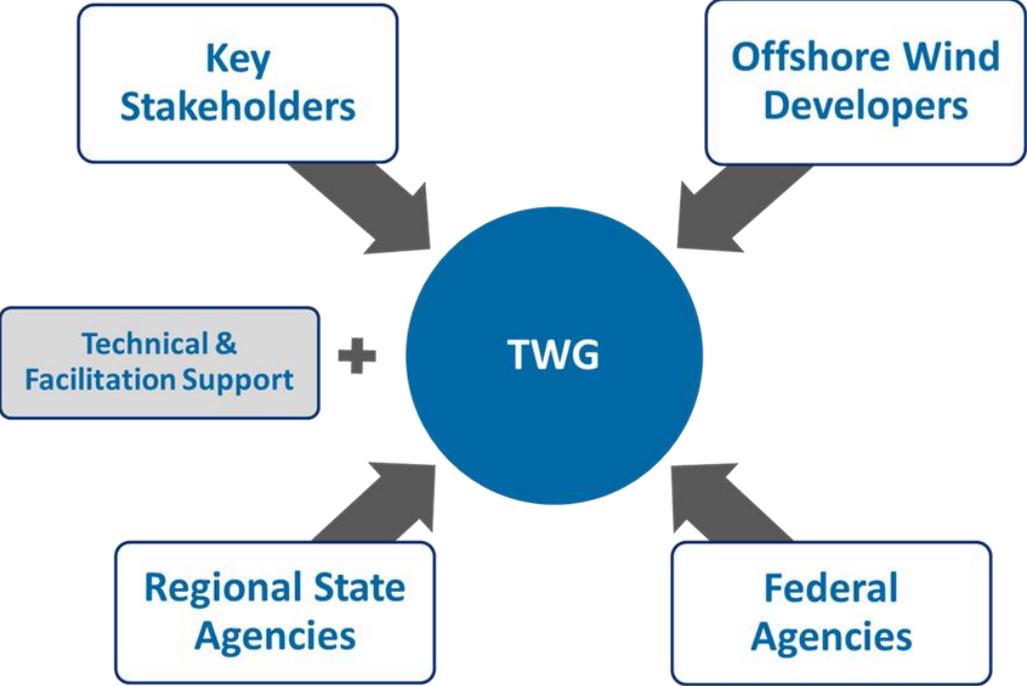
- 7 offshore lease areas totaling approximately eight gigawatts of new generation capacity
- Project developers: Attentive Energy, Bay State Wind, Beacon Wind, Community Offshore Wind, Invenergy Wind Offshore, and Vineyard Offshore

Environmental and Fisheries Engagement and Research

Technical Working Groups (TWGs)

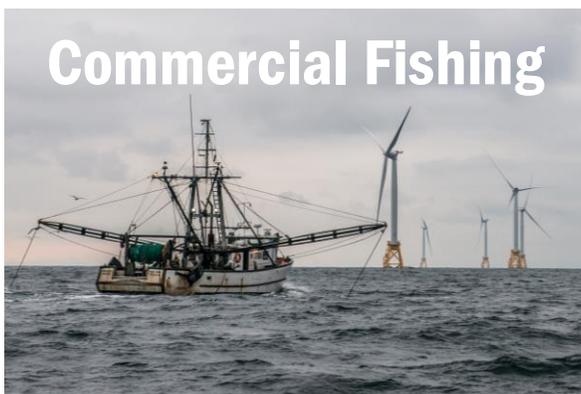
Cost-Effective and Responsible Advancement of Offshore Wind for New York

Collaborative Engagement with Key Stakeholders



Technical Working Groups (TWGs)

On-going Activities: Visit www.nyetwg.com and www.nyftwg.com



- TWGs are critical stewards of New York State's offshore wind projects and provide valuable representation, technical insight, and constructive solutions
- On-going supporting activities include:
 - Identification of priority environmental and fisheries research needs
 - Collaboration with regional science organizations (Responsible Offshore Science Alliance, Regional Wildlife Science Collaborative for Offshore Wind) and other federal, state, and stakeholder efforts
 - Review and evolution of State offshore wind project Environmental and Fisheries Mitigation Plans
 - Engagement and education about efforts to understand, minimize, and mitigate potential impacts to the environment and fisheries from offshore wind development

Fisheries Engagement Updates

Outreach to the Recreational Fishing Community at Regional Boat Shows



Regional Fisheries Compensation

Regional states are supporting an initiative to compensate the fishing industry for economic losses associated with offshore wind development.

Goal 1: **Develop a process** that is fair, equitable, and transparent across the region and engage with the fishing and offshore wind industries to meet stakeholder needs.

Goal 2: **To establish an administrator** that would collect, hold, and dispense funds to impacted members of the fishing community

Next Steps:

Request for Information (RFI) released on December 12, with Comments due January 31.

For Details: <https://offshorewindpower.org/fisheries-mitigation-project>

Environmental Engagement Updates

Highlights from E-TWG:

- Atlantic Offshore Wind Environmental Research Priorities Database

[Download the complete database as a spreadsheet here.](#)

[Download the synthesized recommendations below as a spreadsheet here.](#)

Research Recommendation	Stressor/Topic	Receptor	Development Phase	Citations
<p>Aggregation of Marine Life at Structures</p> <p>Understand effects of structures as aggregating devices for marine life, including effects on behavior, migratory patterns, recruitment, and foraging opportunities.</p>	Attraction, Habitat Change	Bats, Birds, Invertebrates, Fishes, Marine mammals, Sea turtles	Construction, Operations & Maintenance	State of Maine 2021, Responsible Offshore Development Alliance (RODA) 2021, Degraer et al. 2021, Boehlert et al. 2008, Kelly (2020), ODFW (2020a)
<p>Baseline Bat Activity and Occurrence Offshore</p> <p>Understand patterns of bat activity, movement, and habitat use in the offshore environment and how they change depending on weather and time of year, to assess the degree of likely interactions with offshore wind energy facilities.</p>	Baseline	Bats	Pre-construction	Hein et al. 2021, Flick et al. 2021, State of Maine 2021
<p>Baseline Chemical Contamination</p>				

- Development of Guidance for Pre- and Post-Construction Monitoring to Detect Changes in Marine Bird Distributions and Habitat Use Related to Offshore Wind Development

2022 State of the Science Workshop on Wildlife and Offshore Wind Energy



Building on Existing Knowledge and Emerging Collaborations

- Attended by over 450 stakeholders engaged with environmental and wildlife research relevant to offshore wind energy development

Workshop Goals

- Engage and inform interested stakeholders
- Promote regional coordination
- Promote collaboration through expert information exchange and discussion

Session Recordings Available at nyetwg.com

Advancing Research to Support Responsible Development

NYSERDA-funded research plays a critical role in informing responsible offshore wind development

New Studies Available:

- Offshore Wind Ports: Cumulative Impacts Study
- Offshore Wind Ports: Navigation Assessment
- Commercial Fishing Access Report
- Fisheries Knowledge Trust Final Report

Ongoing Research

- Development of Monitoring Protocols and Guidance for Automated Radio Telemetry Studies at Offshore Wind Farms
- Multi-Scale Relationships between Marine Predators and Forage Fish
- Ecosystem Dynamics: An Examination of the Relationships between Environmental Processes, Primary Productivity, and Distribution of Species at Higher Trophic Levels

Offshore Wind Ports: Cumulative Impacts Study

Goal of study: To assist with planning for the current and upcoming offshore wind energy projects.

Scope: Currently identified and new port options in the Capital Region, Upper Hudson Valley, New York Harbor, and North Shore of Long Island.

Methodology: A robust analysis of cumulative effects for use by parties engaged in developing offshore wind projects, related infrastructure, and port-related activities to support, augment, and streamline individual environmental review requirements.

Key findings: The overall cumulative impact for port development would be minimal for most resource areas except for key sensitive resources which can be mitigated by undertaking proper environmental review and permitting processes, and the use of best management mitigation measures.



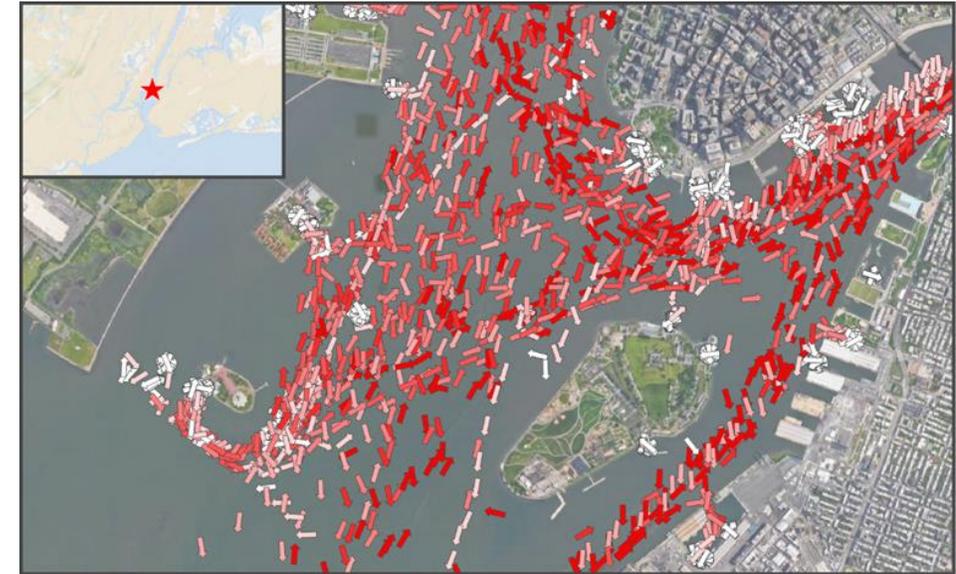
Offshore Wind Ports: Navigation Assessment

Goal of study: To understand potential changes in port usage relating to offshore wind energy development and assess how these changes will affect shipping and navigation

Scope: An assessment of New York State's five active offshore wind-related ports (Port of Albany, Port of Coeymans, South Brooklyn Marine Terminal, Port Jefferson Harbor, and Port of Montauk Harbor), and those that are representative of future offshore wind-related port uses.

Methodology: A vessel traffic model and hotspot analysis, to feed into future Navigation Safety Risk Assessments.

Key findings: The annual rate of growth was determined to be 0.8% per year, applicable to all vessel types analyzed for non-OSW and OSW activities. The largest increase is found at Ambrose Channel, Tomkins Cove, and Port of Coeymans, where OSW vessels correspond to an increase of 2–4%.



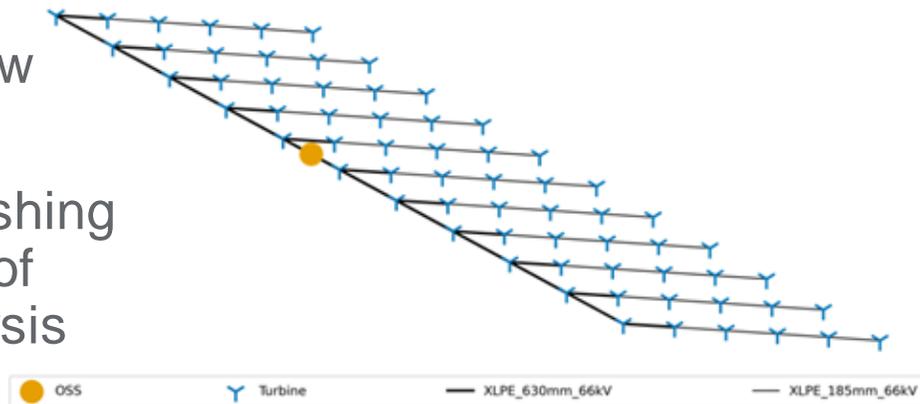
Collaborative Development of Strategies and Tools to Address Commercial Fishing Access

Goal of study: To collaboratively develop technical strategies and tools to minimize disruption of commercial fishing within offshore wind arrays while also ensuring economical energy generation and safe operation for the offshore wind industry.

Scope: Areas of Hudson North and South, as identified in the New York Bight BOEM Wind Energy Area ID Process

Methodology: A robust literature review of potential impacts to fishing access, extensive interviews of selected pilot fisheries, modeling of cost and performance of different access scenarios, and an analysis of how different turbine and cable configurations could minimize impacts by investigating seabed characteristics

Key findings: The main risks to offshore wind cable infrastructure and fishing activities are summarized into two risk tables. These present the perceived risks, the engineering practices to reduce the risk level, and comments on the conditions related to each risk found in the pilot project area.



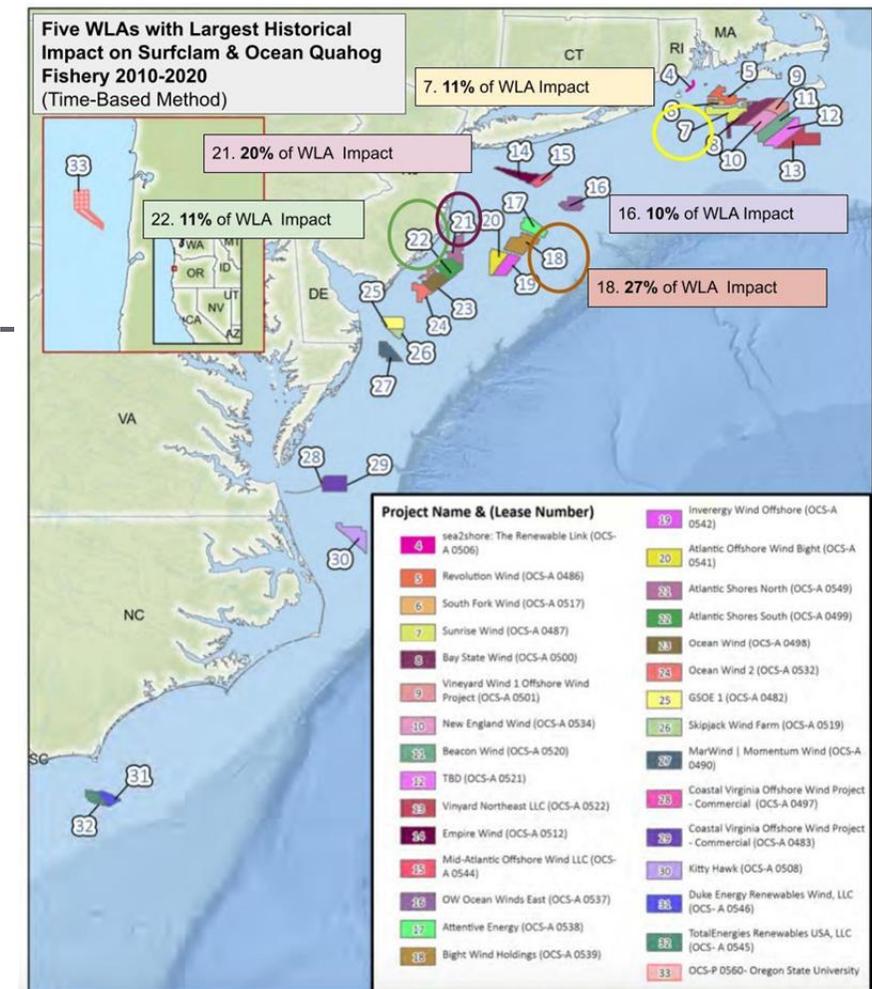
Fisheries Knowledge Trust

Goal of study: To build data infrastructure that enables the fishing industry to take knowledge and information collected and create data products to assist in planning, regulatory, or management processes.

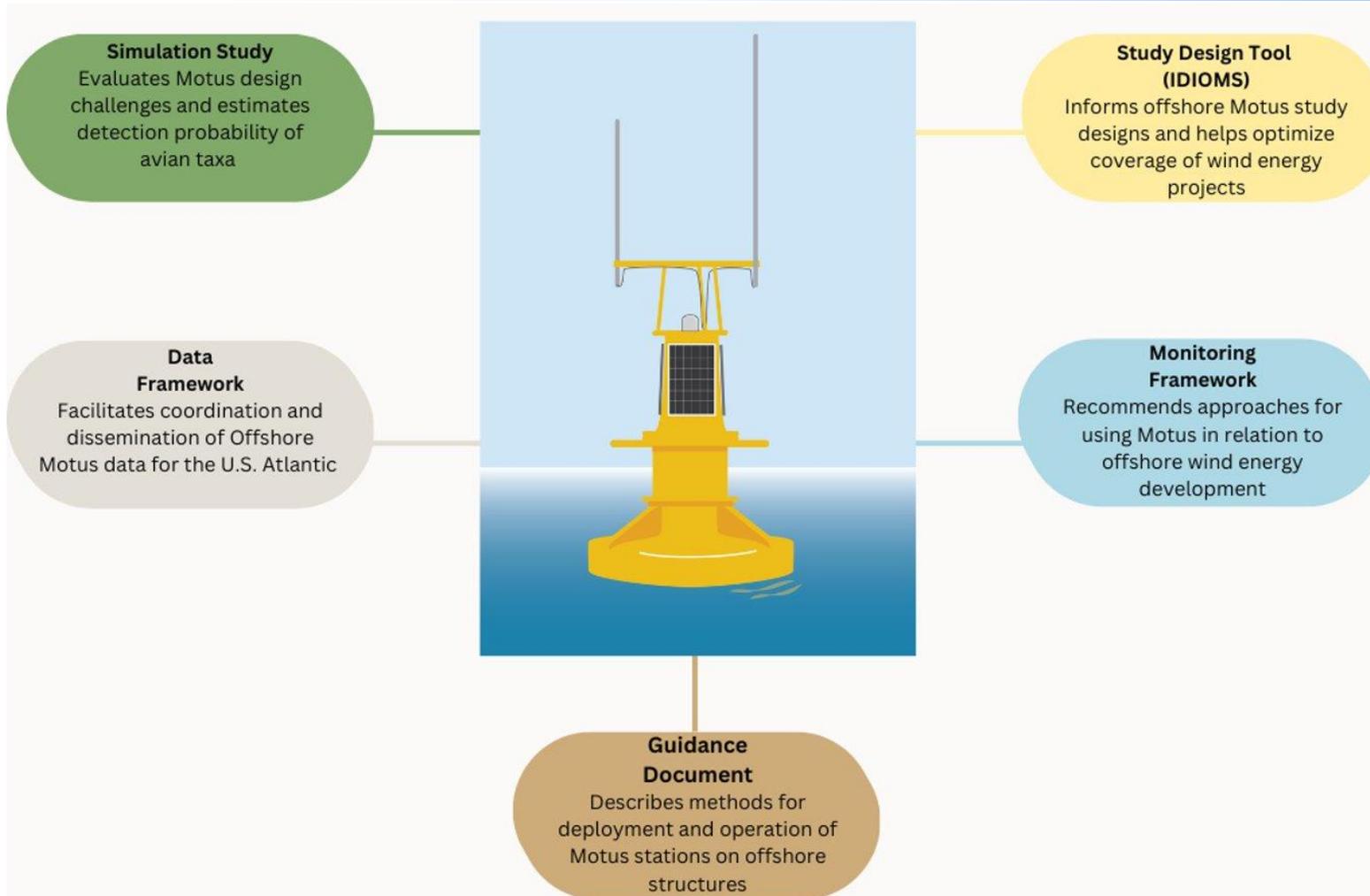
Scope: Used "test" fisheries to generate a proof of concept that effective and protected data products can be created in a cost-effective and scientifically vigorous manner.

Methodology: Development of technical and organizational structures including operating manuals and internal control measures, use of fisheries data to pressure test the system and create example data products, development of a Go-Forward Plan

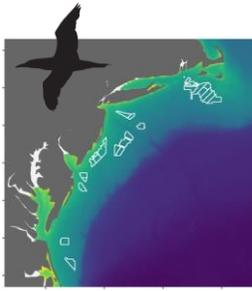
Key findings: Participation and trust by fishermen is imperative to the success of data systems that require their knowledge. The Trust could improve the understanding on "data poor" fisheries by aggregating proprietary data which can present a substantial opportunity to dramatically improve regulatory processes.



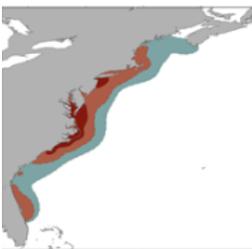
Monitoring Protocols for Automated Radio Telemetry Studies at OSW Sites



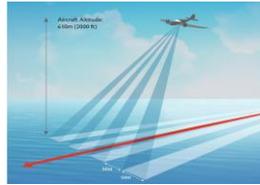
Multi-Scale Relationships between Marine Predators and Forage Fish



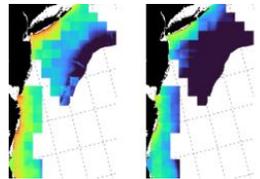
Environmental conditions influencing seabird movement



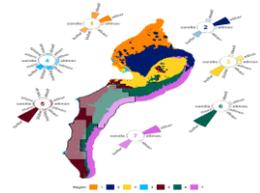
Predicted areas of high foraging activity for seabirds



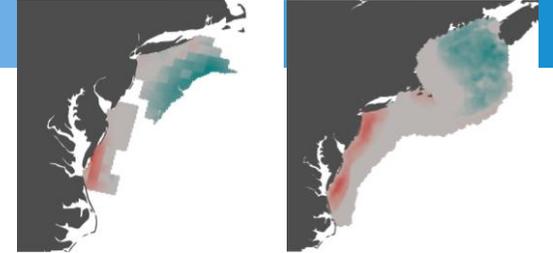
Forage fish group size for digital aerial survey data



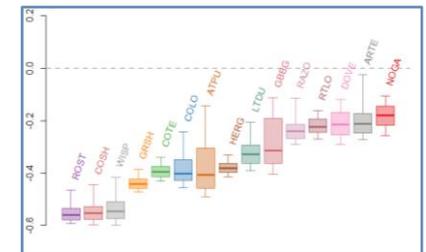
Forage fish availability estimates for the Mid-Atlantic and New York Bight



Forage fish community models that describe regional community composition



Spatial relationships between predators and forage fish occupancy and availability

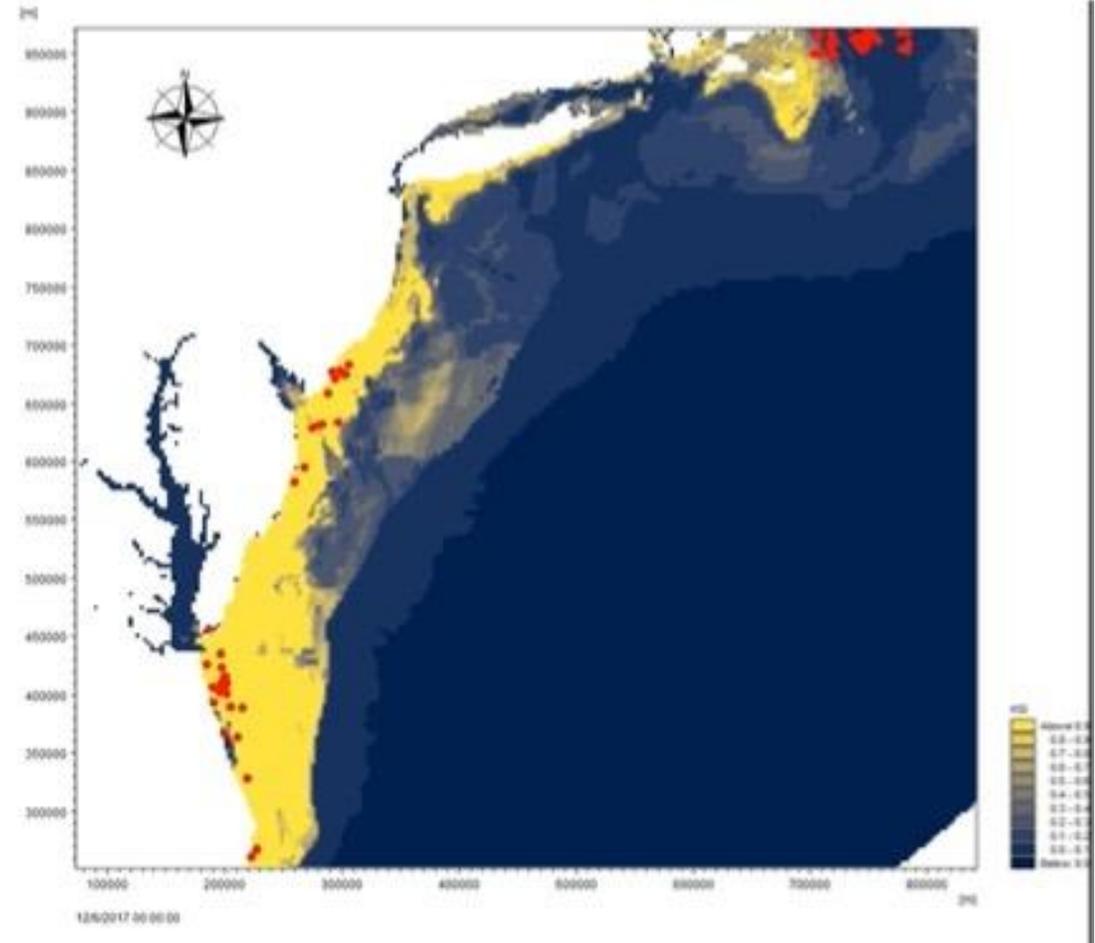


Long-term population trends for forage fish and predators

Ecosystem Dynamics Study

An examination of the relationships between environmental processes, primary productivity, and distribution of species at higher trophic levels

- Spatially and temporally dynamic information about distribution of oceanographic characteristics in the New York Bight and surrounding area
- Uses available ecosystem data to predict wildlife distribution and use patterns
- Identifies related sensitive variables (i.e., variables that have greatest effect on model outcomes) and important data gaps



Example of Agent-based model output for Red-throated Loon

Environmental and Fisheries Research Program Opportunity Notice (PON)

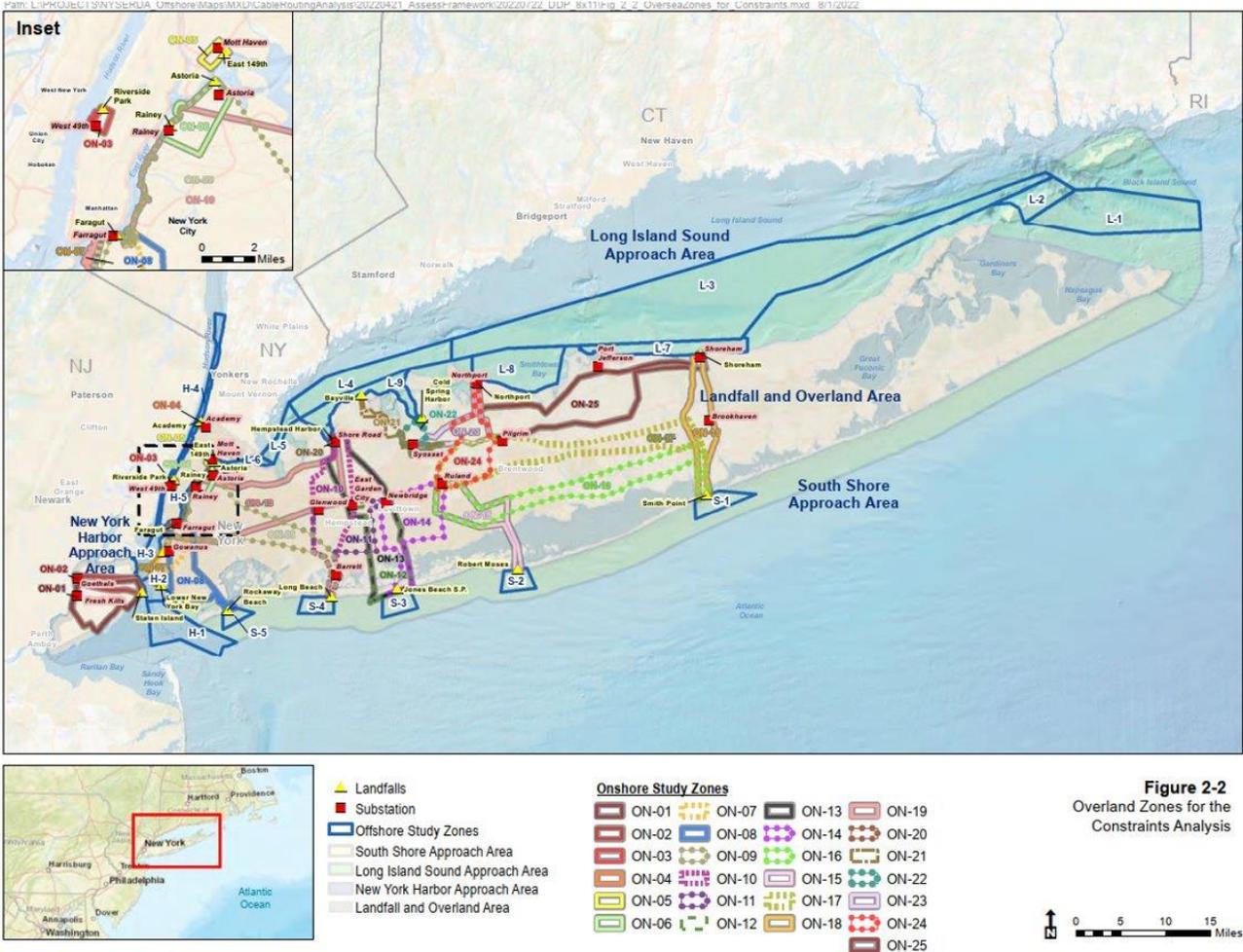
PON 5226
is OPEN
NOW!

New funding available: **\$2.5 million**

- Seeking research to improve the scientific and technical foundation for addressing key policy-relevant questions related to the development of offshore wind and stakeholder-identified environmental and fisheries concerns
- Research areas:
 - Enhancement of Sustainable Fisheries: Efforts to promote a path towards co-existence with offshore wind
 - Changes in biological characteristics of benthic ecosystems: Understanding opportunities for ecological enhancement

Proposals due: March 13, 2023

Offshore Wind Cable Corridor Constraints Assessment



Goals

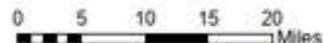
- Increase understanding and document **environmental, technical and stakeholder constraints, opportunities, concerns, impacts, and risks** of potential undersea and overland cable corridors and associated landings
- **Inform potential future policy actions** that maximize the benefits of OSW and minimize conflicts

Cable Corridor Constraints Assessment Study Area



- Substation
- State Line
- BOEM Lease Areas
- South Shore Approach Area
- Long Island Sound Approach Area
- New York Harbor Approach Area
- Landfall and Overland Area

Figure 1-1
Study Area and Approach Areas



Inputs to the Assessment - Cable Working Group

- Jurisdiction and regulatory authority covers major permitting requirements for offshore wind cables
- Met approximately monthly throughout the past year
- Guided systematic evaluation of opportunities, constraints, concerns, impacts, and risks of zones, subzones, and associated landings
- Evaluated methods and constraints analysis to ensure that results aligned with agency priorities
- Examined opportunities to avoid, minimize, and mitigate impacts, and balanced risks and opportunities of options to route multiple OSW cables

CWG Members:

NYSERDA

NYS Department of Environmental
Conservation

NYS Department of State

NYS Department of Transportation

NYS Office of General Services

NYS Department of Public Service

Inputs to the Assessment

Stakeholder Input

- > Request for Information (RFI) on **Draft Constraints Assessment Framework** (Dec. 2021 – Feb. 2022)
- > Webinars with the Environmental, Fisheries, and Maritime TWGs
- > Individual stakeholder meetings for knowledge sharing and feedback
- > Request for Information (RFI) on **Draft Constraints Assessment** (Aug. 2022 – Oct. 2022)

Previous and Ongoing Studies

- > Offshore Wind Master Plan
- > Power Grid Study
- > Offshore Wind Ports: Vessel Traffic Risk Assessment

Analysis of Constraints - Methodology

- 1. Compilation of spatial constraint layers** including natural and environmental resources, socioeconomic resources, and existing infrastructure
- 2. Delineation of undersea and onshore zones**
 - > Undersea zones = Areas with constraints of similar type and significance that may accommodate cable transit or landfall
 - > Overland zones = Areas which include multiple existing Right Of Ways that connect a landfall point to one or more Points of Interconnection
- 3. GIS analysis** of spatial distribution of each constraint layer within a zone
- 4. Assignment of overall constraint ranking** – Low, Medium, High – based on spatial distribution and professional judgment of subject matter experts and Cable Working Group

Key Findings

- Incorporate accepted siting principles based on CWG and offshore wind industry experience to support installation of multiple cables, while minimizing use of space and impacts on environmental, cultural, and social resources, such as:
 - Limit footprint
 - Apply parallel routing
 - Bundle cables
 - Limit crossings/cross at right angles
 - Avoid anchorage areas and navigation channels
- Innovation in design, construction, operation, and maintenance techniques will be required beyond prior projects to address the site-specific and unique constraints, opportunities, schedule, and costs for siting OSW cables.

Project Status and Next Steps

- NYSERDA reviewing and summarizing all RFI responses received
- Final Offshore Wind Cable Corridor Constraints Assessment anticipated early 2023
- NYSERDA and the Cable Working Group will reconvene to identify approaches to address key constraints and innovations

**New York State
Jobs and Workforce Development
Updates**

OSW Workforce Funding Opportunity!

PON 4595
is OPEN
NOW!

\$9 Million available for offshore wind workforce training and skills development: PON 4595

- Focused on projects that address projected offshore wind workforce gaps and prepare workers for high growth jobs via technical training
- NYSERDA will accept proposals requesting between \$500,000 and \$3,000,000
- Limited to lead applicants that are technical/vocational high schools, community colleges, universities, labor unions, training and job placement intermediaries, community-based organizations and non-profit organizations as well as offshore wind Original Equipment Manufacturers (OEMs), distributors, vendors, suppliers, developers, and trade associations
- Concept paper due dates: Round 1 – **January 17, 2023**; Round 2 – **March 23, 2023**; Round 3 – **June 1, 2023**

For more information, Google search for “NYSERDA funding opportunities”

Additional Funding Opportunities

Empire Wind: \$5 Million Ecosystem Fund

- Community grant program to support sustainable growth, workforce development, empowerment of underserved communities, and climate justice in New York City's emerging offshore wind ecosystem.
- Awards will range from \$100,000 to \$900,000 over a three-year period

Visit: <https://www.empirewind.com/ecosystem-fund/>

NYC Economic Development Corporation: Waterfront Pathways Program

- Provides necessary training to take part in the next generation of renewable energy and support disadvantaged communities with renewable energy jobs for the future.

Visit: <https://edc.nyc/program/offshore-wind-nyc-waterfront-pathways-program>

New York State Workforce Training Website

Career Pathways and Training Opportunities



OffshoreWindTraining.ny.gov

Career Pathways, Project Phases, Job Descriptions

Select a project phase

Planning and Development

Manufacturing and Assembly

Construction and Installation

Operations and Maintenance

Planning and Development is the initial phase for offshore wind projects that involves identifying sites for needed facilities, collecting and analyzing project data, conducting environmental reviews, securing financing and permits, designing the power plant, and securing all components required for construction. This phase takes at least two years, typically longer, depending on the project, but for New York State's projected development, this phase would take roughly seven years.

Pick a job at any career level

Entry-Level

ENGINEER

MAINTENANCE WORKER

OPERATIONS RESEARCH ANALYST

COMPUTER OCCUPATIONS

Experienced

LEAD ENGINEER

ELECTRICIAN

GENERAL AND OPERATIONS MANAGERS

SUPERVISOR

Advanced

ENGINEERING TEACHER

MASTER ELECTRICIAN

VIEW JOBS RELATED TO EACH JOB TYPE

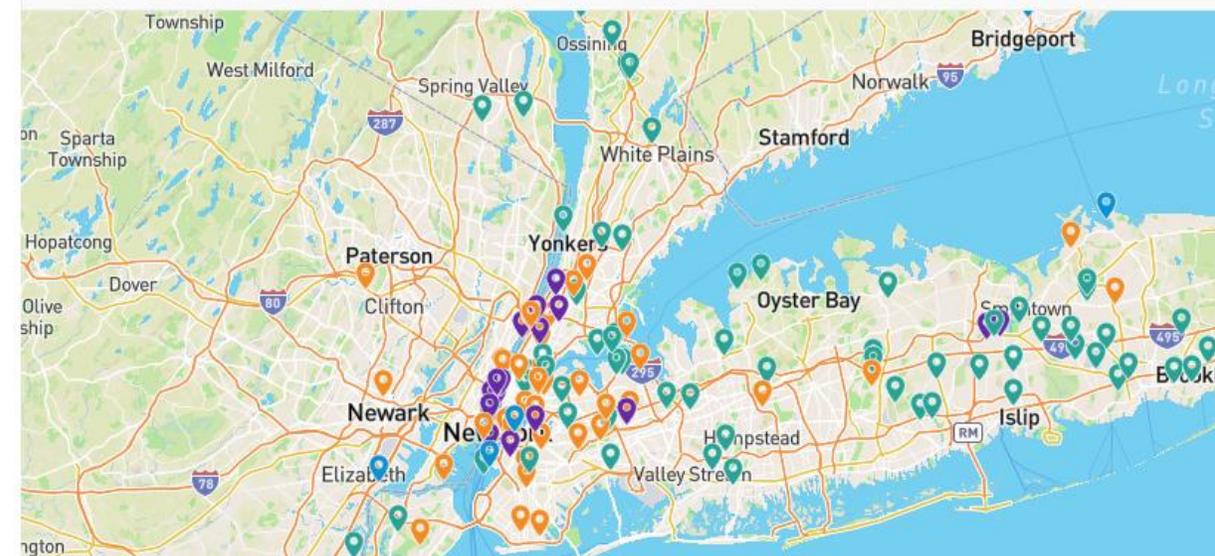
Find Training Locations

View opportunities as:

VIEW AS A MAP

VIEW AS A LIST

Apprenticeships Ports Training Facilities Direct Entry Programs



Coming in Early 2023

New York State Offshore Wind
Workforce Gap Analysis, 2022



Final Report | Report Number 22-25 | September 2022

New York State Offshore Wind Skills Analysis

- ✓ Identify the specific in-demand offshore wind occupations in New York in 2030 and potential supply gaps
- ✓ Understand occupational skill and education profiles
- ✓ Highlight regional training accessibility gaps
- ✓ Determine adjacent occupations and skills transferability potential
- ✓ Released in early 2023

Updated New York State Workforce Gap Analysis (available now!)

Awards for NYSERDA \$9 Million Workforce Training Solicitation (Round 1 – Q1 2023; Round 2 – Q2 2023; Round 3 – Q3 2023)

New York State Supply Chain Development Updates

Recap: 2022 Buffalo Supplier Forum

NYSERDA Wind Turbine Supplier Forum

December 2022 - Buffalo

- NYSERDA hosted an offshore wind supplier forum focusing on the Wind Turbine – nacelle, rotor blades and tower.
- Companies had the opportunity to learn about
 - The procurement process
 - Required qualifications as a supplier
 - Sub-components of primary component
- ~80 upstream and downstream suppliers in attendance



Recap: New York Projects Supplier Forums

Sunrise Wind Supplier Forums

June 2022 – Albany | November 2022 – Uniondale |
April 2023 – TBD

- These forums are a chance for New York companies to meet awarded suppliers and to learn about upcoming procurement opportunities to become a supplier to the Sunrise Wind Project
- Over 700 attendees and 15 Tier 1 Companies Procuring Materials, Components & Services



Equinor Supply Chain Expo Series

December 2022 – Troy | February 2023 – NYC | March 2023 – Long Island

- Equinor Renewables US is launching a series of three Supply Chain Expos to connect New York State local suppliers to opportunities in the State's new renewable energy industry.



Stay Connected and Informed

Tune in for “Learning from the Experts” webinars

- Educational webinar series featuring outside experts presenting on key offshore wind technologies, development practices, and research findings
- Visit wind.ny.gov to register
- All webinar recordings and presentations are available at nyserderda.ny.gov/osw-webinar-series

nyserderda.ny.gov

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