Introduction to Offshore Wind in New York

New York State
Offshore Wind

New York State Energy Research and Development Authority
Globally Unprecedented Ramp Up

70% renewable energy by 2030
9,000 MW of offshore wind by 2035

10,000 JOBS

ENOUGH TO POWER 6 MILLION HOMES

BILLIONS IN INFRASTRUCTURE

30% OF NEW YORK’S ELECTRICITY LOAD

NEW YORK STATE OF OPPORTUNITY. NYSERDA
Achievement of New York’s offshore wind goals will result in significant benefits across the State.
Regional Market Potential, 20GW

Offshore Wind Goals by State

- **NY**: 9 GW
- **MA**: 3.2 GW
- **MD**: 1.2 GW
- **CT**: 2 GW
- **NJ**: 3.5 GW

**BOEM Lease Areas**
- New York State BOEM Wind Planning Areas
- Primary Recommendation
- Secondary Recommendation
- Other BOEM Wind Planning Areas
BOEM

The Federal Role

> “Landlord” of lease areas
> Oversees leasing process
> Oversees all federal permitting processes: Site Assessment Plans, Construction and Operations Plans, Environmental Assessments
NYSERDA

The State Role

- Stakeholder engagement
- Research and data development
- Supply chain and workforce development
- New wind energy area recommendations
- Regulated by NYS Dept. of Public Service
- Long-term OREC contracts
Developers

The Industry Role

› Design, finance, build, and operate projects
› Supply chain planning including ports development and top-tier procurement
› Fulfill federal and state permit requirements
› Stakeholder engagement throughout development
Inaugural Solicitation, 2018
Record Competition

4 proposers
18 bids

Evaluation Criteria

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\begin{align*}
70\% & \quad \text{price} \\
20\% & \quad \text{economic benefits} \\
10\% & \quad \text{project viability}
\end{align*}
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2018 Solicitation: New York Supply Chain Opportunity

Economic Benefit Criteria
NY Supplier Opportunity Requirement
NY Supply Chain Database
Project Labor Agreements
Prevailing Wage Requirements
Advancing interactions between stakeholders

Environmental

Maritime

Commercial Fishing

Jobs and Supply Chain
NYS Investments

$200 million largest investment by any state in offshore wind port infrastructure
Fostering offshore wind by investing $15 Million in workforce development and infrastructure advancement
NYS Investments

OFFSHORE WIND JOB GROWTH

Building 9,000 megawatts of offshore wind power by 2035 will create more than 10,000 new jobs.
Timeline

**Timeline for 1st wave of projects**

**Research and Stakeholder Engagement**
New York State Energy Research and Development Authority (NYSERDA) leads design of project guidelines

**2017 - Ongoing**

**Permitting and Approvals**
Developers identify sites for turbines and substations, map cable routes, and obtain federal, state, and local permits and approvals

**2018 - 2020**

**Construction and Installation**
Developers install foundations, lay cables, build substations, and assemble wind turbines

**2022 - 2024**

**Operations**
Offshore wind projects produce renewable electricity to power New York State (25+ years)

**2024 - 2050+**

**Proposal Review and Contract Awards**
Developers submit proposals to NYSERDA, who reviews and awards contracts

**2019**

**Manufacturing**
Developers work with supply chain to manufacture and transport components

**2020 - 2024**

**Commissioning**
Developers and grid operators conduct pre-operational testing

**2024**
Scale = Efficiency

- Empire State Building: 1,454 ft
- Average Onshore US Turbine: 466 ft
- Tallest Onshore US Turbine: 574 ft
- Block Island Offshore Wind Project: 590 ft
- GE Haliade-X: 853 ft

- Statue of Liberty: 305 ft
Components of the Offshore Wind Supply Chain
Turbine Array Connected to Shore
Components of the Offshore Wind Supply Chain

Wind Turbines

8–12 MW
Components of the Offshore Wind Supply Chain
Foundations, Offshore Substation, and “Wet Transmission”
Components of the Offshore Wind Supply Chain
Cable-landfall and On-shore Transmission
NEW YORK OFFSHORE WIND SUPPLIER FORUM

Components of the Offshore Wind Supply Chain
Installation and Support Vessels
NEW YORK OFFSHORE WIND SUPPLIER FORUM

Components of the Offshore Wind Supply Chain
On-shore Marshalling and Equipment Staging
NEW YORK OFFSHORE WIND SUPPLIER FORUM

Offshore Wind Supply Chain Ecosystem

Offshore Wind Developer

Resource Assessment, Engineering, and Permitting Studies
Logistics
Transmission and Interconnection
Construction and Installation Services
Turbine Supply Agreements

2019-2025
New York Phase 1 Projects

Component Manufacturing ("OEMs & Tier 1")

Blades
Towers
Nacelle
Generator
Foundations

Raw Materials, Parts, and Supply ("Tier 2, 3")

25y O&M

PPE
Brakes
Barges
Coatings
Tugboats
Yaw Motors
Pitch Motors
Steel
Rubber
Castings
Concrete
Aluminum
Lubricants
Composites
Railings & Ladders
Piping & Conduits
Fall-Arrest Systems
Empire State Development

ESD offers incentives that make New York an attractive and cost-competitive location for offshore wind businesses.

Beyond traditional incentives, ESD invests in major infrastructure projects that benefit communities and industry.
Supporting the growth of an industry by studying

New York’s ports and manufacturing assets

Manufacturing
Staging
Operations and Maintenance
National Offshore Wind Research and Development Consortium

the first federally funded public-private partnership focused on advancing research and development to accelerate the offshore wind industry in the United States