



NYSERDA

Offshore Wind Public Webinar

July 24, 2019



Outline

- New York State Climate Leadership and Community Protection Act
- ORECRFP18-1 Inaugural Solicitation Results
 - Empire Wind Project
 - Sunrise Wind Project
- Next Steps & Public Engagement
- General Program Updates

New York State Enacts Historic Climate Law



Climate Leadership and Community Protection Act (CLCPA)

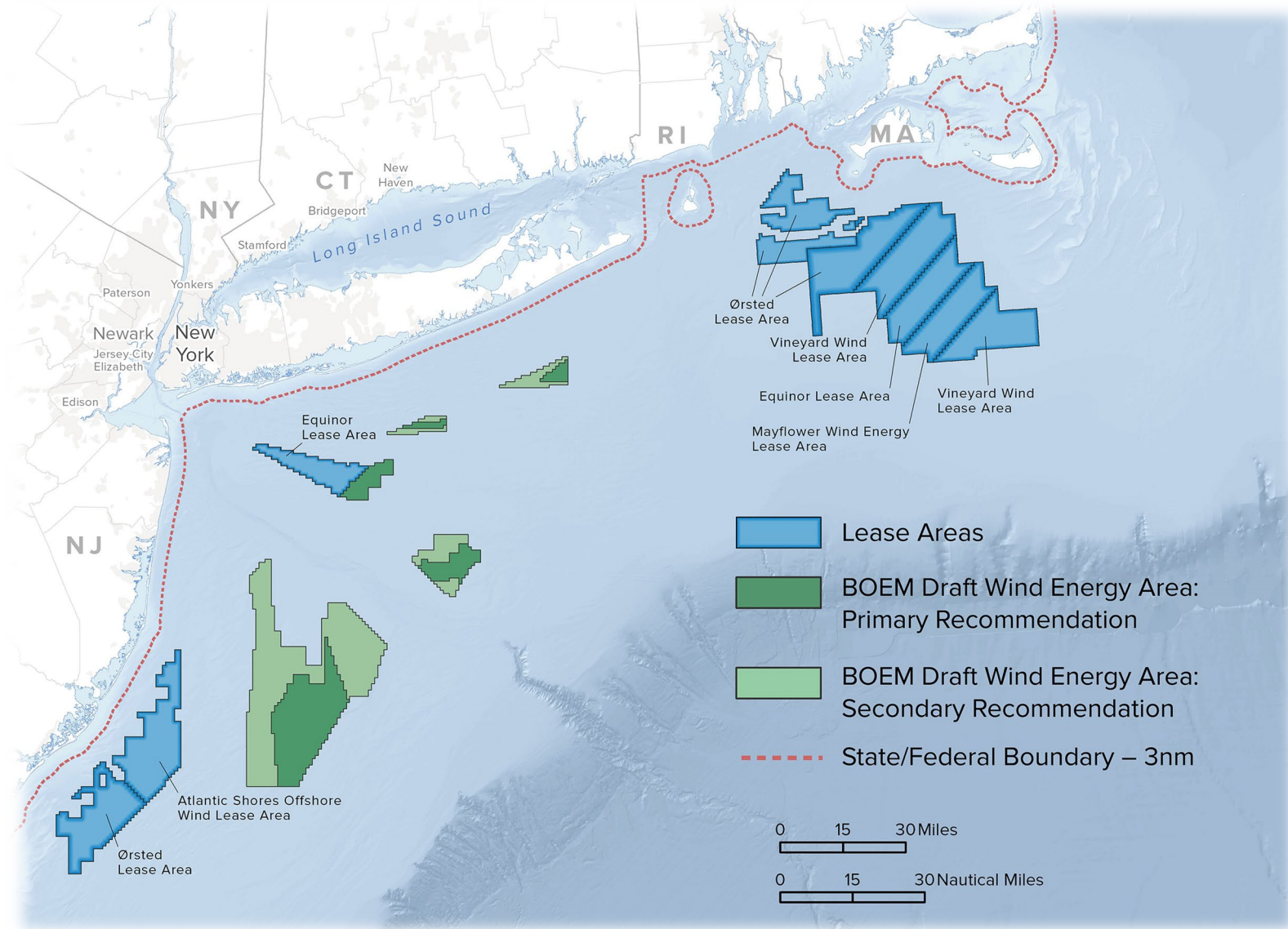
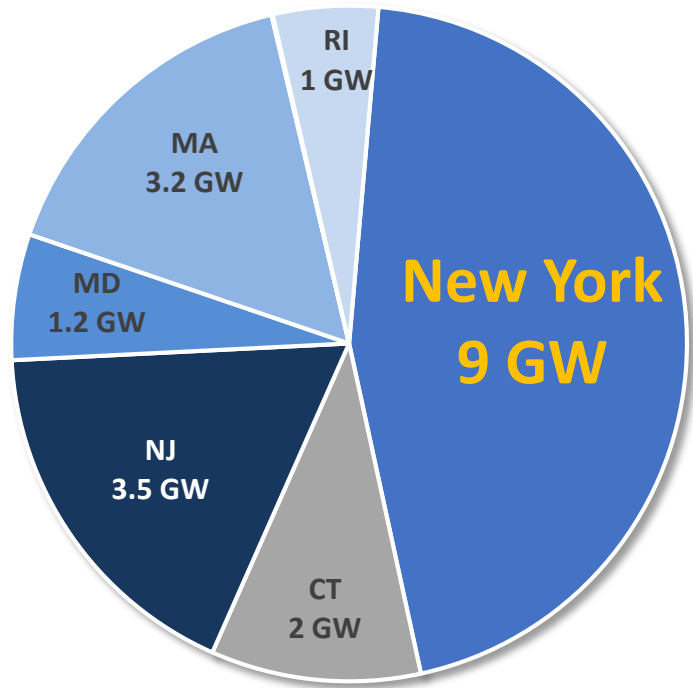
9,000 MW of offshore wind by 2035

10,000 JOBS
ENOUGH TO POWER
6 MILLION HOMES
BILLIONS IN
INFRASTRUCTURE
30% OF NEW YORK'S
ELECTRICITY LOAD

NEW YORK'S NATION-LEADING CLIMATE LAW
Climate Leadership and Community Protection Act

Regional Market Potential, 20 GW

Offshore Wind Goals by State



Record
Competition

4 proposers
18 bids

Evaluation Criteria

70% price

20% economic benefits

10% project viability

Proposal Requirements

- Environmental and Fisheries Mitigation Plans
- Community Outreach Plans
- Project Labor Agreements
- Prevailing Wage
- New York Supplier Opportunity



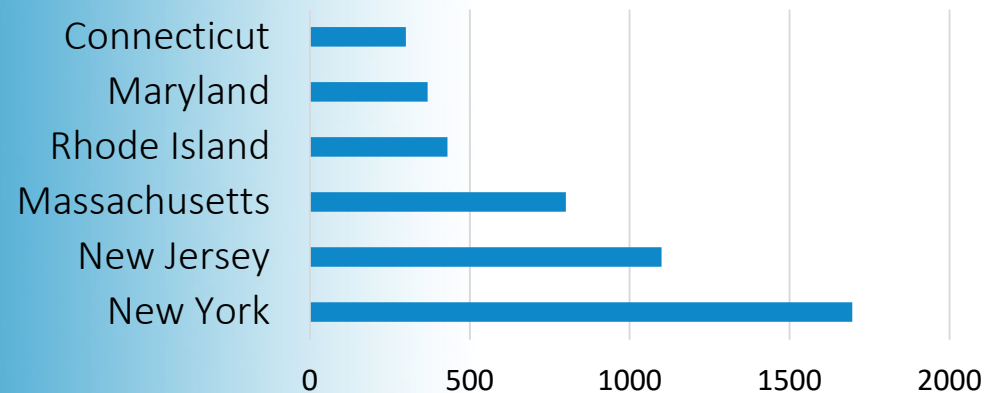
AWARD RESULTS: TWO PROJECTS

THE LARGEST
COMMITMENT TO
OFFSHORE WIND
BY A STATE IN
U.S. HISTORY

1,696 MW
of offshore wind capacity

*Enough to power over half of
all New York City households*

Contracted MW By State



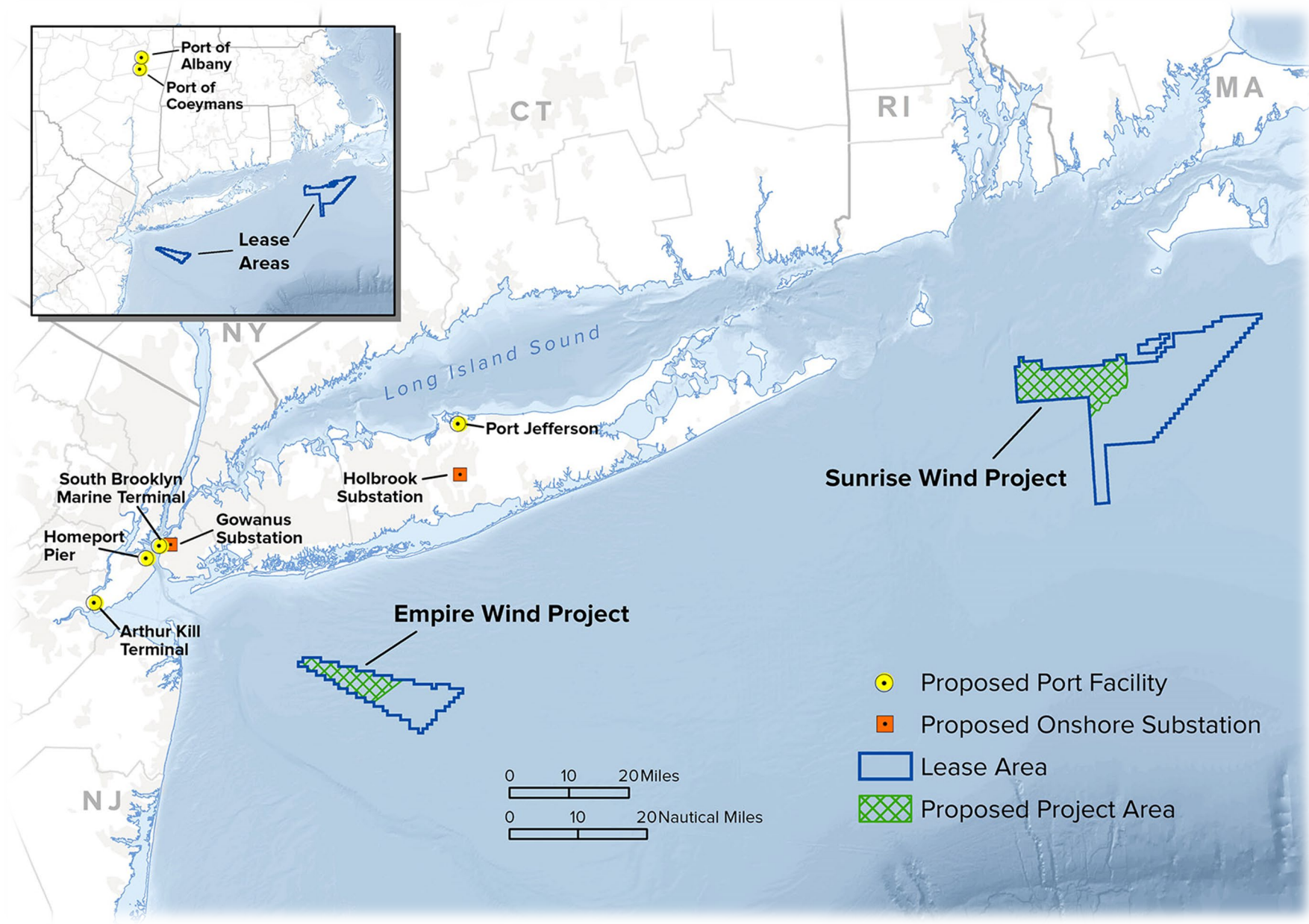
AWARD RESULTS: TWO PROJECTS

Empire Wind

816 MW

Sunrise Wind

880 MW





AWARD RESULTS: TWO PROJECTS

1,600 Jobs

**in project development, component manufacturing,
installation, and operations maintenance**

Directly offering well-paying careers with salaries of over \$100,000 per year

\$3.2 billion

**in combined private sector investments
both upstate and downstate**

AWARD RESULTS: TWO PROJECTS

NYS Investments

\$20 million

**Offshore Wind
Training Institute**

\$3 million

**Community and Workforce
Benefits Fund**

in combined public and private investments

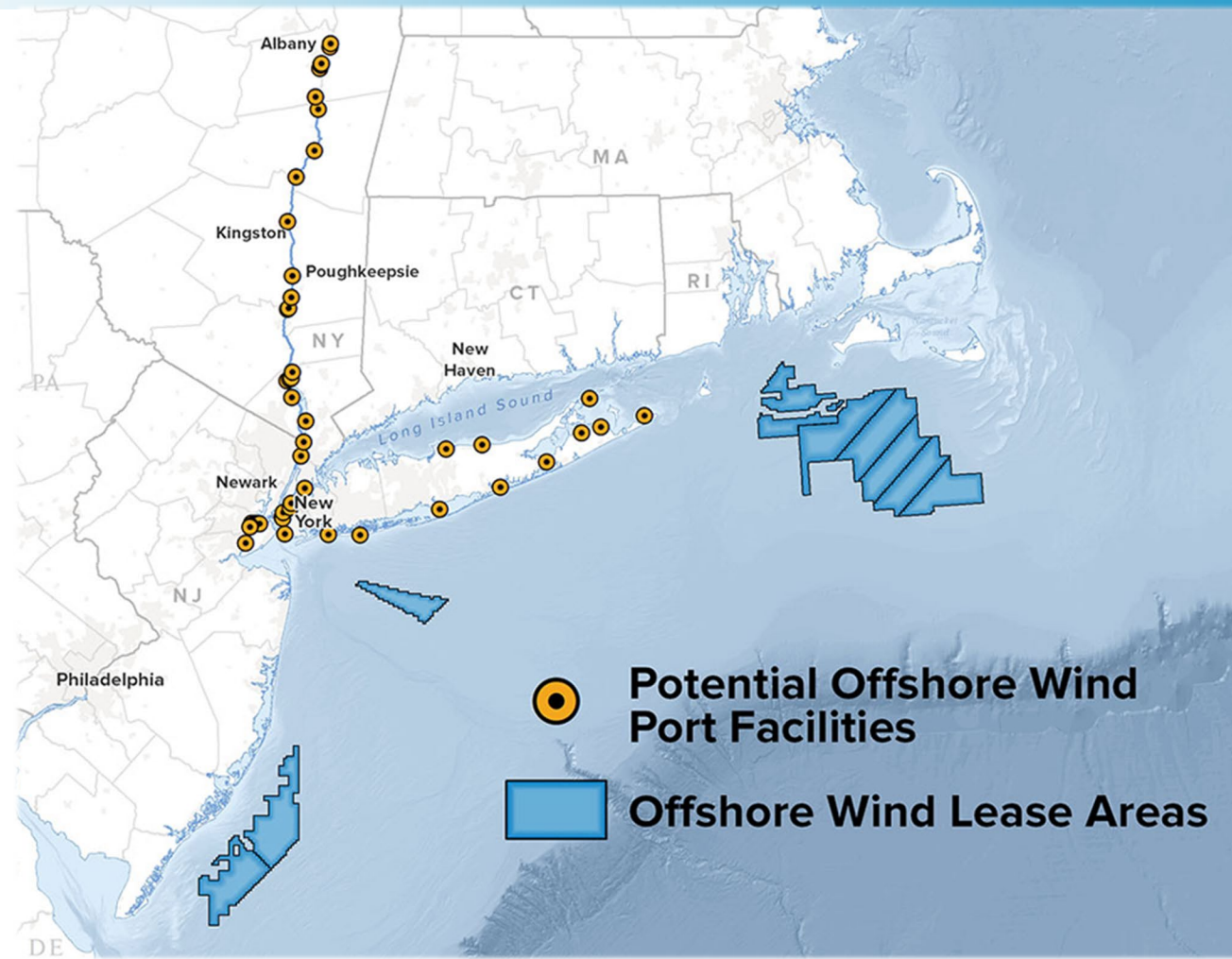


AWARD RESULTS: TWO PROJECTS

NYS Investments

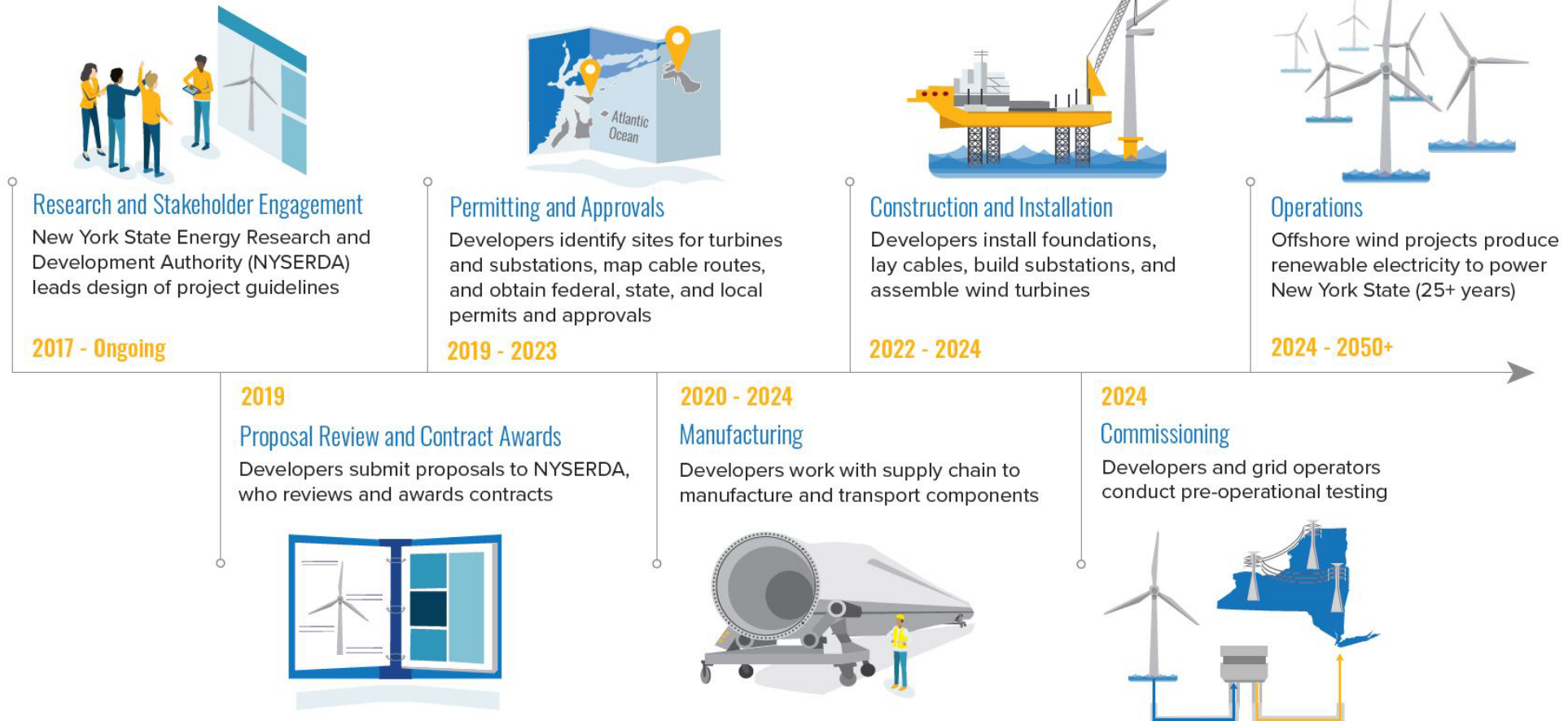
\$287 million
largest investment
by any state

Combined private investments with Governor Cuomo's 2019 State of the State commitment in offshore wind port infrastructure



AWARD RESULTS: TWO PROJECTS

Project Timelines





**Empire
Wind**

Let's power New York's
future together











equinor

Julia Bovey

Director, External Affairs | Equinor Wind US

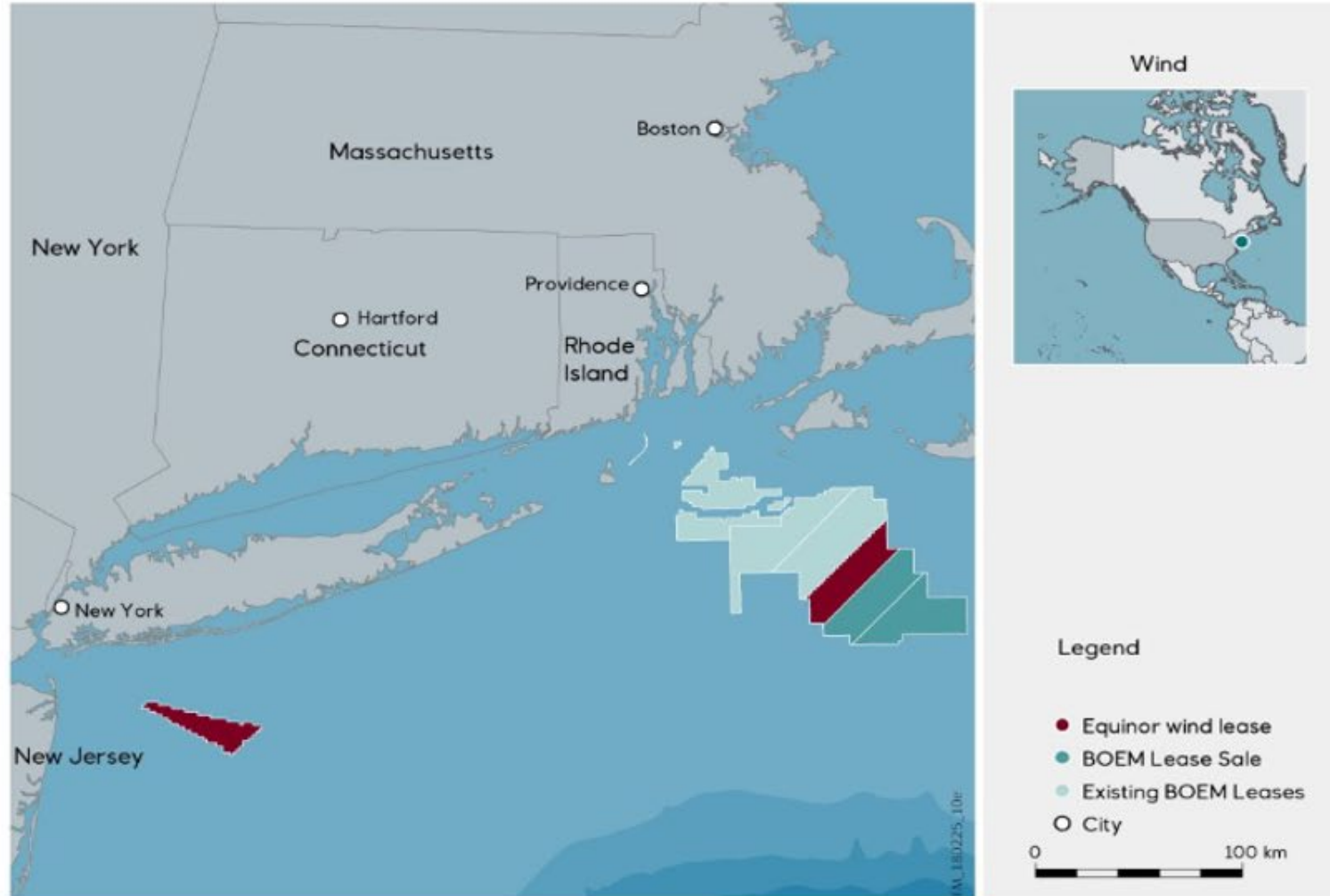


Equinor introduction: Bringing European experience to the US

| | | | | | North West Europe | United States East Coast | Japan |
|--|--|--|---|--|--|--|--|
| | | | | | | | US West Coast |
| Hywind demo | Sheringham Shoal | Dudgeon | Hywind Scotland | Arkona | Dogger Bank | Empire Wind | Floating large scale |
|  |  |  |  |  |  |  |  |
| In operation | In operation | In operation | In operation | In operation | Consented | Provisional Award | |
| 2.3 MW | 317 MW | 402 MW | 30 MW | 385 MW | 3 x 1.2 GW | 816MW | |
| 2009- | 2012- | 2017 | 2017 | 2019 | 2020- | 2024- | |



Equinor Wind in the US: leading position in US offshore wind



New York

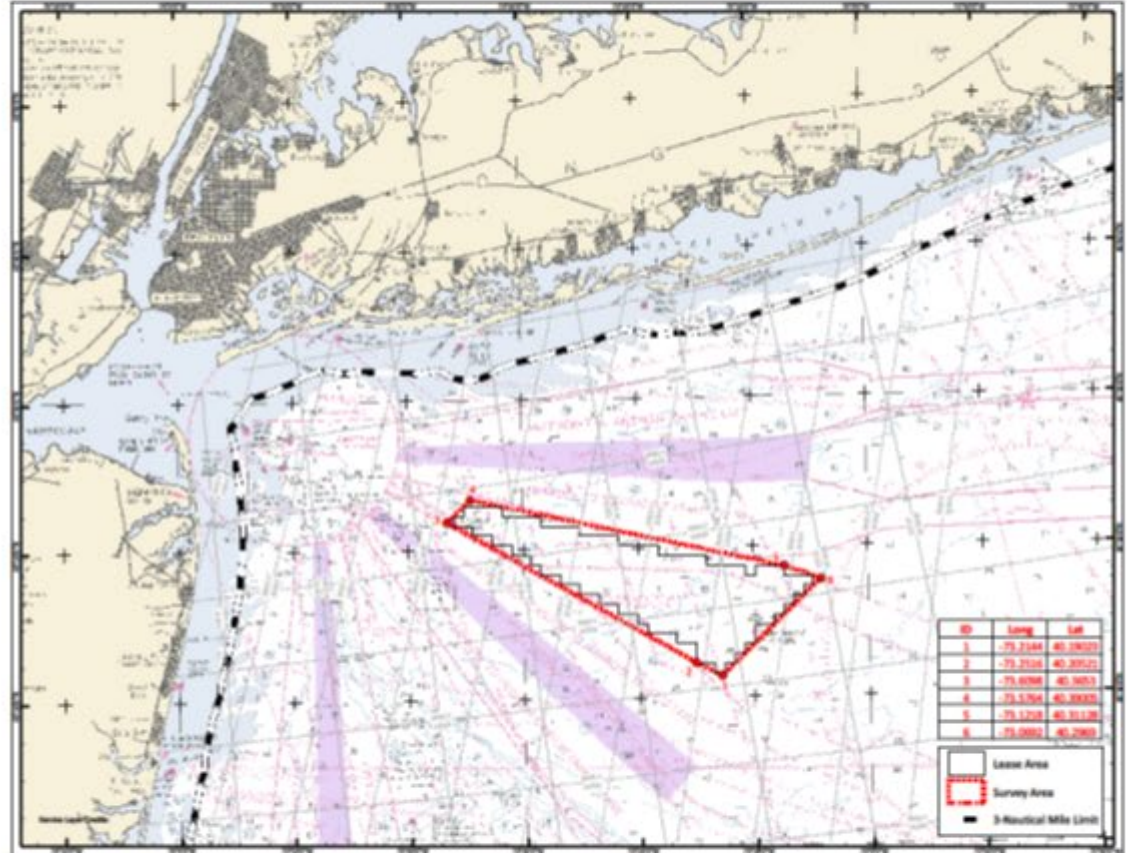
New Jersey

New England



Empire Wind: Key facts

- Provisional award capacity: 816 MW
- Foundations: Gravity-Based (Concrete) manufactured in the Capital Region
- Operations and Maintenance (O&M) base in New York City
- Proposed onshore substation: Gowanus
- Next generation turbines
- Water depth: 65 – 100 ft
- Construction period: 2022-23
- Electricity Delivered to New York: 2024+



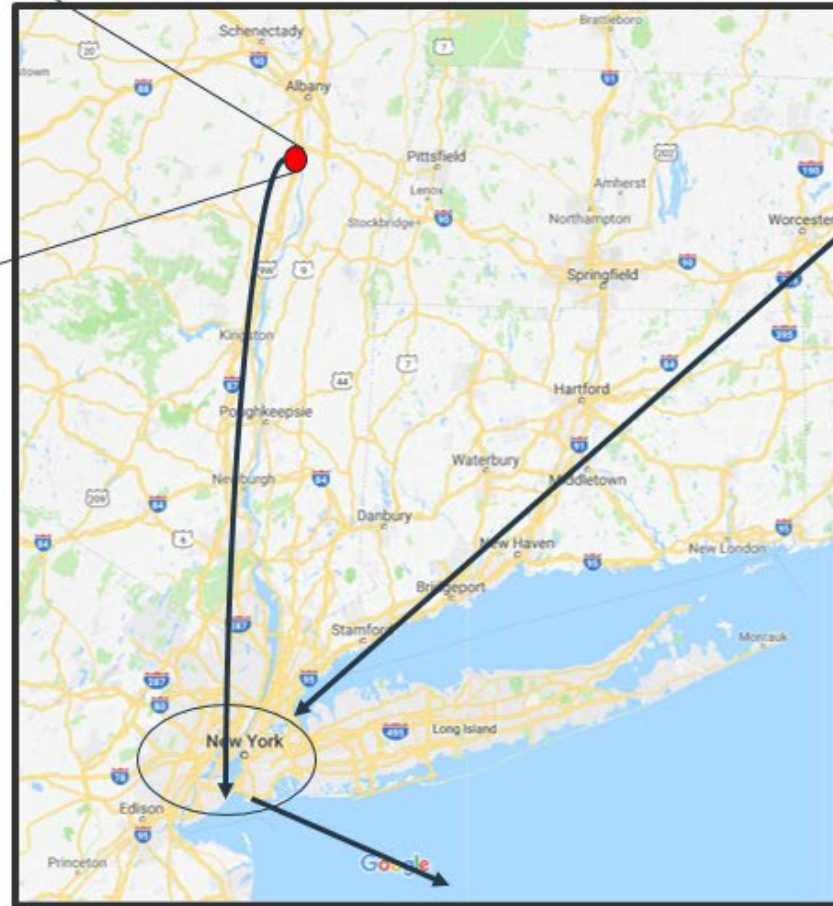
Empire Wind: Providing great benefits to New York

- Creating **thousands of jobs** during construction and operations
- Creating a **manufacturing hub for concrete foundations** at Port of Coeymans
- More than **\$60 million** in **port upgrades**
- **Operations and maintenance** base in New York
- Establishing a **community benefits fund** of \$4.5 million
- Supplying renewable power from the **New York Bight to the heart of New York City**
- Supporting New York State in **cost-effectively delivering its long-term decarbonization goals**
- **Reduced CO₂ emissions** of 1.6 million tons per year



Empire Wind: Gravity-Based Structure (GBS) Foundation Fabrication

1. Fabrication at Port of Coeymans



2. Assembly with Transition Piece

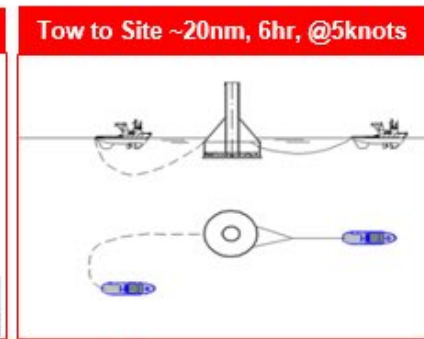


EU TP Manufacturing and transport to US, 2wks transport @10knots

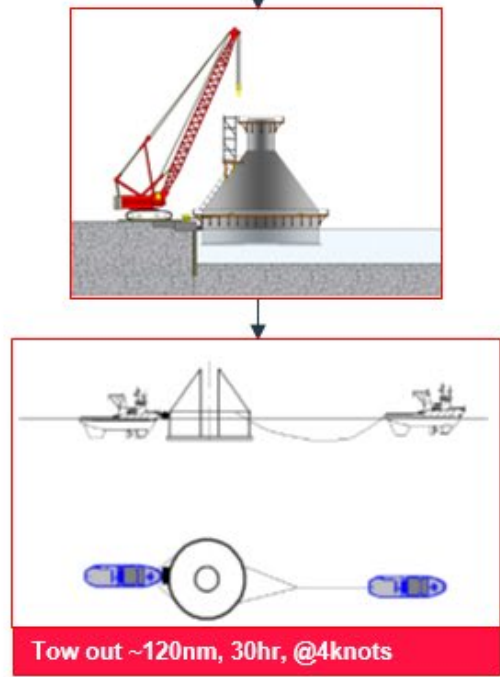
3. Staging and Delivery to Site



Staging & Final Mechanical Completion



Tow to Site ~20nm, 6hr, @5knots



Tow out ~120nm, 30hr, @4knots



Empire Wind: Operations and Maintenance (O&M) base in Brooklyn

- Proposed O&M base at South Brooklyn Marine Terminal
- Direct labor: approx. 50-70 full-time jobs
- Indirect labor: additional staffing working from the base:
 - Turbine suppliers
 - Vessel workers
 - Other contractors – e.g. Installation and construction contractors, equipment contractors, vessel captains, etc.



Dudgeon O&M – East coast UK

Empire Wind: Local initiatives & partnerships

SUNY Maritime & Farmingdale Collaborating to establish offshore wind training program – in partnership with the unions

Columbia University – Center of Global Energy Policy Contributing to research on new ideas to solve challenges in the energy space

SUNY StonyBrook – CEAS Collaborating on wind resource assessment and wind park optimization research

SUNY StonyBrook – SoMAS Atlantic sturgeon monitoring in our New York Bight lease area

Fisheries Outreach Equinor fisheries liaisons, hundreds of engagements with local fisheries, Responsible Offshore Development Alliance (RODA) partnership



Empire Wind: Responsible siting and permitting

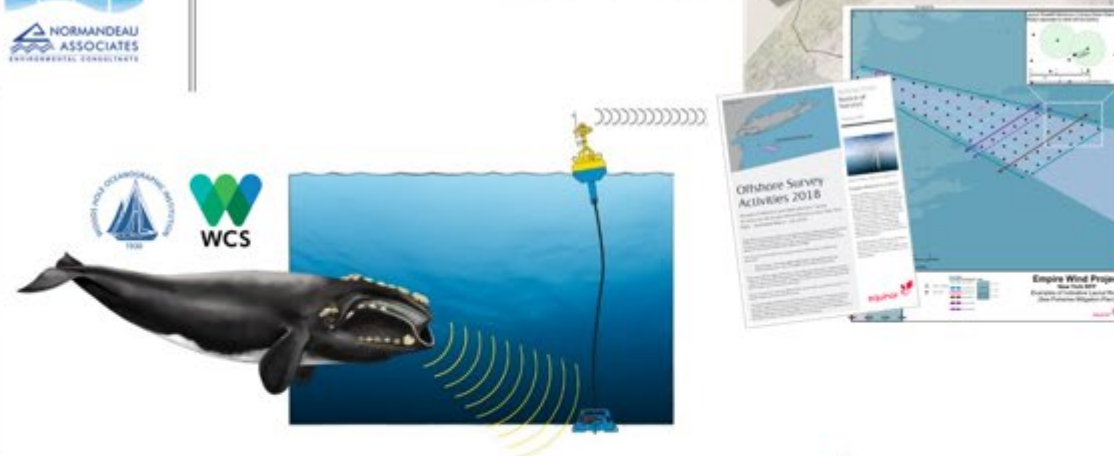
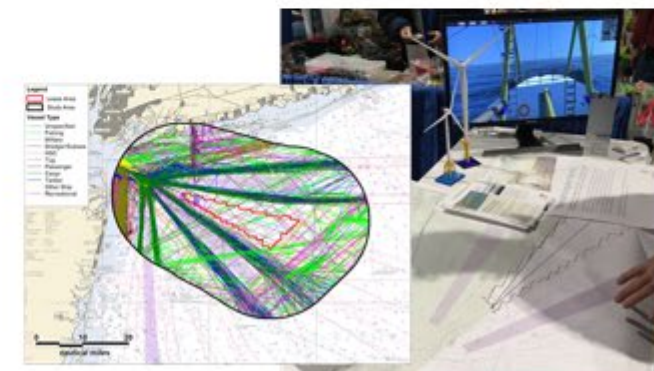
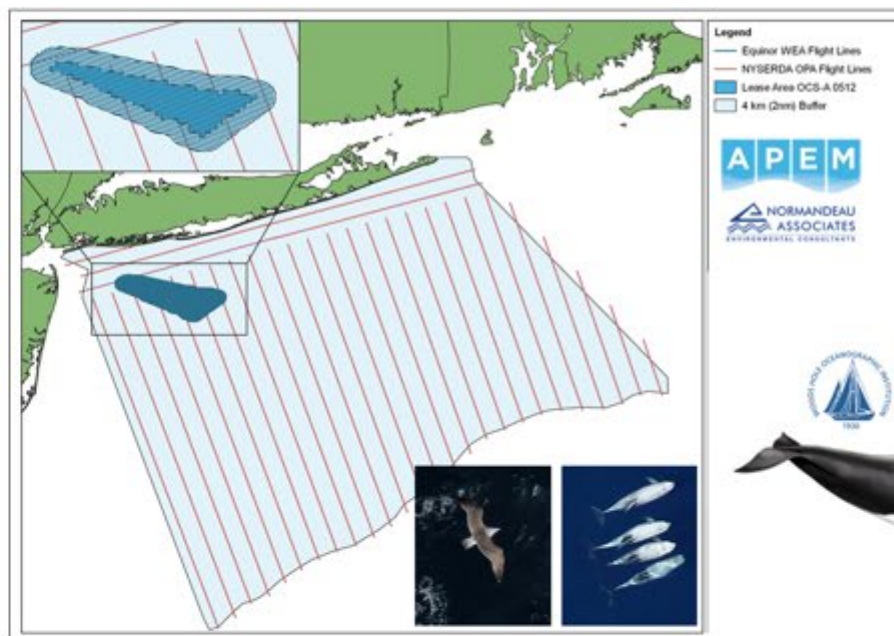
New York State

- Environmental and Fishing Mitigation Plans
- Article VII Process



BOEM

- Site Assessment Plans (SAP)
- Construction and Operation Plan (COP)
- Environmental and Technical Review



Stakeholder Engagement





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Sunrise Wind

A Joint Venture of Ørsted and Eversource

Ryan Chaytors

Project Development Director, North America



NYSERDA Offshore Wind Webinar

July 24, 2019

Sunrise Wind is bringing unparalleled experience in developing offshore wind to New York



Offshore Wind Pioneer

Built the first offshore wind farm in the world, the first in the U.S. and developing the largest project portfolio in the country

Global Leadership

20+ years experience building offshore wind farms

Proven Expertise

25 successful offshore wind farms totalling 5.6GW capacity



Energy Leader

100+ year history of operation in Northeast
New England's largest energy company

Transmission Expertise

Premier electric transmission developer

Northeast Roots

Deep-rooted knowledge of the region's electrical system

Sunrise Wind Is Coming To New York

880 MW of clean, reliable energy

Energy *Where* It's Needed

- Located 30+ miles over the horizon from Montauk, NY
- Output delivered over a new submarine export cable to Brookhaven, NY

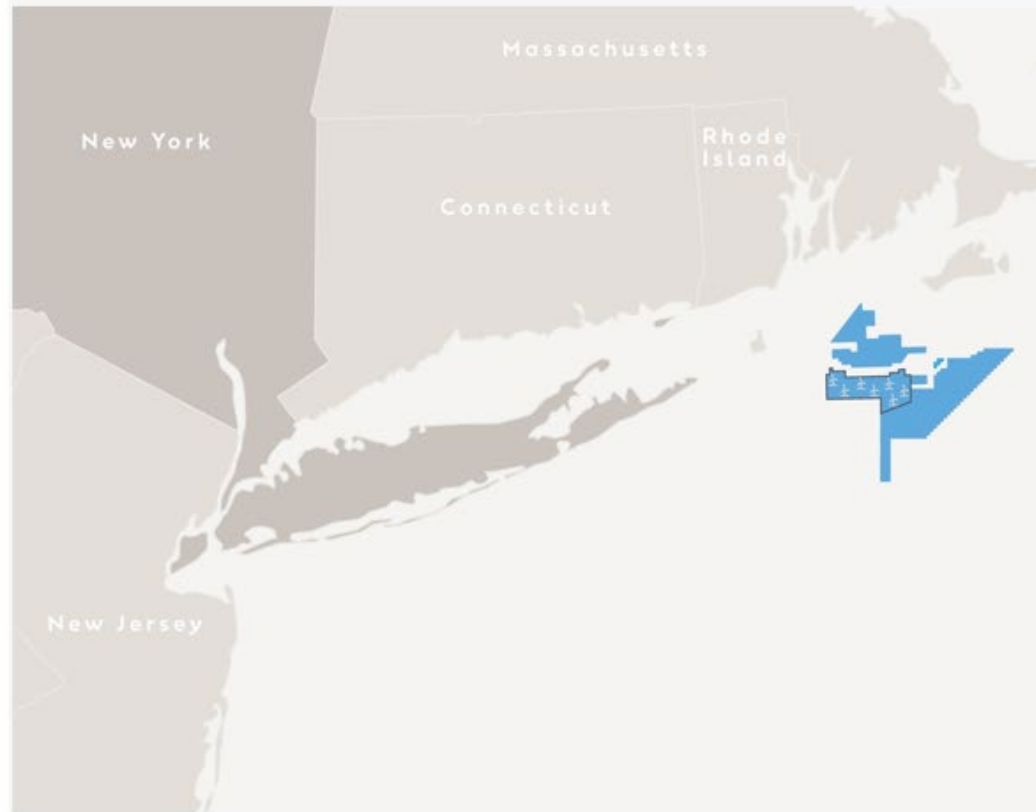
Energy *When* Its Needed

- Production beginning in 2024
- Supports New York's nation-leading clean energy mandate

Energy *For* New York

- 800 direct jobs
- 1,500-2,000 indirect jobs
- Committed to paying prevailing wages
- Project Labor Agreement(s)

Renewable energy for 500,000+ New Yorkers



Sunrise Wind Is Investing In New Yorkers

Strategic Initiatives to Position NY for a New Industry

- \$10 Million to fund the **National Workforce Training Center**
 - Nation's first training facility dedicated to the U.S. offshore wind workforce
 - Hosted by Suffolk County Community College, Long Island
 - Innovative partnership between industry, academia, and labor

- \$1 Million **Upper Hudson Workforce Development Fund**
 - Targeted to advancing the skills of the workforce of the Upper Hudson and Capital Region
 - Prepare region to be a hub of OSW fabrication and logistics



Maersk Training



Falck Safety Services

Sunrise Wind Is Investing In Major Port Infrastructure Upgrades

– \$10 Million New York Ports Infrastructure Development Fund

- Supporting major port infrastructure upgrades at multiple New York ports

– Port Jefferson regional operations and maintenance hub

- Complementary use of the port that will not conflict with ferry service
- ~100 permanent, full-time jobs over the 25-year life of project and shorter-term construction jobs

– Fabricating key foundation components in the Capital Region



Sunrise Wind Commitment To The Fisheries Community



We will...



Promote the smart growth of the American offshore wind industry



Focus on maintaining access and navigation in and around our wind farms for all ocean users



Complete scientific research collaboratively with the fishing community



Be accessible and available

Learn More | Contact Us

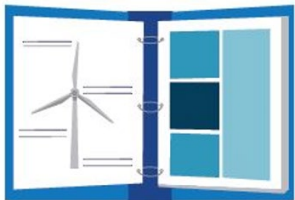
www.SunriseWindNY.Com
info@us.orsted.com

Orsted
EVERSOURCE

Next Steps for NYSERDA



Negotiate contracts for Offshore Wind Renewable Energy Credits (ORECs) with winning developers



Phase 1 report filed with the Public Service Commission

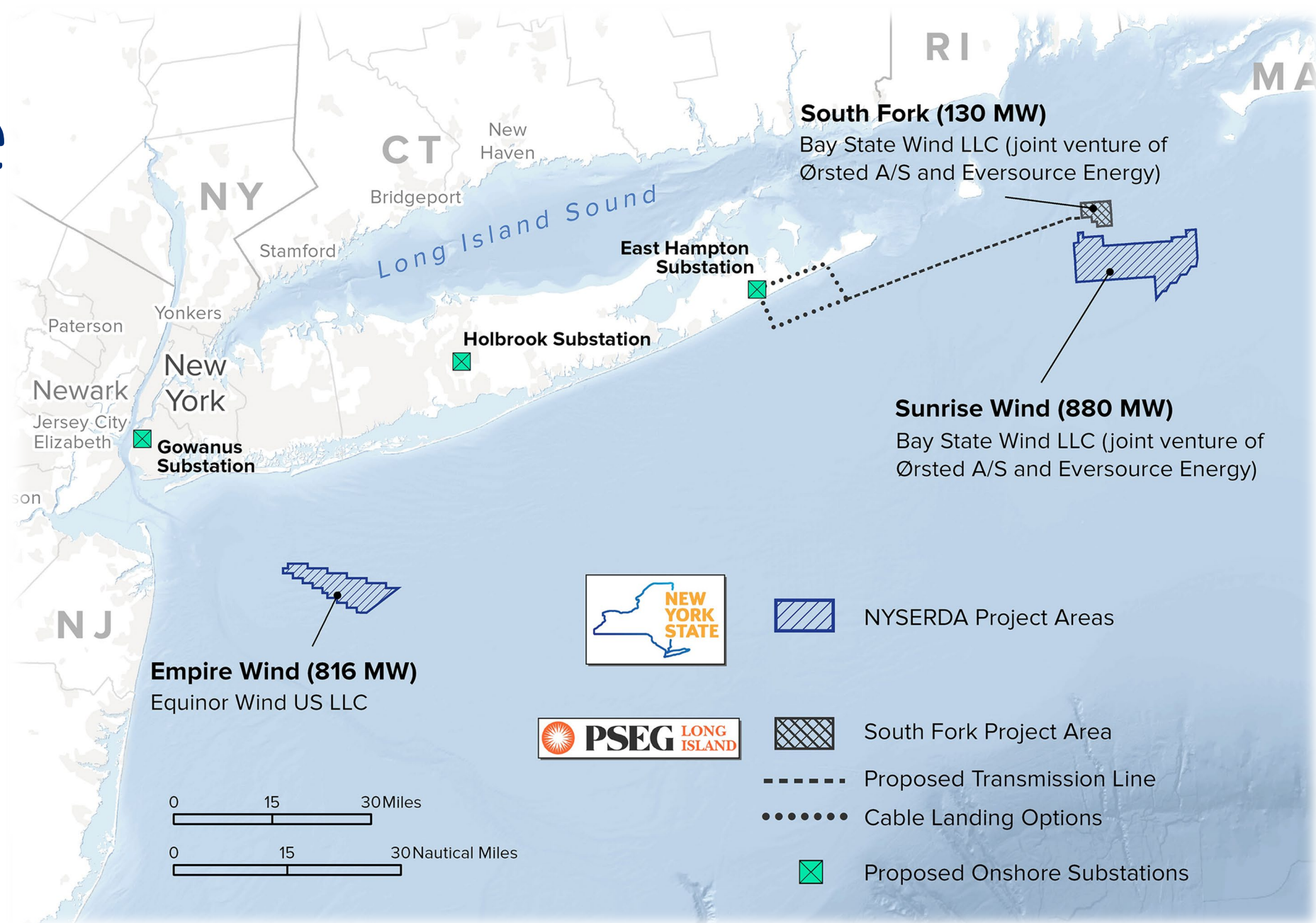
Required within 30-days of contract execution. Full details of the procurement process including executed contracts and pricing will be made available to the public via NYS DPS Matter Master 18-E-0071



Host public meetings in the Capital Region, NYC, and Long Island

Offshore Wind Projects in Context

1,826MW



Upcoming Public Meetings

**Details coming soon for
September public meetings**

**Albany
Staten Island
Sunset Park
Rockaways
Long Beach
Brookhaven
Southampton**

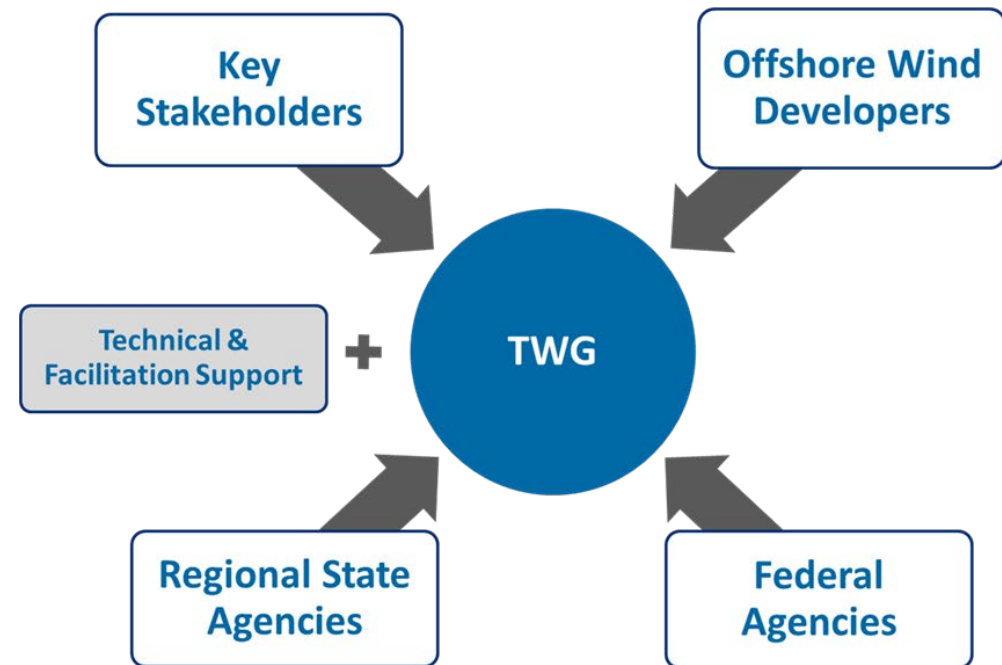
Please check back for more information:

[https://www.nyserda.ny.gov/All-Programs/Programs/
Offshore-Wind/Contact/Events](https://www.nyserda.ny.gov/All-Programs/Programs/Offshore-Wind/Contact/Events)

Public Engagement

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

Technical Working Groups



Public Engagement

Working to **Actively Evolve** the Projects' Fishing and Environmental Mitigation Plans

Technical Working Groups



- These working groups are critical stewards of New York State's projects and provide valuable representation, technical insight, and constructive solutions
- On-going supporting activities include:
 - Synthesis of [monitoring and mitigation practices \(MMPs\)](#)
 - Stakeholder feedback on [environmental research needs](#)
 - Specialist Committees working towards [BMPs for marine mammals and sea turtles and birds and bats](#) for inclusion in future procurements
 - Launch of the [Offshore Wind Lease Mapper Tool](#)
 - Worked with RODA to hold the first [Commercial Fishing Transit Workshop](#) for the NY Bight in Spring of 2019

Public Engagement

Research Opportunities

National Offshore Wind Research and Development Consortium

Supports 3 Research Pillars:

1. Offshore Wind Plant Technology Advancement
2. Offshore Wind Power Resource and Physical Site Characterization
3. Installation, O&M and Supply Chain Solutions

Focused on reducing the levelized cost of electricity (LCOE) for offshore wind in the United States by facilitating innovations directly responsive to technical and supply chain barriers

**Pillar 1-3
2019 \$7M
Solicitation
Live Now!**



Coming
Soon

Offshore Wind Webinar Series Learning from the **Experts**

Find dates for upcoming
webinars on our website:
<https://www.nyserda.ny.gov/All-Programs/Programs/Offshore-Wind/Contact/Events>

*Learn more about Offshore Wind
technologies, development practices,
and research findings*

Questions?

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