



NYSERDA

New York's Offshore Wind Initiative

NASEO Annual Meeting
September 17, 2019



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

Record
Competition

4 proposers
18 bids

Evaluation Criteria

70% price

20% economic benefits

10% project viability

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*



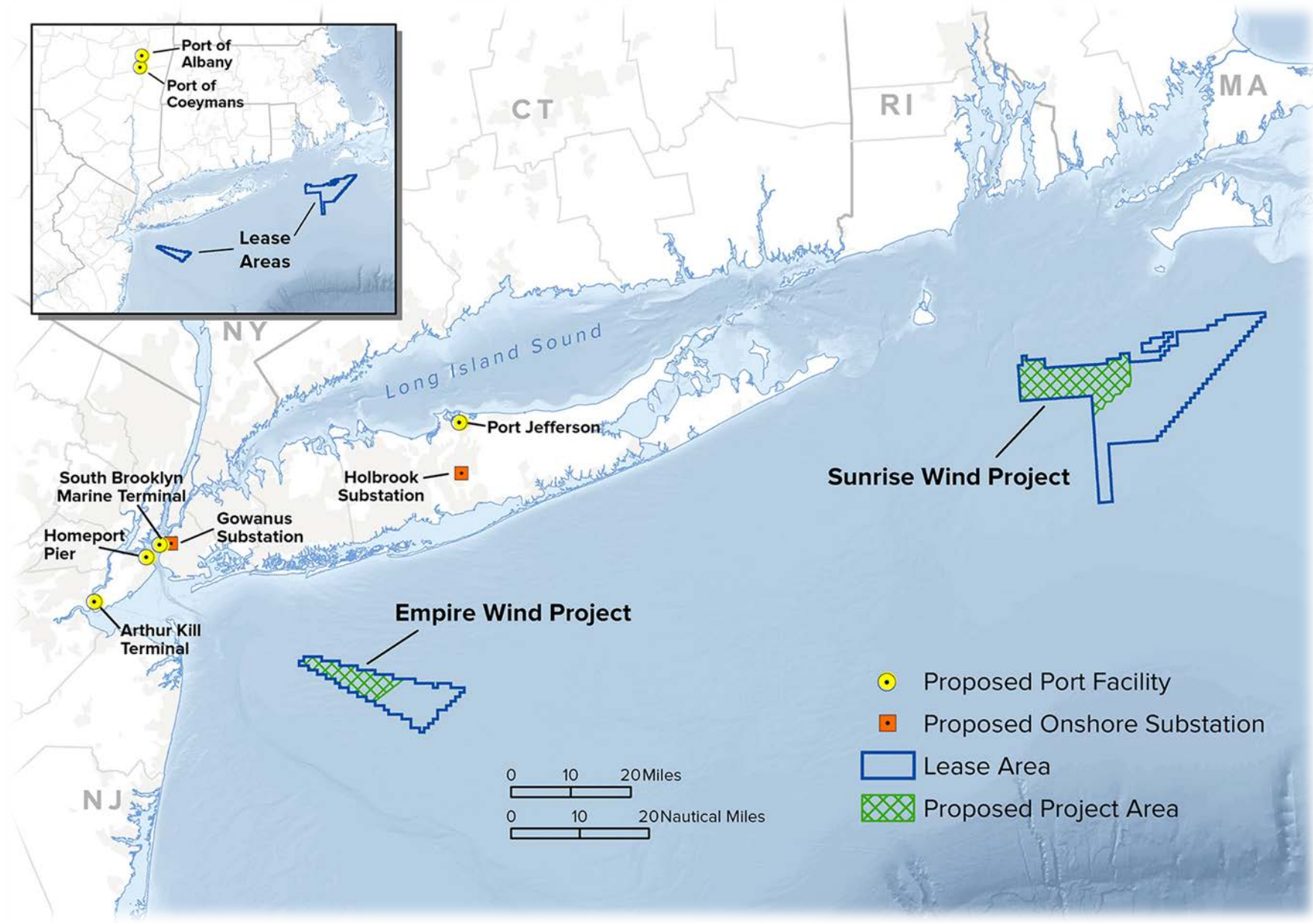
AWARD RESULTS: TWO PROJECTS

Empire Wind

816 MW

Sunrise Wind

880 MW



AWARD RESULTS: TWO PROJECTS

Project Timelines



Research and Stakeholder Engagement

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

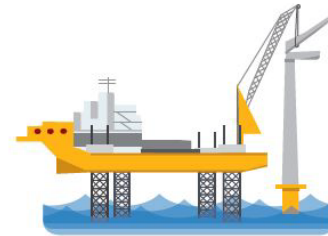
2017 - Ongoing



Permitting and Approvals

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

2019 - 2023



Construction and Installation

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

2022 - 2024



Operations

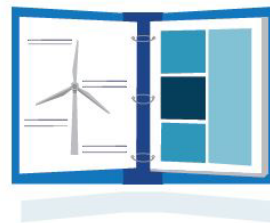
Offshore wind projects produce renewable electricity to power New York State (25+ years)

2024 - 2050+

2019

Proposal Review and Contract Awards

Developers submit proposals to NYSERDA, who reviews and awards contracts



2020 - 2024

Manufacturing

Developers work with supply chain to manufacture and transport components



2024

Commissioning

Developers and grid operators conduct pre-operational testing





Roadmap for advancing the development of offshore wind in a **cost-effective** and **responsible** manner

NEW YORK STATE OFFSHORE WIND MASTER PLAN

Charting a Course to 2,400 Megawatts
of Offshore Wind Energy

20+
Economic and
Environmental
Studies

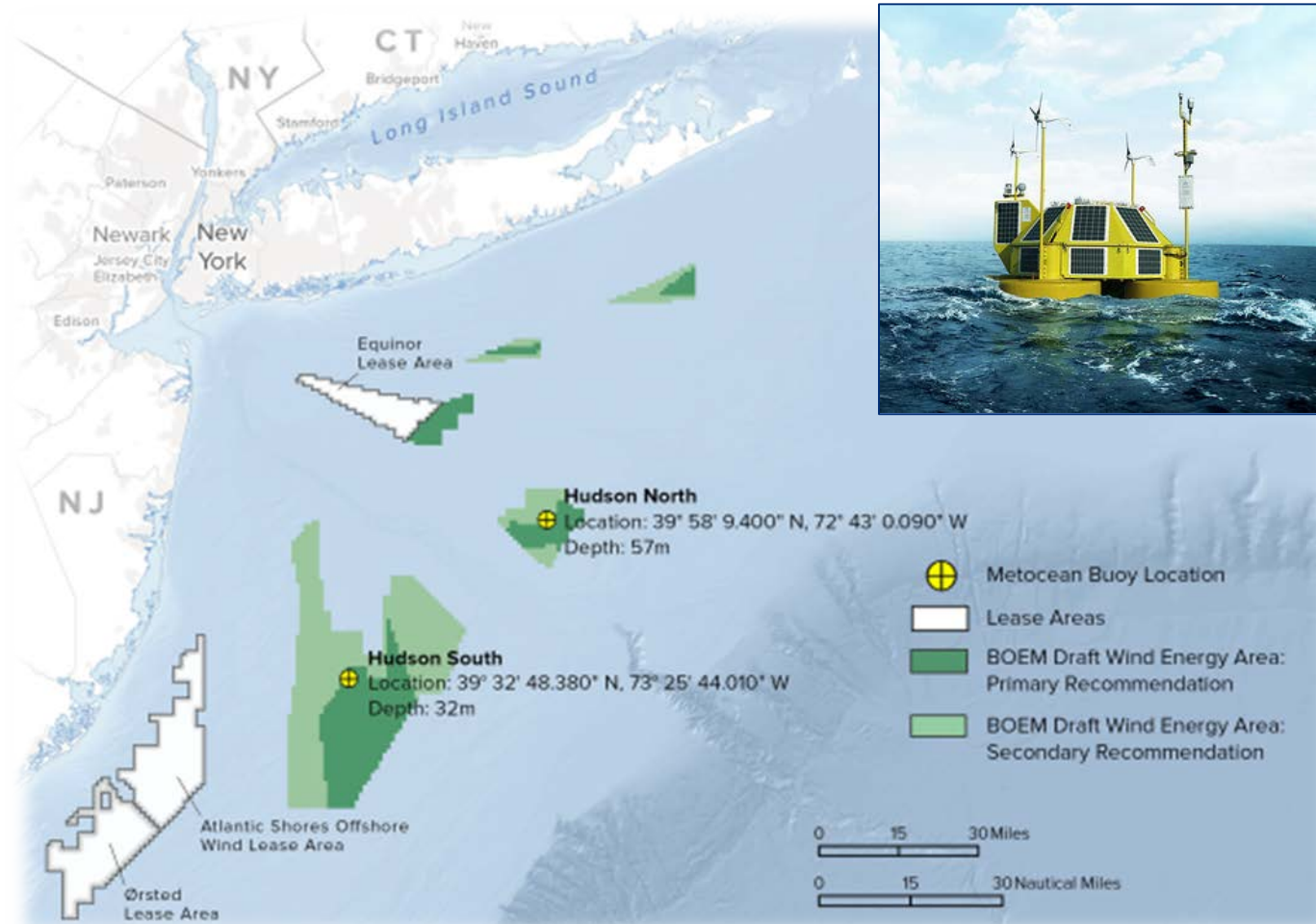
Including:

- Birds and Bat Study
- Environmental Sensitivity Analysis
- Fish and Fisheries Study
- Marine Mammals and Sea Turtles Study
- and more...

Ongoing Research

Metocean Buoys in the New York Bight

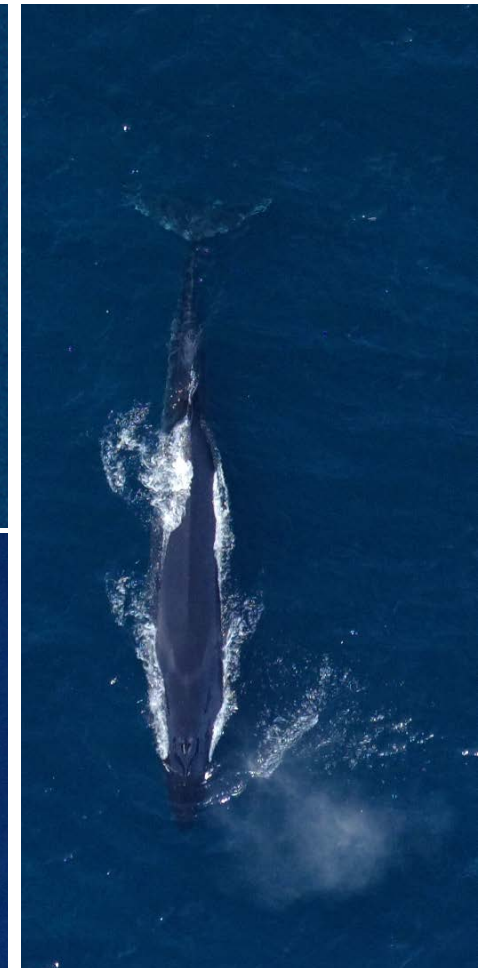
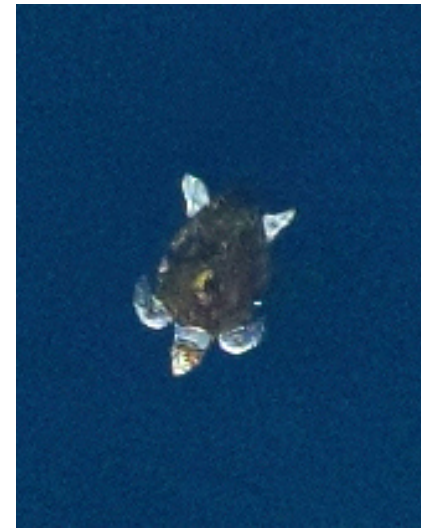
- Two floating LiDAR (light detection and ranging) buoys deployed August 2019 for a 2-year period
- Remote sensing will provide continuous data on wind, ocean currents, and wildlife
 - Acoustic monitoring for birds, bats, and marine mammals
 - Nanotag antennas and fish tag receivers



Ongoing Research

Environmental and Fisheries Research for Offshore Wind

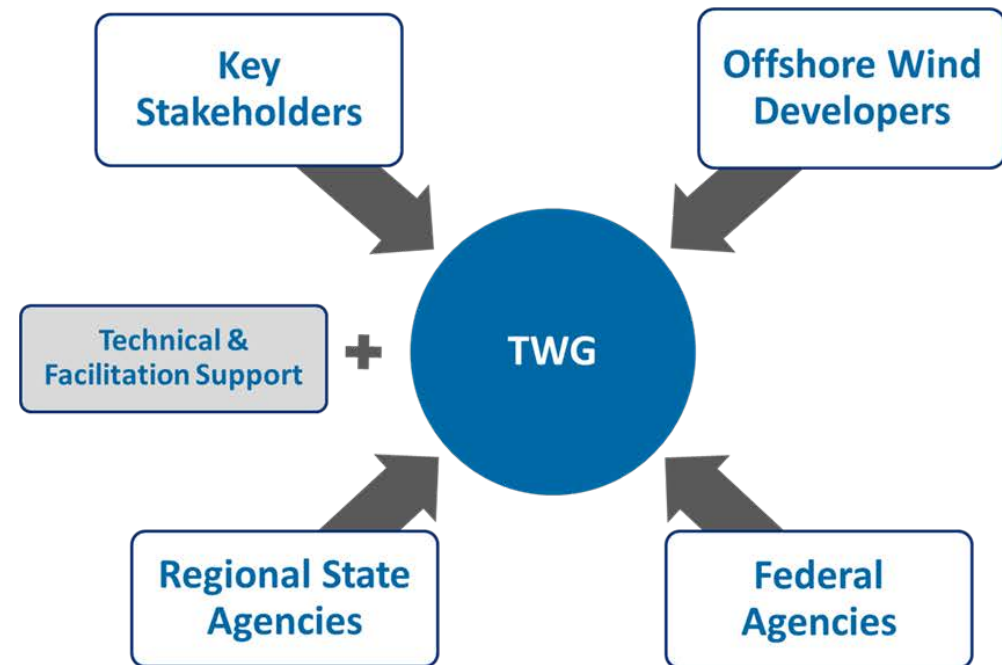
- Recently completed a 3-year aerial survey of birds, marine mammals, sharks and fish shoals
- 2019 competitive solicitation selected five multi-year projects
 - \$2 million in funding
 - Reduce risks to wildlife and fisheries
 - Inform offshore wind development process
 - Take a regional perspective



Public Engagement

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

Technical Working Groups



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

