

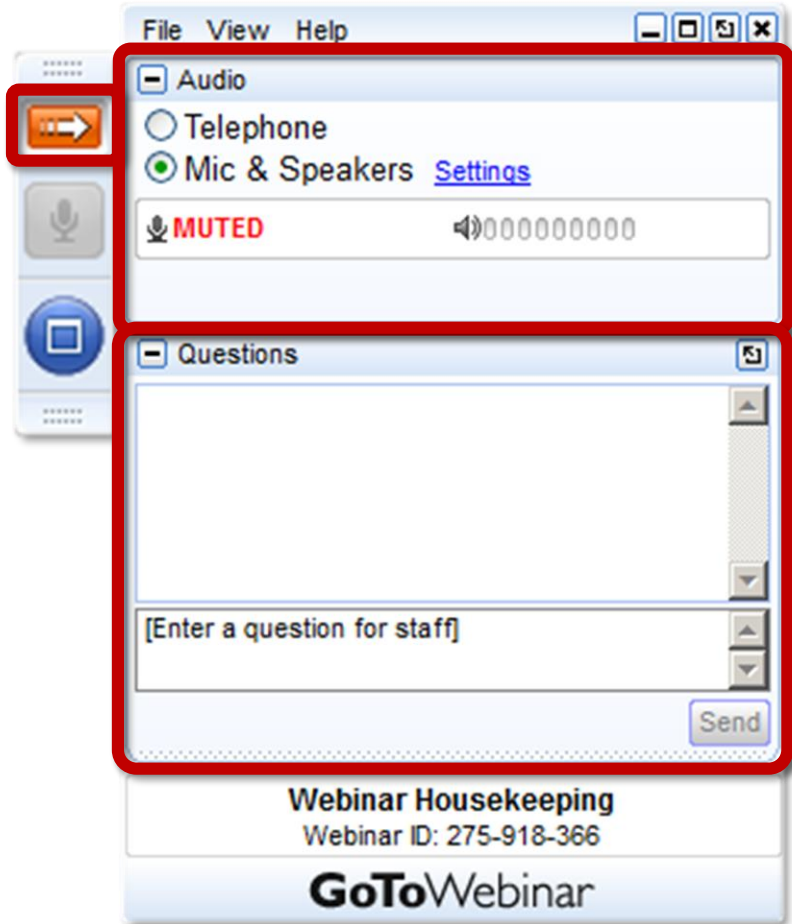
2020 AWARDS

State Leadership in Clean Energy

State Leadership in Clean Energy: NYSERDA's Offshore Wind Program

August 4, 2020

Housekeeping



Join audio:

- Choose Mic & Speakers to use VoIP
- Choose Telephone and dial using the information provided

Use the orange arrow to open and close your control panel

Submit questions and comments via the Questions panel

This webinar is being recorded. We will email you a webinar recording within 48 hours. This webinar will be posted on CESA's website at www.cesa.org/webinars

Webinar Speakers



Warren Leon

Executive Director, Clean Energy States Alliance



Val Stori

Project Director, Clean Energy States Alliance
(moderator)



Adrienne Downey

Principal Engineer – Offshore Wind, NYSERDA



CleanEnergy States Alliance



The 2020 State Leadership in Clean Energy Award Winners



Learn more about the award winners at:

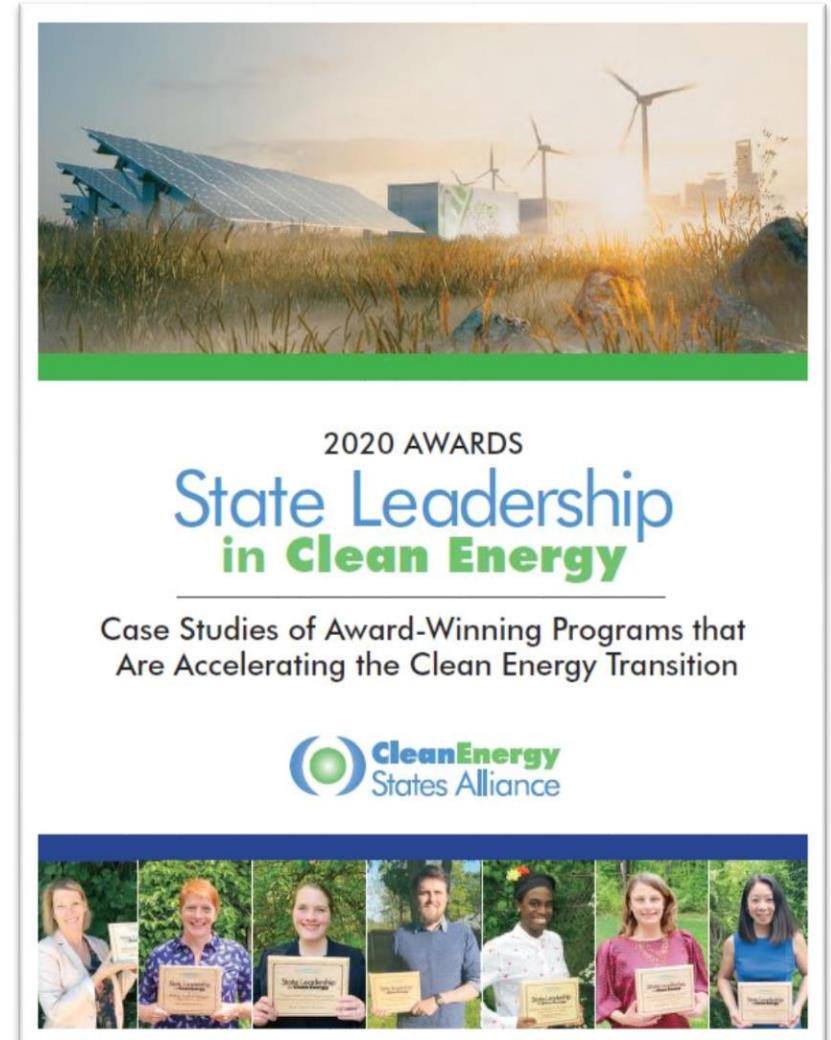
<https://www.cesa.org/projects/state-leadership-in-clean-energy/2020-awards/>

2020 State Leadership in Clean Energy Awards

- The California Energy Commission (CEC)'s **Renewable Energy for Agriculture Program (REAP)**
- Energy Trust of Oregon's **Inclusive Innovation Project**
- Massachusetts Clean Energy Center and Massachusetts Department of Energy Resources' **Mass Solar Loan Program**
- Michigan Department of Environment, Great Lakes, and Energy's **Michigan Solar Communities – Low- to Moderate-Income Access Program**
- New York State Energy Research and Development Authority's (NYSERDA) **Offshore Wind Program**
- Sacramento Municipal Utility District's (SMUD) **Energy StorageShares**

Read case studies on the 2020 award winners at:

<https://www.cesa.org/resource-library/resource/2020-slice-report/>





New York's Offshore Wind Program

Clean Energy States Alliance | 2020 State Leadership in Clean Energy Awards

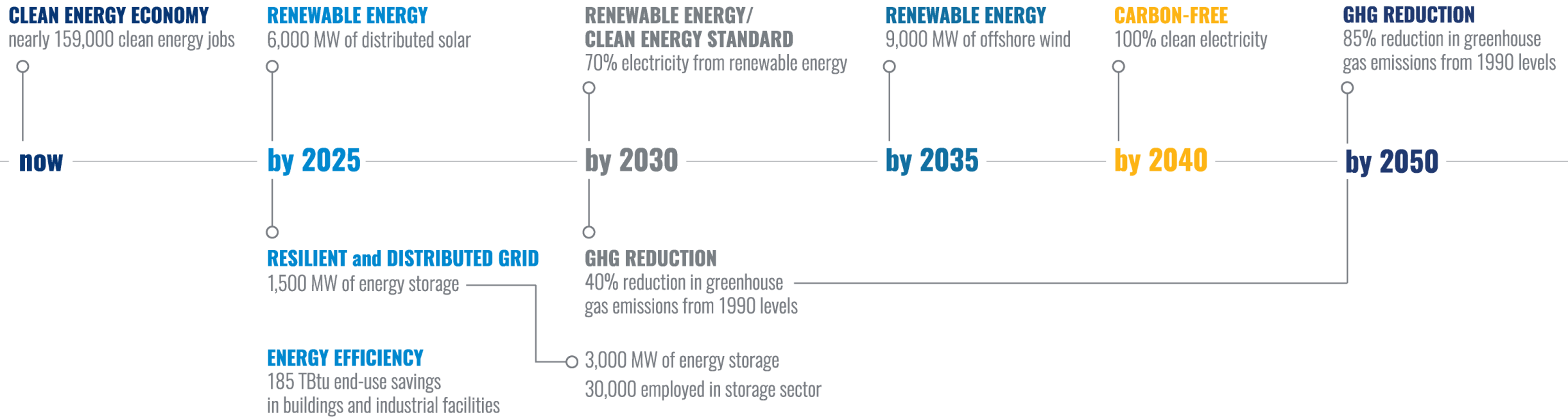
August 4, 2020 | Adrienne Downey, Principal Engineer, Offshore Wind

New York is committed to
100% clean
carbon-free electricity

by 2040

most aggressive in the nation

Climate Leadership and Community Protection Act



New York: Clean Energy Economic Engine

NYSERDA has initiated training programs that will benefit more than 40,000* New Yorkers

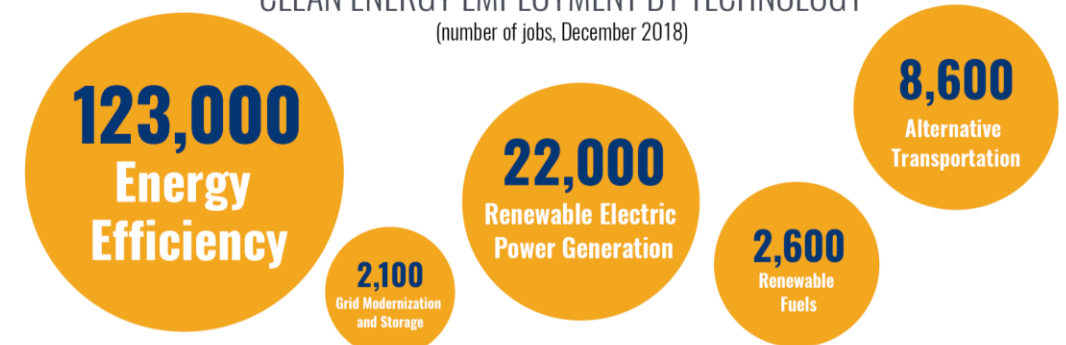
- > Energy Efficiency & Clean Technology Training
26,000 to be trained
- > Building Operations & Maintenance
5,000 to be trained
- > Energy Efficiency & Clean Technology On-the-Job Training
171 hired/trained
- > Clean Energy Internship Program
160 interns hired/supported

** The numbers reflected above represent data through 1/16/20. Actual numbers subject to change based on the finalization of contracts and final training delivery.*

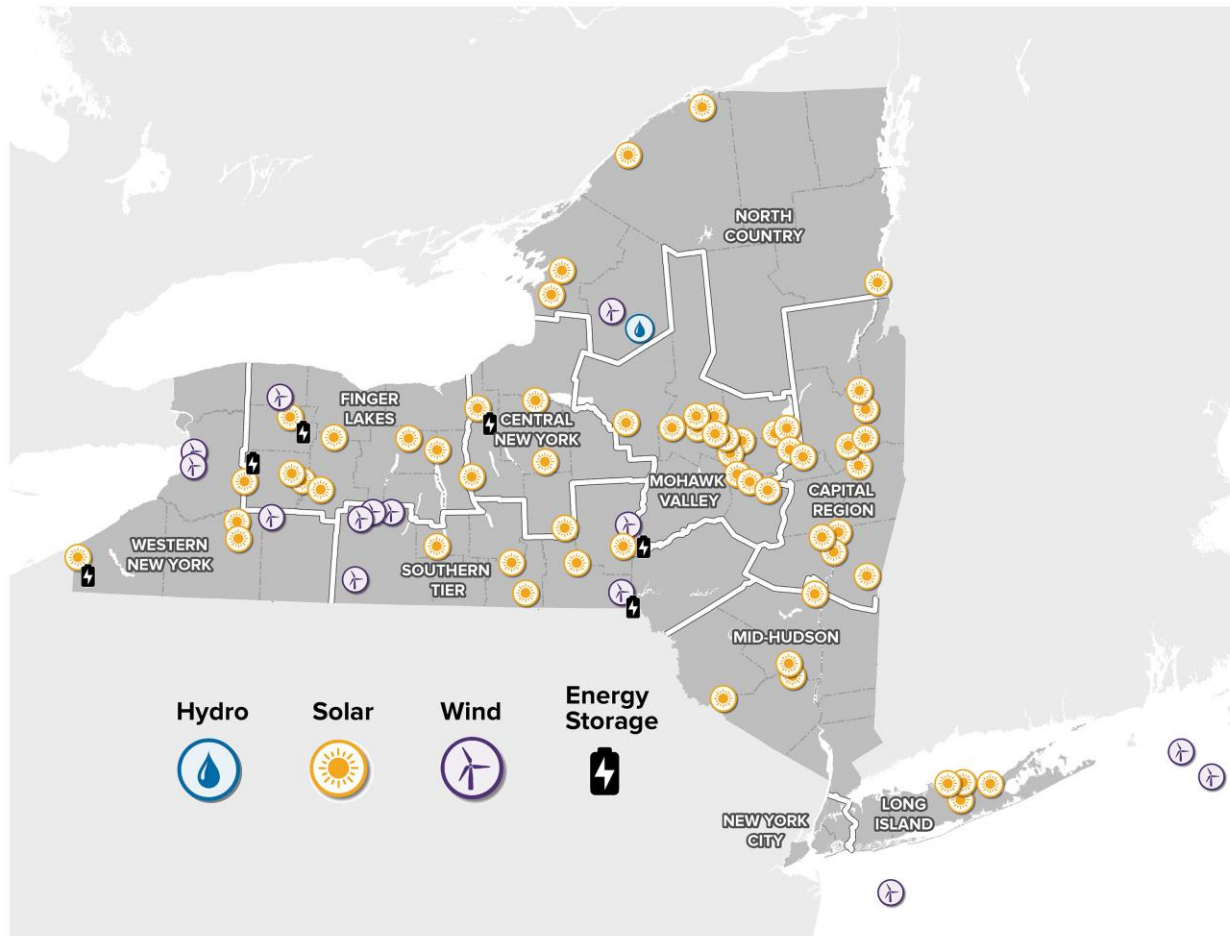
nearly
159k clean energy jobs in 2018
across New York State

7.2k new clean energy jobs in 2018
employers expect to hire 12,000 more in 2019

CLEAN ENERGY EMPLOYMENT BY TECHNOLOGY
(number of jobs, December 2018)




New York: A Globally Significant Ramp-Up of RE



Since 2017,
70 projects
+6,100 MW

Includes newly announced **21** large-scale solar, wind, and energy storage projects across upstate New York, totaling **1,278 MW** of renewable capacity and **40 MW** of energy storage capacity

An illustration of several offshore wind turbines of varying heights and sizes, receding into the distance. The turbines are grey with three blades each. The background consists of light blue, stylized clouds.

9,000 MW
of offshore wind
by 2035

10,000 JOBS

**ENOUGH TO POWER
6 MILLION HOMES**

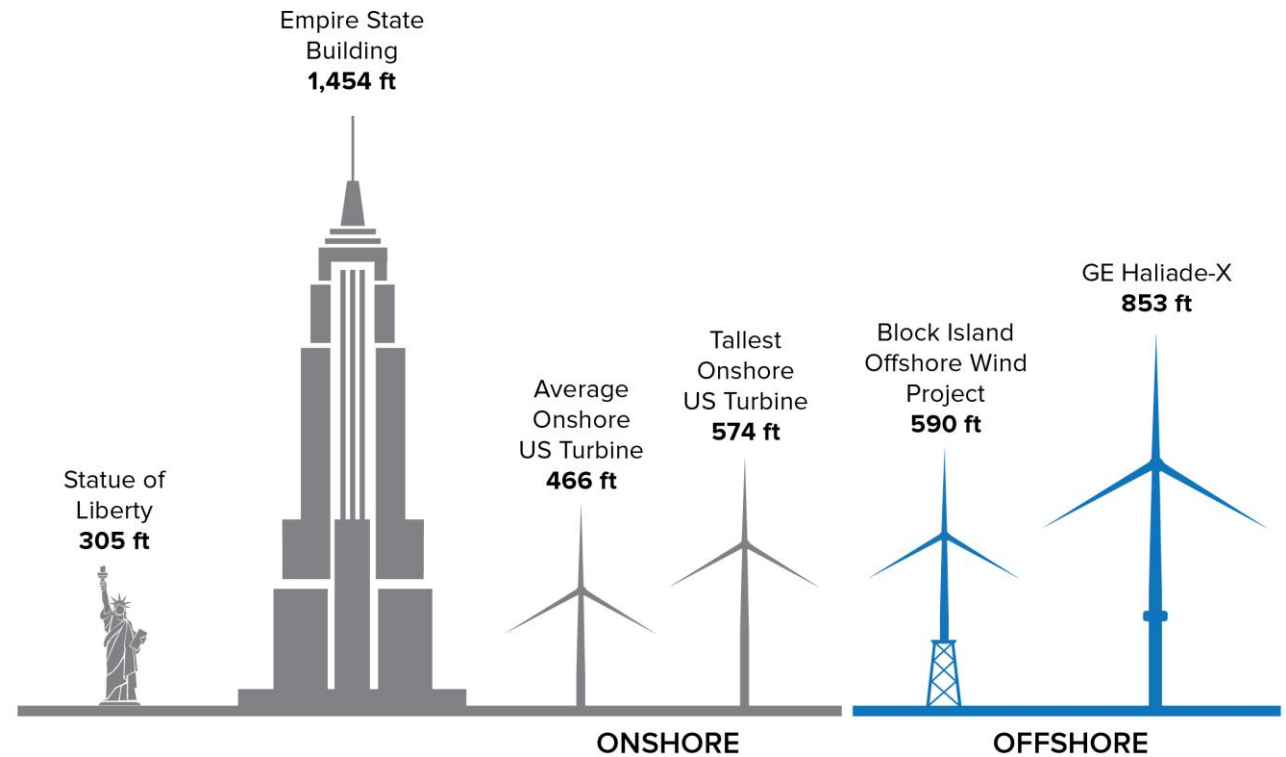
**BILLIONS IN
INFRASTRUCTURE**

**30% OF NEW YORK'S
ELECTRICITY LOAD**

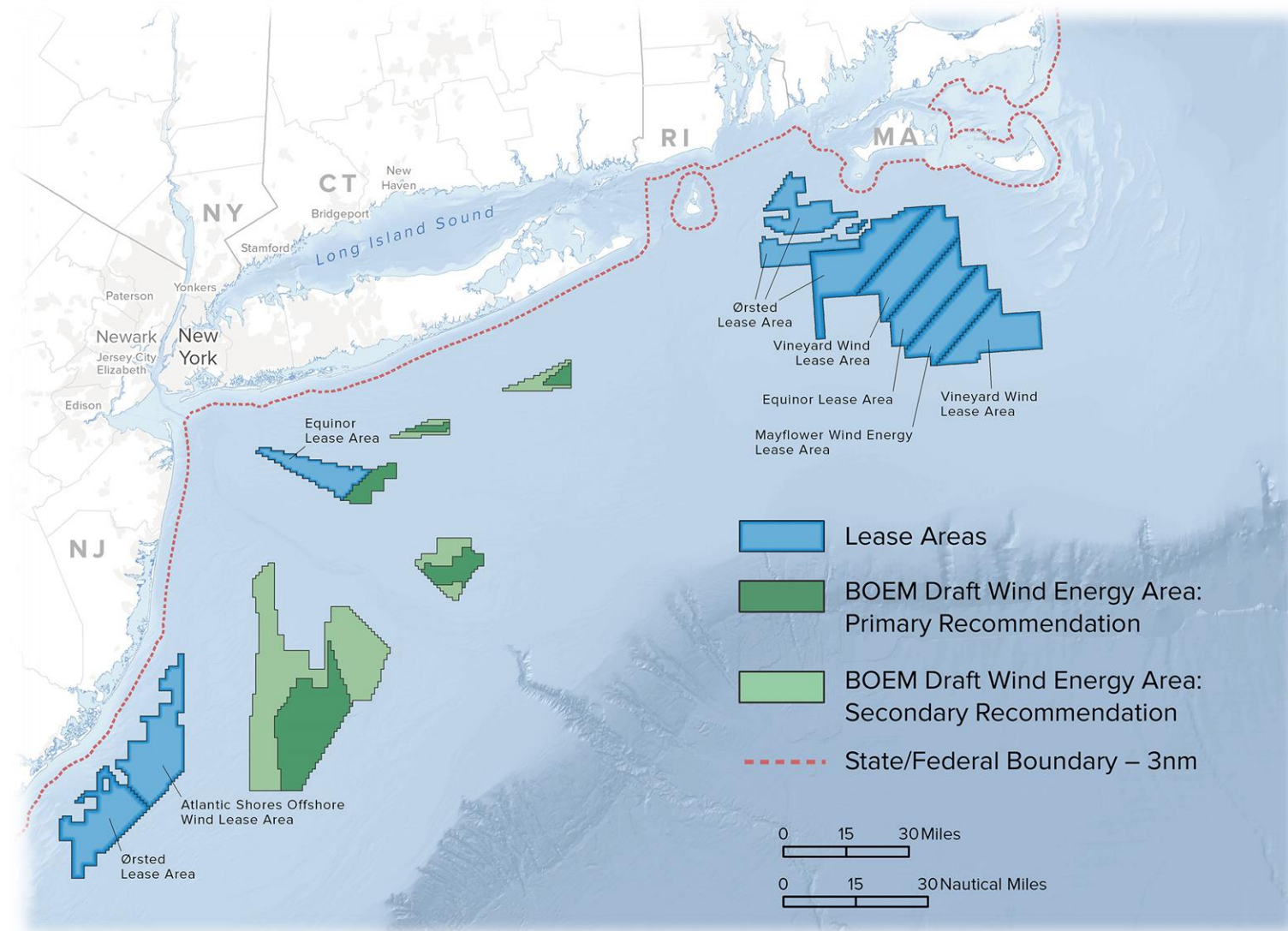
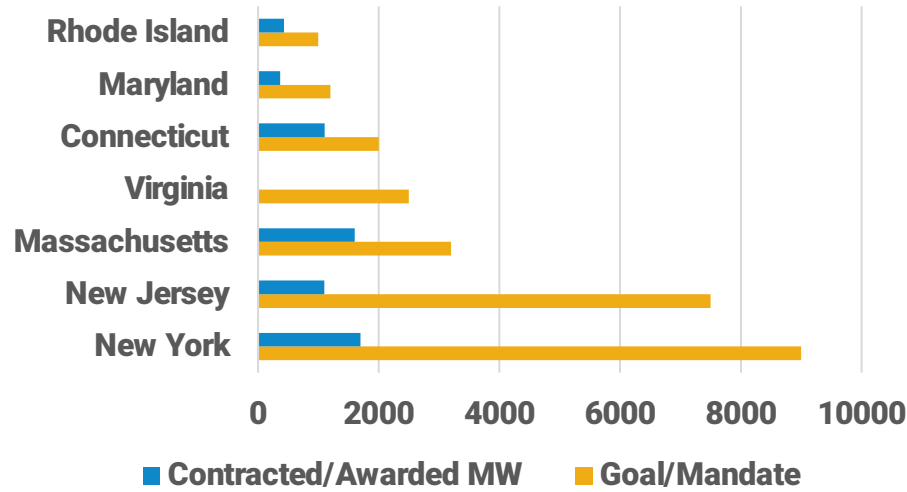
Clean Energy Standard White Paper 06/18/20
Comments Due 8/31/20

Why Offshore Wind?

- Enormous potential for **clean, renewable, and locally produced power** where demand is highest
- **Significant investments** in infrastructure and communities
- Major new source for **thousands** of short- and long-term **skilled jobs**
- More **diverse, resilient** electricity supply
- **Avoids harmful greenhouse gas emissions** that contribute to climate change



Regional Market Ambitions - 26 GW



RECENT NEWS

- **NJ Executive Order increases OSW target to 7.5 GW**
- **MA awards 804 MW Mayflower Wind project**
- **CT awards 804 MW Vineyard Wind project**

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 (NEPA)

New York

The State Role

- State permitting processes
- Energy policy and strategy development
- Stakeholder engagement
- Supply chain and workforce development
- Research and data development
- Regulatory activities related to offshore energy development
- Buyer in long-term revenue contracts with projects (ORECs)

NYSERDA, DOS, DEC, DPS

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

NYSERDA Offshore Wind Key Program Areas



New York's Offshore Wind Projects

1,600 MW of contracted projects are under development.



Supply Chain and Economic Development

Interested in working in this new industry? Here's how you can.



Advancing Technology and Lowering Costs

NYSERDA leads the National Offshore Wind Research and Development Consortium



Understanding Impacts and Benefits

How the U.S. offshore wind industry will affect New Yorkers



Ocean Research and Analysis

Understanding the environment to lower costs and minimize conflicts



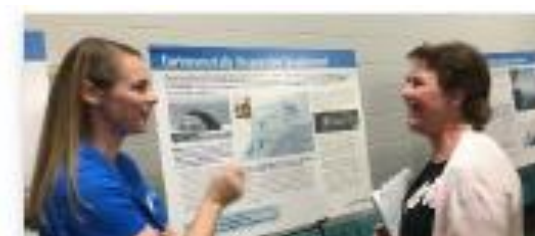
Transmission and New York's Electricity Grid

Achieving 9,000 MW of offshore wind will support 30% of NY's electric load



A Sustainable Regional Industry

How NY works with the federal government and Atlantic states to develop a regional industry



Stakeholder Engagement

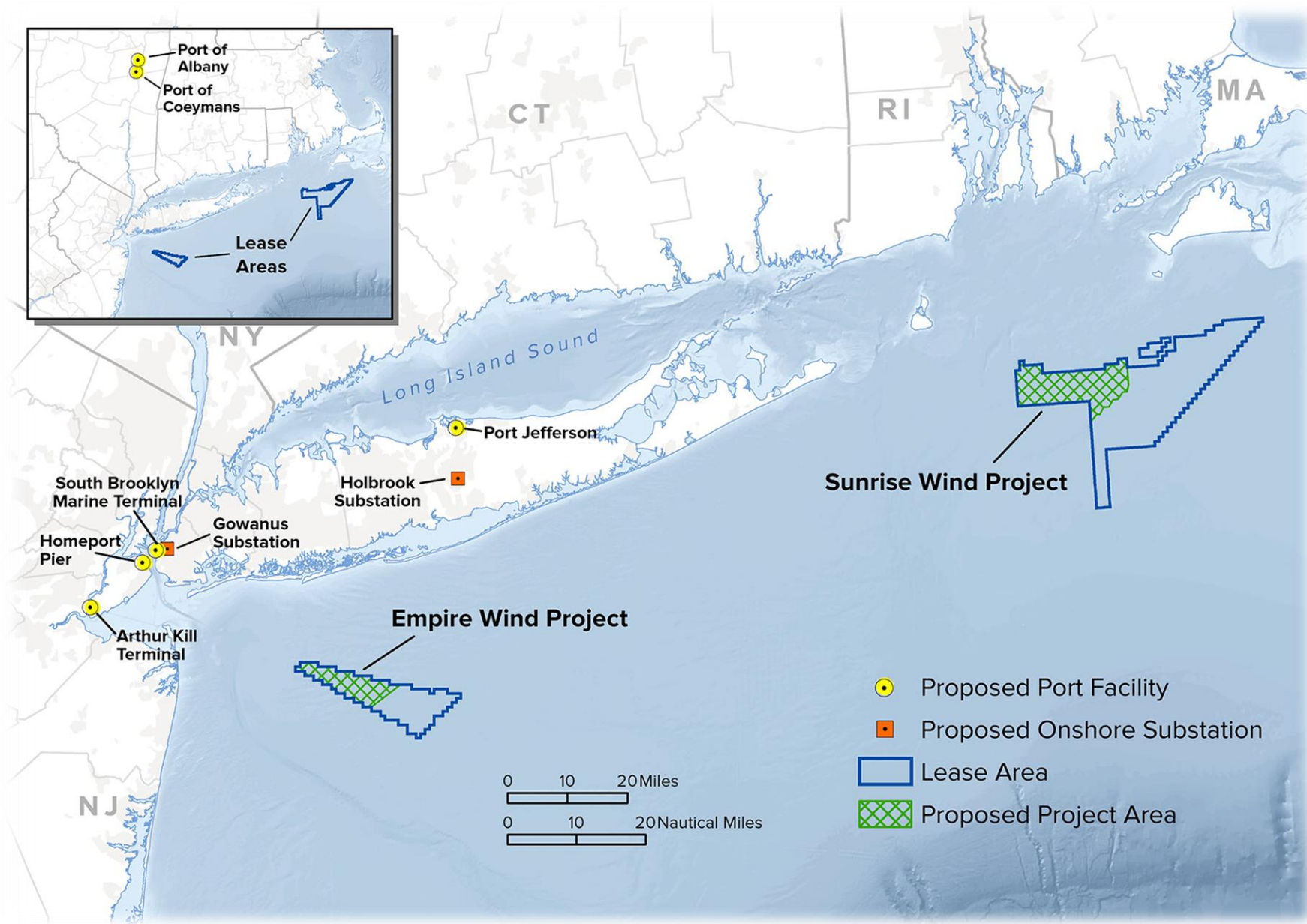
Working together to responsibly develop offshore wind energy

Empire Wind

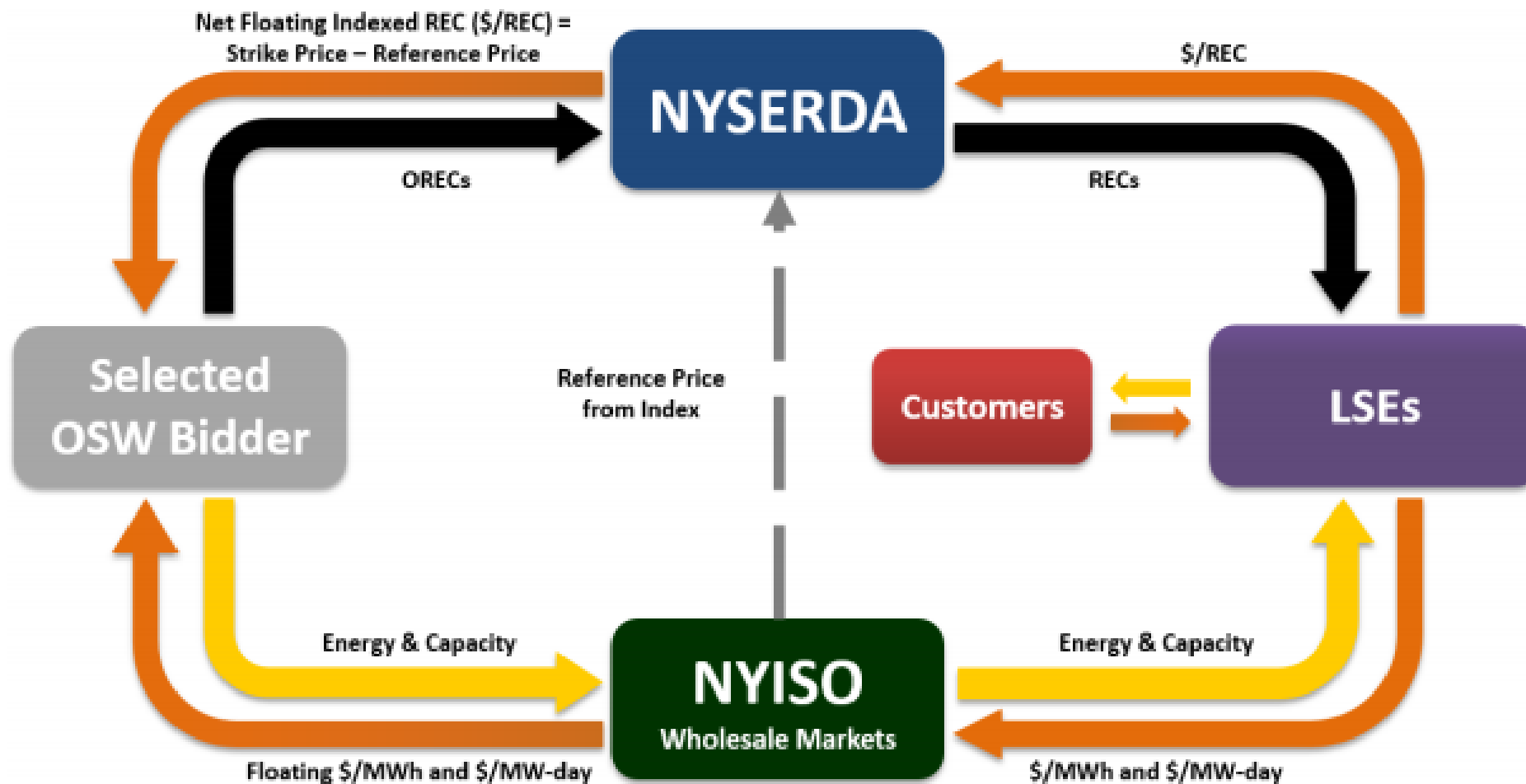
816 MW

Sunrise Wind

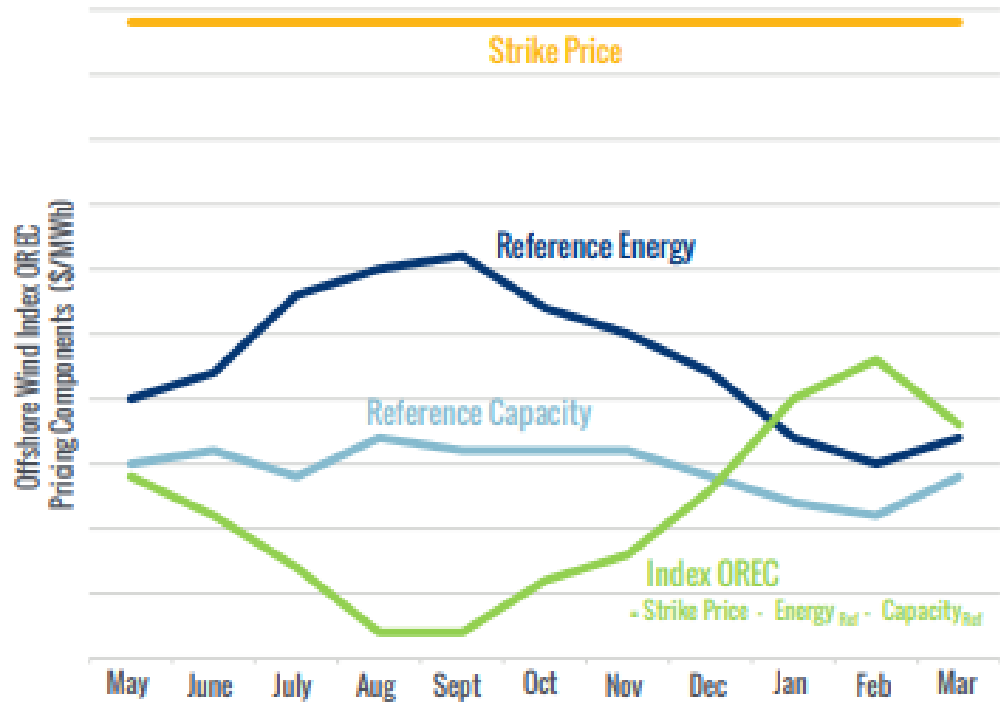
880 MW



1,696MW by 2024: Sunrise Wind and Empire Wind

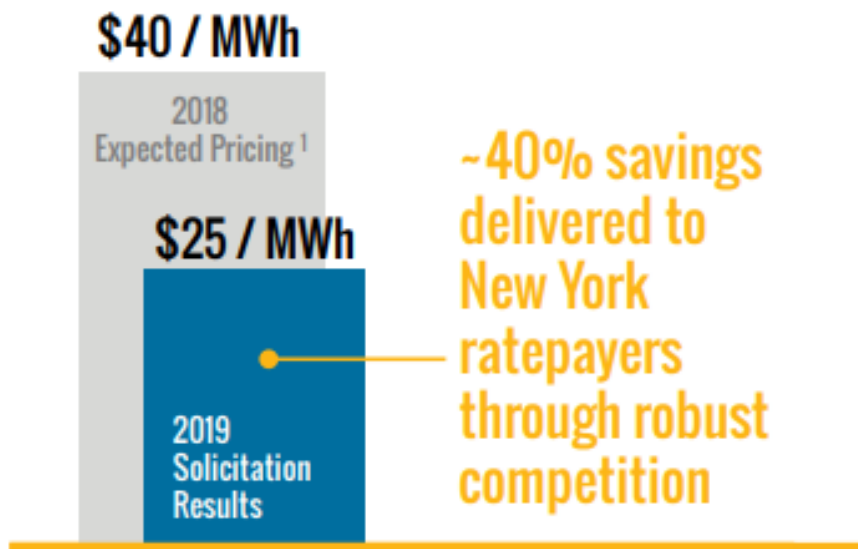


1,696MW by 2024: Sunrise Wind and Empire Wind



Strike Price
Represents the all-in cost per megawatt hour to develop an offshore wind project as competitively bid to NYSERDA.

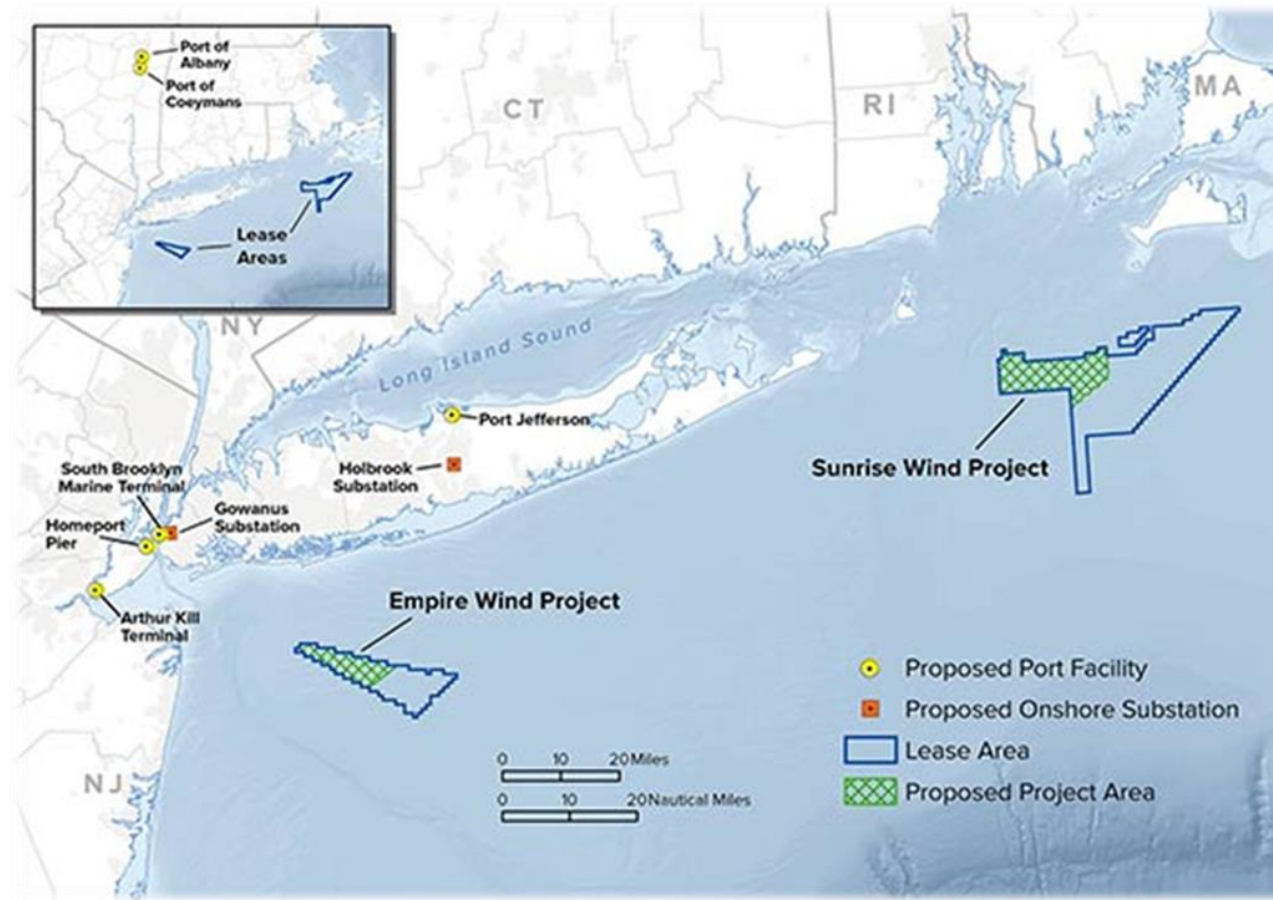
Index OREC
Payments rise and fall inversely to a composite average of New York's energy and capacity market prices, which do not reflect actual project revenues but do provide protection for ratepayers and projects against volatility in utility bills and project



The ratepayer impacts from this award are estimated to be less than \$1 dollar per month for an average residential customer.

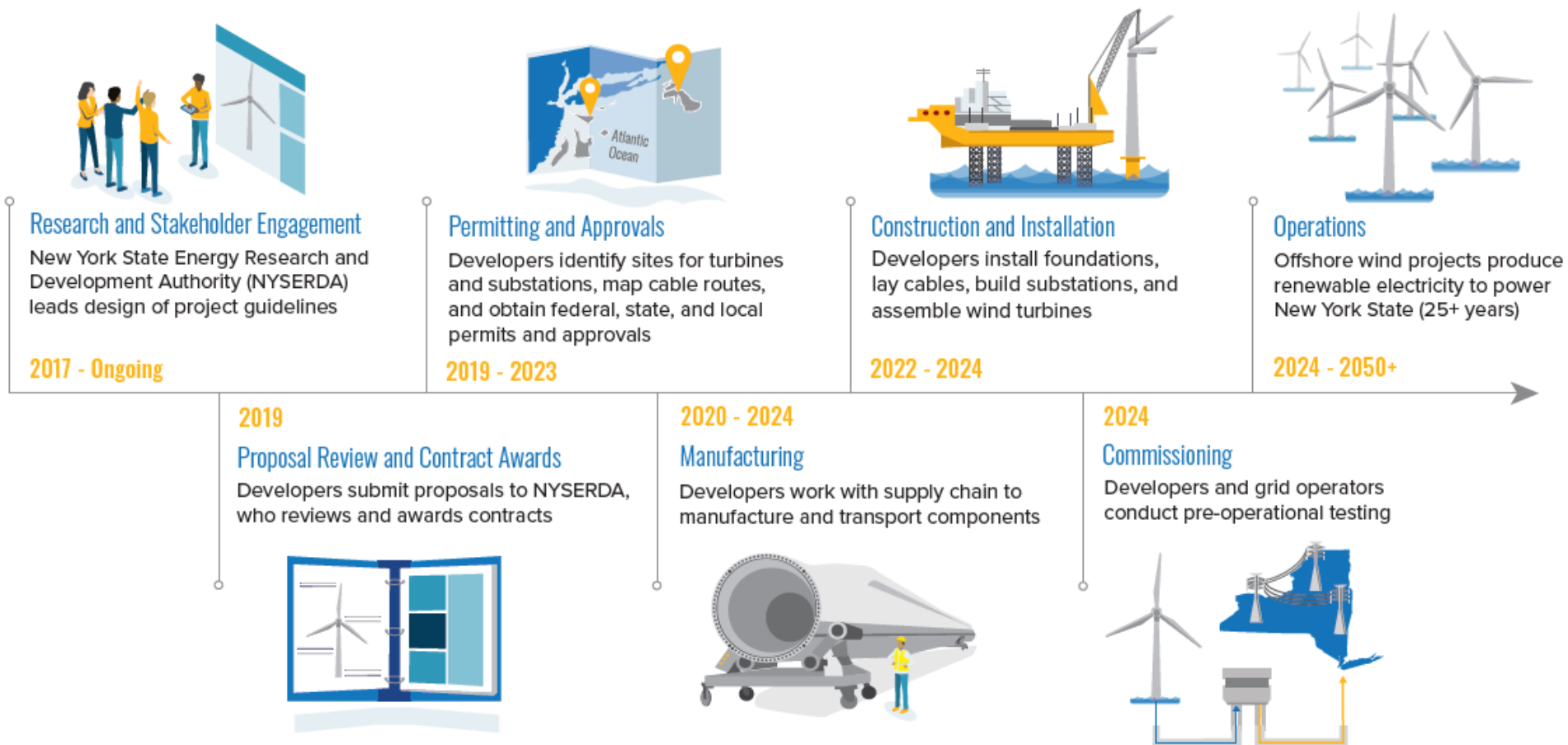
1,696MW by 2024: Sunrise Wind and Empire Wind

- > Together, they will power more than **1 million New York homes**
- > Bring a combined economic impact of **\$3.2 billion** to upstate, downstate, and Long Island
- > Invest more than **\$85 million in long-term port facilities** and cutting-edge technologies
- > Support more than **1,600 jobs** in project development, component manufacturing, installation, and operations and maintenance
- > Directly offer well-paying careers with salaries of **\$100,000 per year**
- > Both projects are proceeding **on-track**

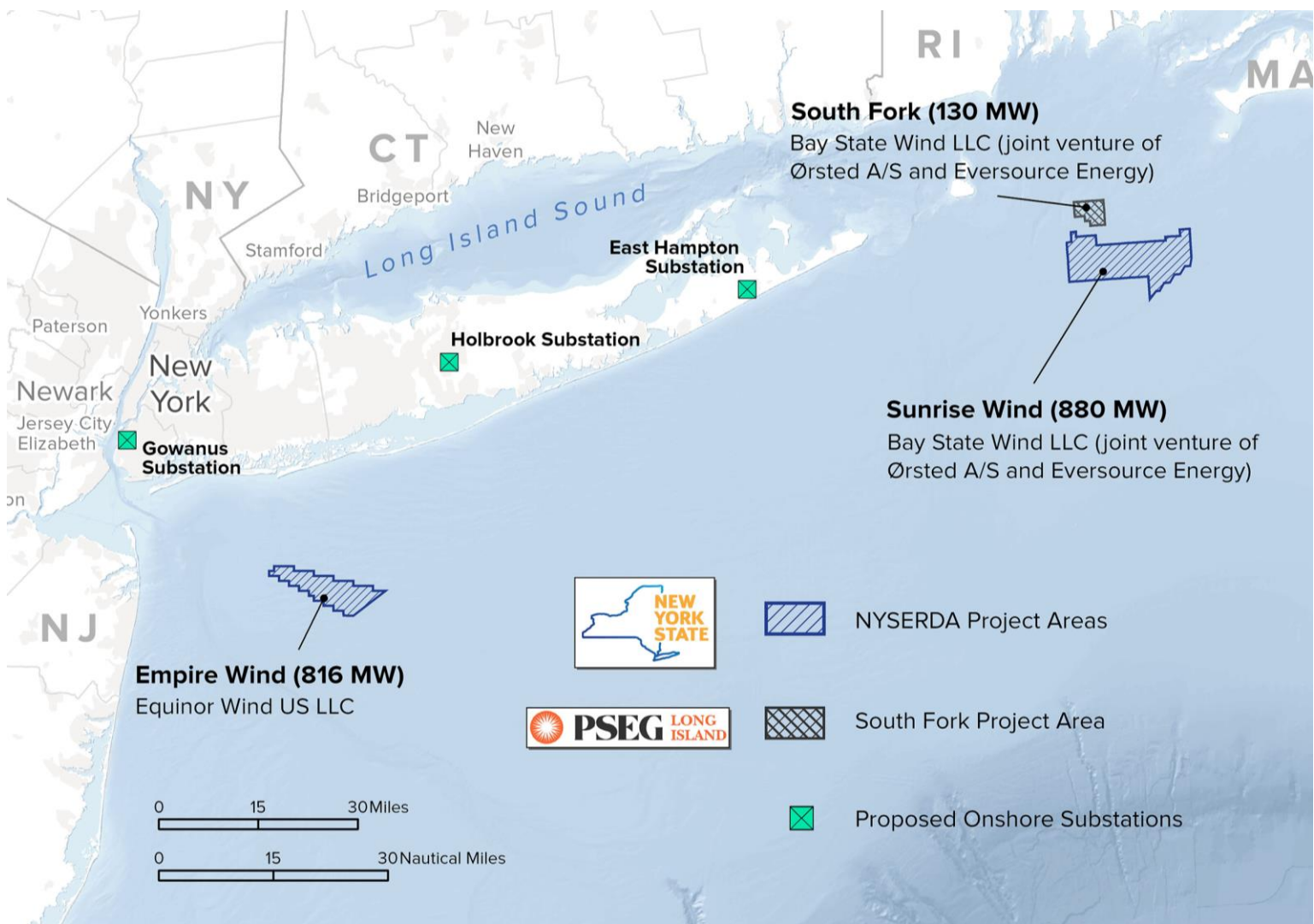


1,696MW by 2024: Sunrise Wind and Empire Wind

Timeline for 1st wave of projects (approximate dates)



1,826 MW of Executed NY Contracts



NY has **more offshore wind under development than any state in the nation.**

Project Schedules

South Fork (2015)

Q2 2020: Permits Issued
 Q2 2021: Construction Begins
 Q4 2022: Commercial Operation

Sunrise Wind (2019)

Q2 2022: Permits Issued
 Q1 2023: Construction Begins
 Q2 2024: Commercial Operation

Empire Wind (2019)

Q4 2021: Permits Issued
 Q1 2023: Construction Begins
 Q4 2024: Commercial Operation

White Paper: Clean Energy Standard to Implement CLCPA

Alignment with the CLCPA

- > Adopts 70 by 30 Goal
- > Definition of Renewable Energy

Procurement Targets

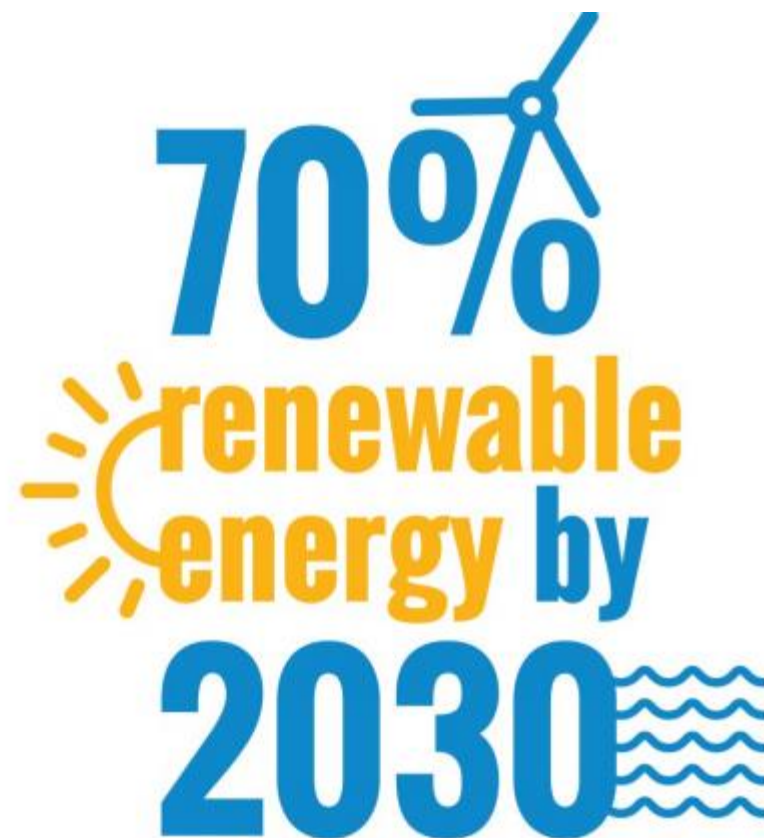
- > Tier 1 Land Based Renewables
- > Offshore Wind

Costs and Benefits Analysis

Repowering Proposal

Tier 4 Proposal

Competitive Tier 2 Petition



70%
renewable
energy by
2030

+White Paper: Clean Energy Standard to Implement CLCPA

Energy+Environmental Economics

New York State Decarbonization Pathways Analysis

Summary of Draft Findings
June 24, 2020

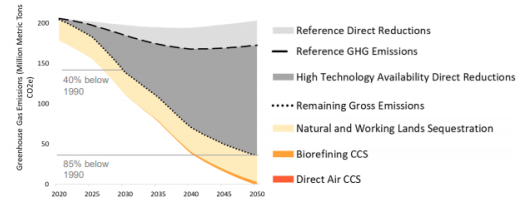
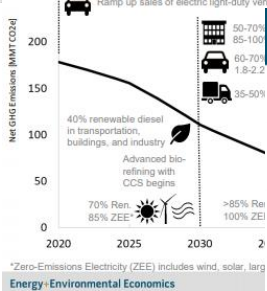
Key Takeaways

- + Achievement of emissions reductions to meet state law requires action in all sectors
- + A 30-year transition demands that action begin now

- Increased sales of high efficiency appliances, LEDs
- Ramp up sales of heat pump space heaters and water heaters
- 95-100% sales of heat pumps
- Ramp up sales of electric light-duty vehicles
- 50-70% 85-100%
- 60-70% 1.8-2.2
- 35-50%

Negative Emissions

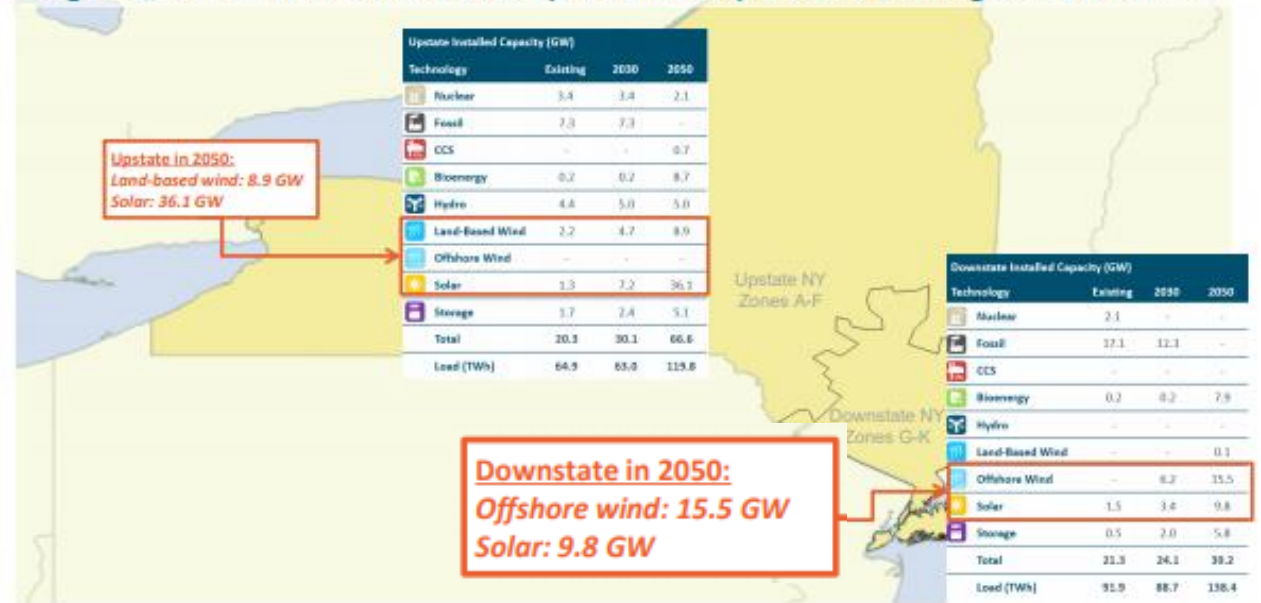
- + Negative emissions have an important role to play in carbon neutrality
- + With nearly 20 million acres of forest, New York State's natural and working lands sink provides between 23 to 33 MMT CO₂e of negative emissions across scenarios
- + Biorefining with CCS and direct air capture can provide additional negative emissions to offset remaining emissions in the energy and non-combustion sectors.



<https://climate.ny.gov/Meetings-and-Materials>

Electricity Supply

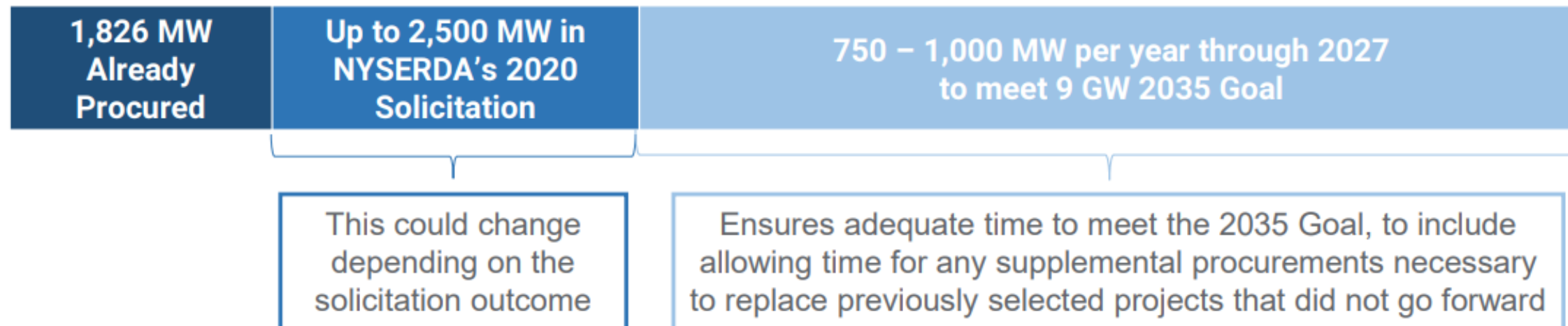
- + New York State has significant potential renewable energy resources and zero-carbon technology options, as well as access to adjoining states, provinces, and regional transmission systems, which offer additional options for energy supply.
- + Significant in-state renewable development will require careful siting considerations



White Paper Proposal: Adoption of the +9GW Goal

Proposal:

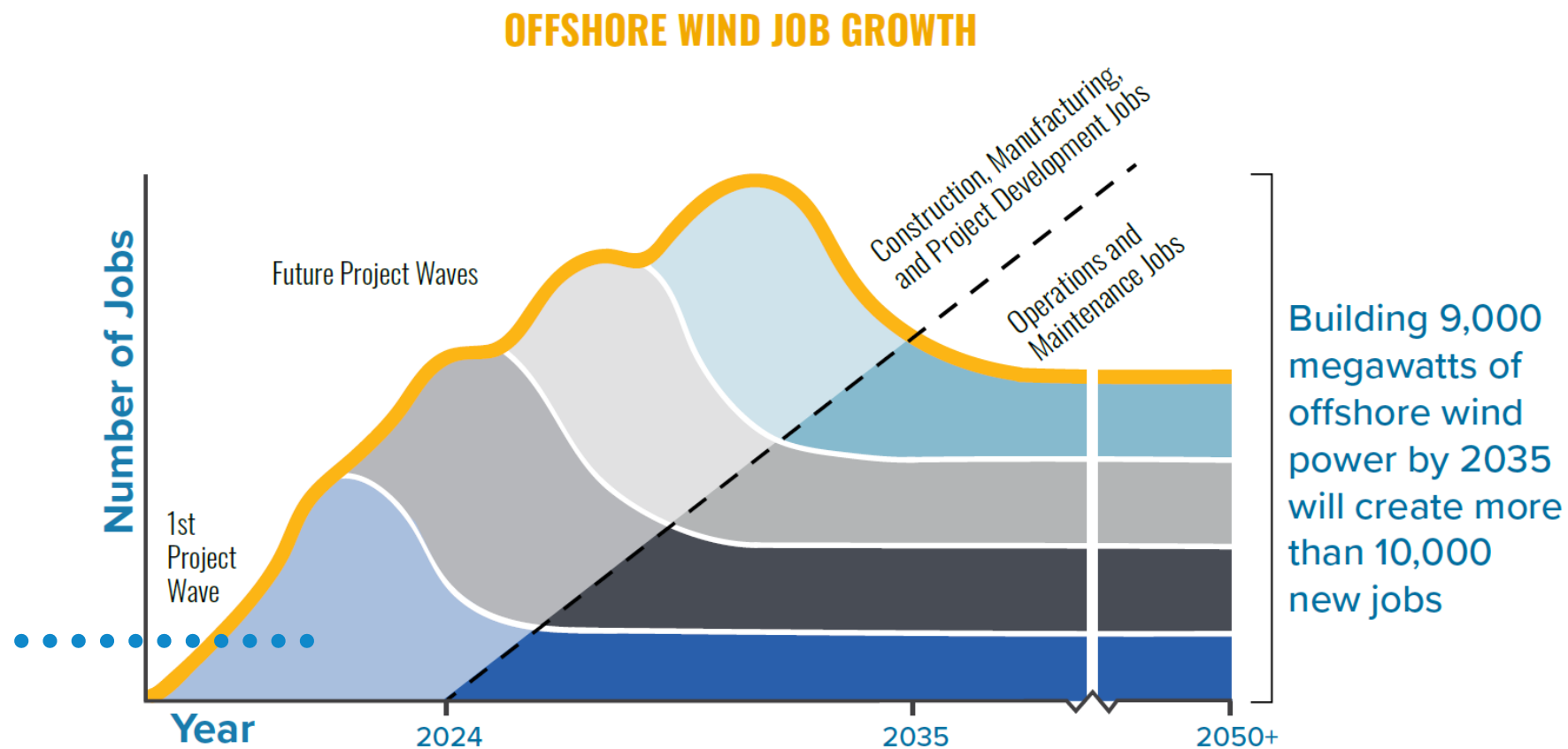
Formal adoption the CLCPA's minimum statewide goal of **9 GW of OSW by 2035** and the authority for NYSERDA to procure the remaining amount of ORECs necessary to achieve that goal, and the **flexibility** to do so in an effective manner.



White Paper Proposal: Building a +9GW Industry

Inaugural Solicitation:
1,600 jobs
in project development,
component manufacturing,
installation, and operations
maintenance

*Capital Region, Brooklyn,
Staten Island and Long Island*



2020 Offshore Wind Priorities

Launch the \$20M new Offshore Wind Training Institute (OWTI)

- **SUNY Farmingdale and Stony Brook will formally solicit partners for the \$20 million Offshore Wind Training Institute, so that training can begin in 2021, when the industry is expected to need a significant number of new skilled employees.**



2020 Offshore Wind Priorities



Morgan Brunbauer
NYS Offshore Wind
Marine Fisheries Manager



Captain Anthony (Tony) DiLernia
NYS Offshore Wind Recreational
Fisheries Liaison

NYS Fisheries Liaisons

Mitigation Plans & Best Management Practices



2020 Offshore Wind Priorities



\$200M Port infrastructure Investments

- More than 10 qualified projects
- NYSERDA, Department of Transportation (DOT) and Empire State Development (ESD) to initiate a competitive process to award \$200 million



2020 Offshore Wind solicitation: at least 1GW

- NYSERDA has requested authorization to issue a solicitation in 2020 for the procurement of at least 1,000 megawatts of offshore wind.

ORECRFP20-1 Now Live!

New York Launches Second OSW Solicitation



Offshore Wind Solicitation of Up To
2,500 Megawatts

Port Infrastructure Investment of
More Than \$400 Million

70% Price

20% Economic Benefits

10% Viability

<https://www.nyserda.ny.gov/offshore-wind-2020-solicitation>

\$400 million in Complementary Port Infrastructure Investments

- > The solicitation includes a **multi-port strategy** and requirement for offshore wind generators to partner with **any of the 11 prequalified New York ports** to stage, construct, manufacture key components, or coordinate operations and maintenance activities.
- > To support New York's position as the hub for the offshore wind industry, NYSERDA, with the assistance of NY Green Bank, Empire State Development and the New York State Department of Transportation, will all support this combined solicitation for investing in and upgrading the state's port infrastructure. **The \$400 million in private and public funding is comprised of:**
 - \$100 million in Empire State Development grant funding,
 - \$100 million in low-interest financing,
 - \$200 million in private-sector matching funds, for a 1:1 public/private match.



New York Forward: Building Back Better

Notable provisions in this comprehensive solicitation include:

- > Payment of the **prevailing wage**, a standard set by the New York State Department of Labor
- > Good-faith negotiations towards the use of **Project Labor Agreements** for workers associated with the construction of any awarded facility
- > Prioritizing opportunities for **New York State Minority- and Woman-Owned Business Enterprises and Service-Disabled Veteran-Owned Businesses** to support these projects;
- > Incentivizing **associated jobs, project spending, and infrastructure investments** in New York State by requiring awardees to provide an economic benefits plan for evaluation, **backed by independent audit and verification** of the realization of these claims;
- > Prioritizing **low-income census tracts and Environmental Justice Areas** to contribute to delivering the overall job creation and benefits to **Disadvantaged Communities**, consistent with the State's Climate Leadership and Community Protection Act;
- > (...)



New York Forward: Building Back Better

Notable provisions in this comprehensive solicitation include
(Cont'd):

- > Sending a clear **buy-clean demand signal** to the market to encourage the **consideration of the project's carbon footprint** in design, sourcing and construction and spur use of advanced materials;
- > Actively addressing the interests of ocean users such as commercial and recreational fishing and environmental stakeholders as reflected in **mitigation plans** which are informed by New York's Offshore Wind Technical Working Groups; and
- > The obligation to provide **financial and technical support to regional monitoring of wildlife and key commercial fish stocks** through a minimum contribution of \$10,000 per megawatt, which includes:
 - \$5,000 per megawatt must be used to support **regional monitoring of wildlife** to better understand how offshore wind energy development effects distribution and abundance of sensitive species.
 - \$5,000 per megawatt to support **regional monitoring of key commercial fish stocks** to better understand how offshore wind energy development is potentially altering the biomass and/or distribution of these stocks.



Schedule and Milestones

RFP Release Date	July 21, 2020
<u>Proposers' Conference</u> (password OREC)	August 12, 2020, 10:00 a.m.
Deadline for Submission of Written Questions	August 19, 2020, 3:00 p.m.
Responses to Written Questions Posted	August 26, 2020
Deadline for Notice of Intent to Propose	September 23, 2020, 3:00 p.m.
Deadline for NYSERDA Portal Registration	October 13, 2020, 3:00 p.m.
Deadline for Submission of Proposals	October 20, 2020, 3:00 p.m.
NYSERDA Award Notification Date	Q4 2020
Contract(s) Executed	Q4 2020

Next week!

- > **Notification of any changes to the RFP process or documents will be posted on the [NYSERDA Offshore Wind 2020 Solicitation website](#) and sent via email to those parties who have submitted a Notice of Intent to Propose.**



Offshore Wind Solicitation of Up To
2,500 Megawatts

Port Infrastructure Investment of
More Than \$400 Million



Combined, these Clean Energy Projects will

\$7 BILLION
in Investments and More than
4,500 JOBS

New York has issued the

LARGEST

Combined Solicitations for

RENEWABLE

ENERGY

ever by a U.S. State



NYSERDA



Solicitations for Land-Based Renewable Energy Projects of

1,500+ Megawatts

Which is Equivalent to Powering
500,000 Homes for 20 Years

**CLEAN ENERGY
PROJECTS WILL**

- ✓ Jumpstart New York's economy and accelerate climate goals
- ✓ Prioritize hiring in Environmental Justice Areas
- ✓ Benefit disadvantaged communities
- ✓ Require project labor agreements and/or prevailing wage for good paying jobs

Questions?

Adrienne Downey
Principal Engineer, Offshore Wind, NYSERDA

Thank you for attending our webinar

Val Stori

Project Director

Clean Energy States Alliance

val@cleanegroup.org

Learn more about the 2020 State Leadership in Clean Energy Awards at <https://www.cesa.org/projects/state-leadership-in-clean-energy/2020-awards/>

Connect with us on Facebook: <https://www.facebook.com/cleanenergystates/>

Follow us on Twitter: @CESA_News



Upcoming Webinars

State Leadership in Clean Energy: SMUD's Energy Storage Shares Program

Thursday, August 20, 2-3pm ET

The Role of Hydropower in State Clean Energy Policy

Tuesday, September 8, 2-3pm ET

Power After Carbon: Findings and Insights for State Policymakers

Wednesday, September 9, 3-4pm ET

Read more and register at: www.cesa.org/webinars