



# Great Lakes Wind Feasibility Study Public Webinar #1

**March 19, 2021**

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Project Manager, Great Lakes Wind Team**

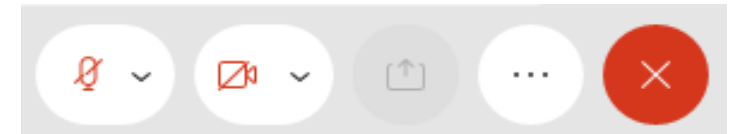


**NYSERDA**

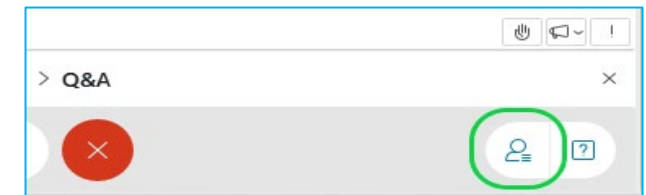
# Meeting Procedures

## Participation for Members of the Public:

- > Members of the public are muted upon entry.
- > Questions and comments may be submitted in writing through the Q&A feature at any time during the event.
  - > Chat is disabled
- > Today's materials along with a recording of the webinar will be posted to NYSERDA's Great Lakes Wind website.
- > If technical problems arise, please contact [Sal.Graven@nyserda.ny.gov](mailto:Sal.Graven@nyserda.ny.gov)



**You'll see  when your microphone is muted**



# About NYSERDA

## **Our Vision**

New York is a global climate leader building a healthier future with thriving communities; homes and businesses powered by clean energy; and economic opportunities accessible to all New Yorkers.

## **Our Mission**

Advance clean energy innovation and investments to combat climate change, improving the health, resiliency, and prosperity of New Yorkers and delivering benefits equitably to all.

## **Our Promise**

NYSERDA provides resources, expertise, and objective information so New Yorkers can make confident, informed energy decisions.

# Agenda

- > **Agenda Overview**
- > **Climate Leadership and Community Protection Act**
- > **Public Service Commission Order**
- > **Great Lakes Wind Feasibility Study**
- > **Stakeholder Input and Resources**
- > **Next Steps**
- > **Q&A**

# **Climate Leadership and Community Protection Act**

# New York State Clean Energy Goals

**CLEAN ENERGY ECONOMY**

nearly 159,000 clean energy jobs



**now**

**RENEWABLE ENERGY**

6,000 MW of distributed solar



**by 2025**



**RESILIENT and DISTRIBUTED GRID**

1,500 MW of energy storage

**ENERGY EFFICIENCY**

185 Tbtu end-use savings in buildings and industrial facilities

**RENEWABLE ENERGY/  
CLEAN ENERGY STANDARD**

70% electricity from renewable energy



**by 2030**



**GHG REDUCTION**

40% reduction in greenhouse gas emissions from 1990 levels

3,000 MW of energy storage  
30,000 employed in storage sector

**RENEWABLE ENERGY**

9,000 MW of offshore wind



**by 2035**

**CLEAN ELECTRICITY**

100% zero-emission electricity



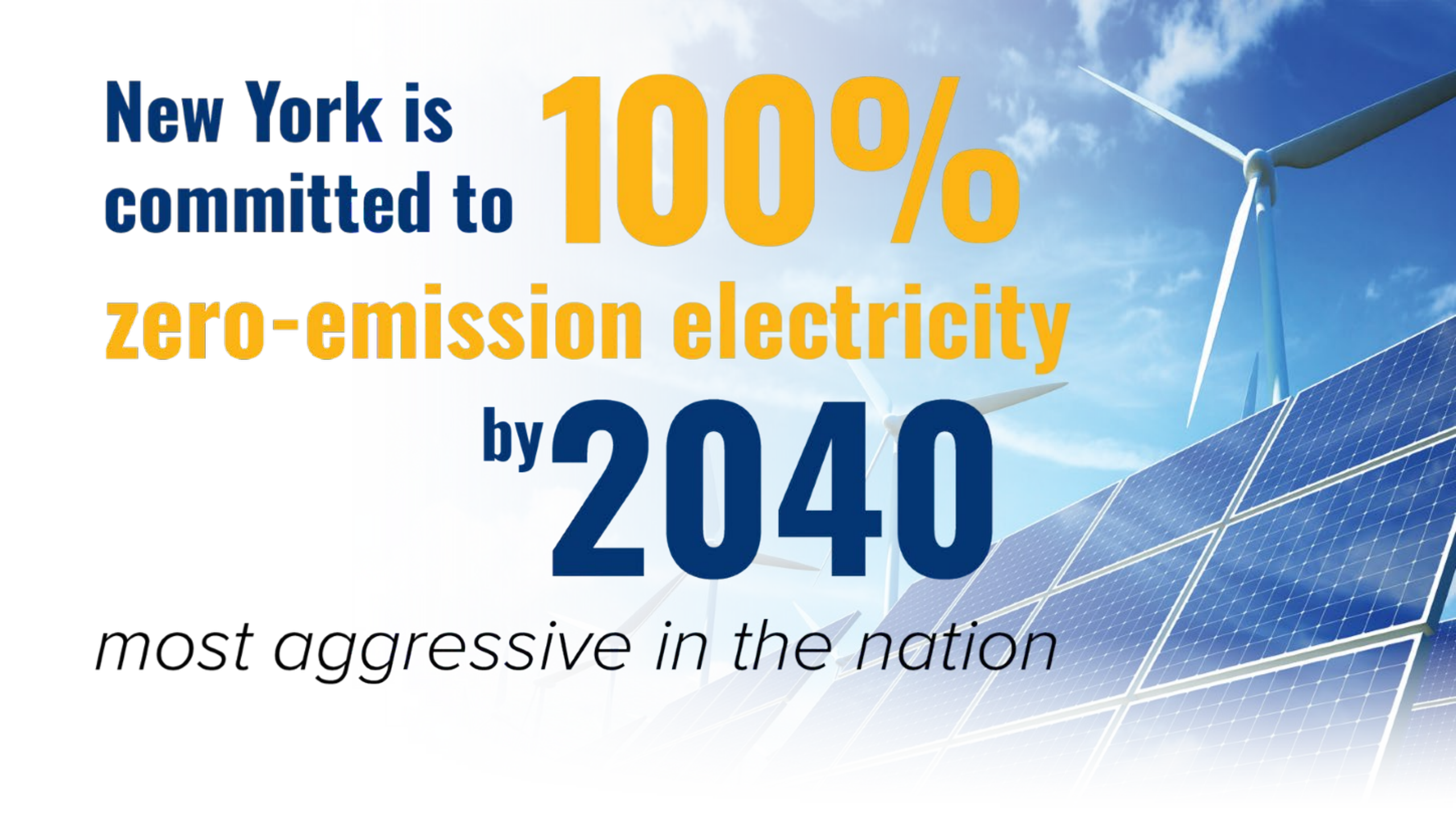
**by 2040**

**GHG REDUCTION**

85% reduction in greenhouse gas emissions from 1990 levels



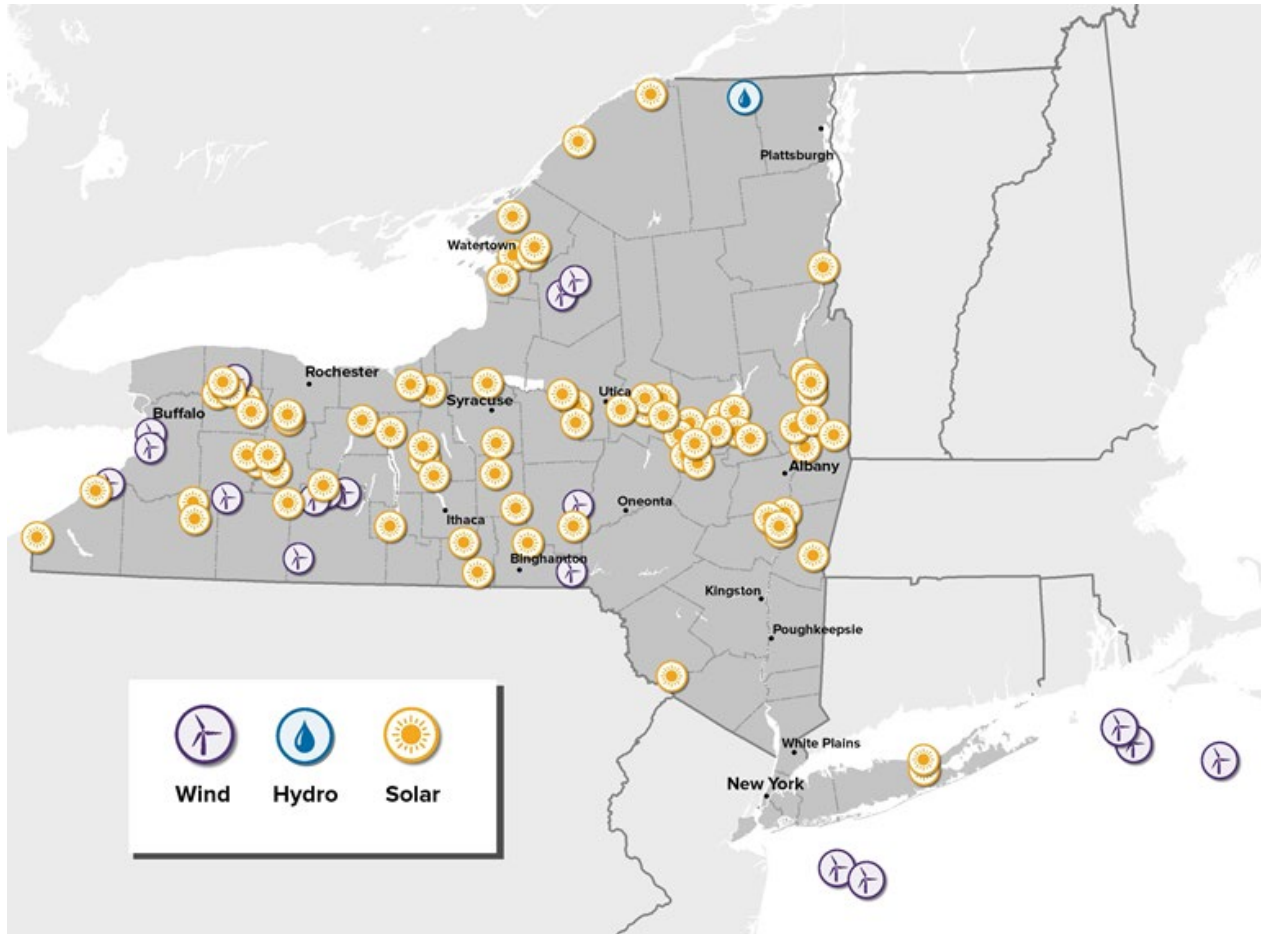
**by 2050**



**New York is committed to 100%  
zero-emission electricity  
by 2040**

*most aggressive in the nation*

# A Significant Statewide Renewable Ramp-Up



**Over 90 projects**  
**10,800+ MW**

Includes recently announced **2 new offshore wind projects** and **22 large-scale solar, hydroelectric, and energy storage projects** across upstate New York, totaling **over 4,600 MW** of new renewable capacity and **30 MW** of energy storage capacity



# Public Service Commission Order

Published 10/15/2020

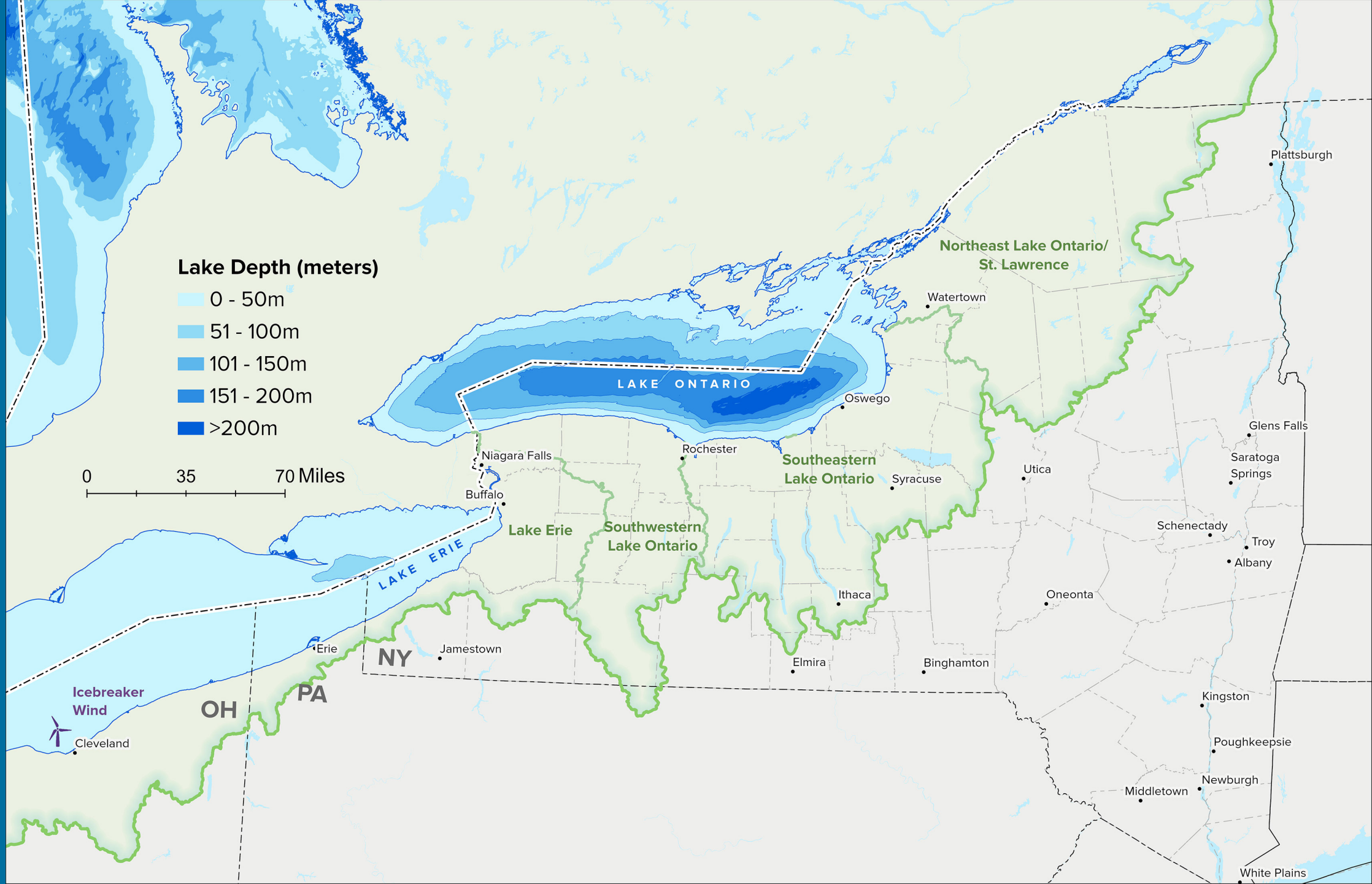
## Directs NYSERDA to:

- > Conduct a feasibility study for wind energy generation in the Great Lakes
- > Commence work with 180 days of order within \$1 million budget



Fishing during sunrise on Lake Erie

# Great Lakes Wind Feasibility Study



# Great Lakes Wind Feasibility Study

## Study will include:

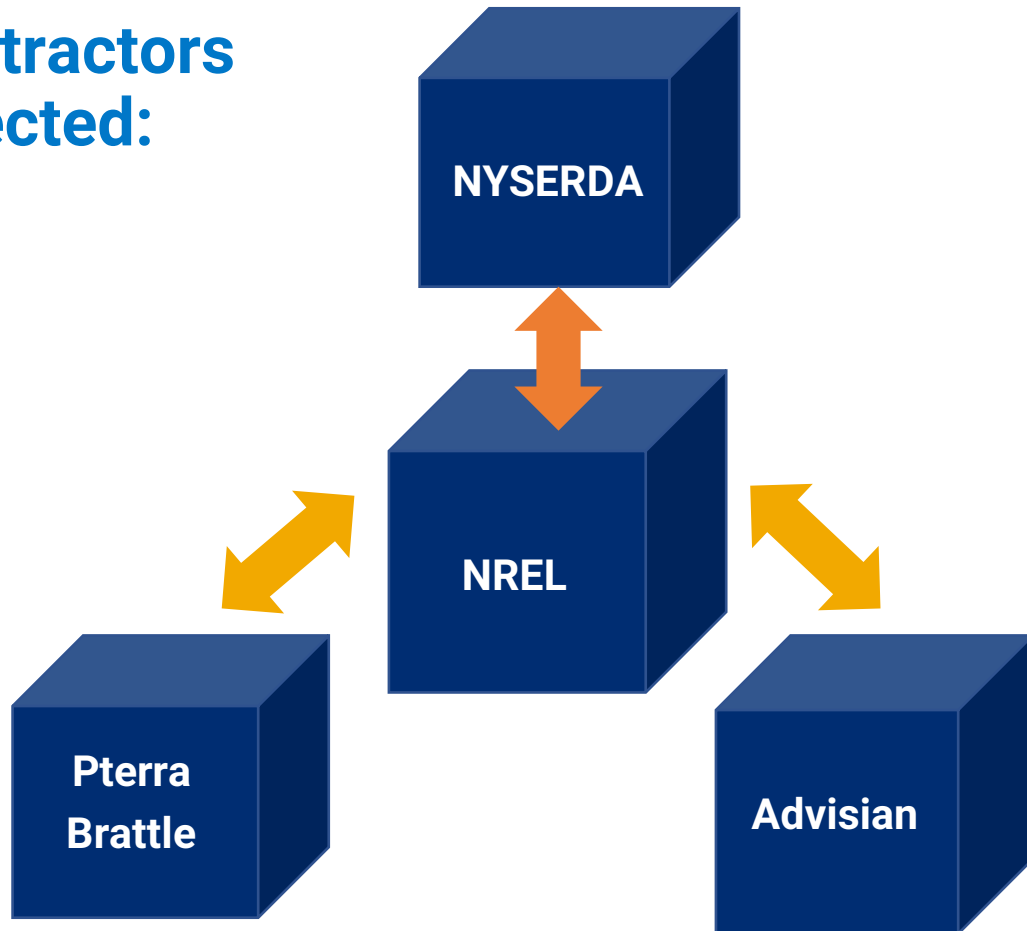
- > Technology (e.g., icing considerations) and timelines
- > Weather, windspeeds
- > Environmental conditions
- > Cost projections, power production estimates
- > Ports and related infrastructure
- > Economic development opportunities, jobs
- > Environmental justice
- > Regulatory and permitting processes
- > Resource users, wildlife and potential conflicts (e.g., wildlife, shipping, fishing)
- > NYISO Grid interconnection, energy deliverability
- > Public Feedback



Photo credit: Pori Offshore Wind Farm taken by Soumen Hyötötöuuli courtesy of Ken Croasdale to NREL

# Great Lakes Wind Feasibility Study

## Contractors selected:



## Anticipated Timeline:

- > Q1 2021 Work began February
- > Q2 2021 Public webinar on study progress
- > Q3 2021 Public webinar on study progress
- > Q4 2021 Public Webinar on Draft Study
- > Q4 2021 Targeted study completion, released early 2022

# Great Lakes Wind Feasibility Study

## Technology, Costs, Economic Development

### Contracted Principal Investigator:

National Renewable Energy Laboratory (NREL)

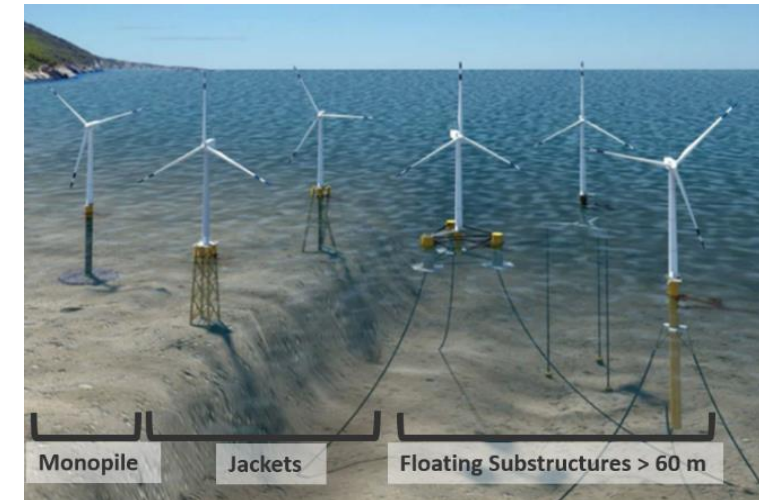
Feasibility Study Overall Coordination & Final Synthesis Report



### Topics to be covered in Study:

#### Wind Plant Technology Review

- > Evaluation of site conditions
  - Characterization of Ice Climate
  - Lake bottom soil conditions
  - Bathymetry and waves
  - Great Lakes Wind Resource
- > Technology Options
  - Infrastructure: Assessment of Physical Constraints
  - Existing Technology Assessment
  - Future Technology Assessment
  - Geo-spatial analysis of gross energy capacity, local generation capacity, and physical site assessment



Source: NREL

# Great Lakes Wind Feasibility Study

## Technology, Costs, Economic Development

### Topics to be covered in Study (Cont'd):

#### Costs and Cost Reduction Pathways and Production

- > Fixed and Floating Scenario Development
- > Costs and Sensitivity Study
- > Power Production Estimates

#### Economic Development and Workforce Opportunities

- > Jobs and Economic Development Impacts Modeling (i.e., JEDI model)
- > Workforce Assessment
- > Port Infrastructure Considerations

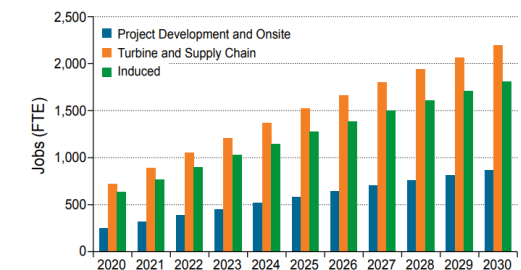


Figure 1. Estimated number of jobs supported by offshore wind deployment from 2020 to 2030 in the Great Lakes region (moderate scenario)

# Great Lakes Wind Feasibility Study

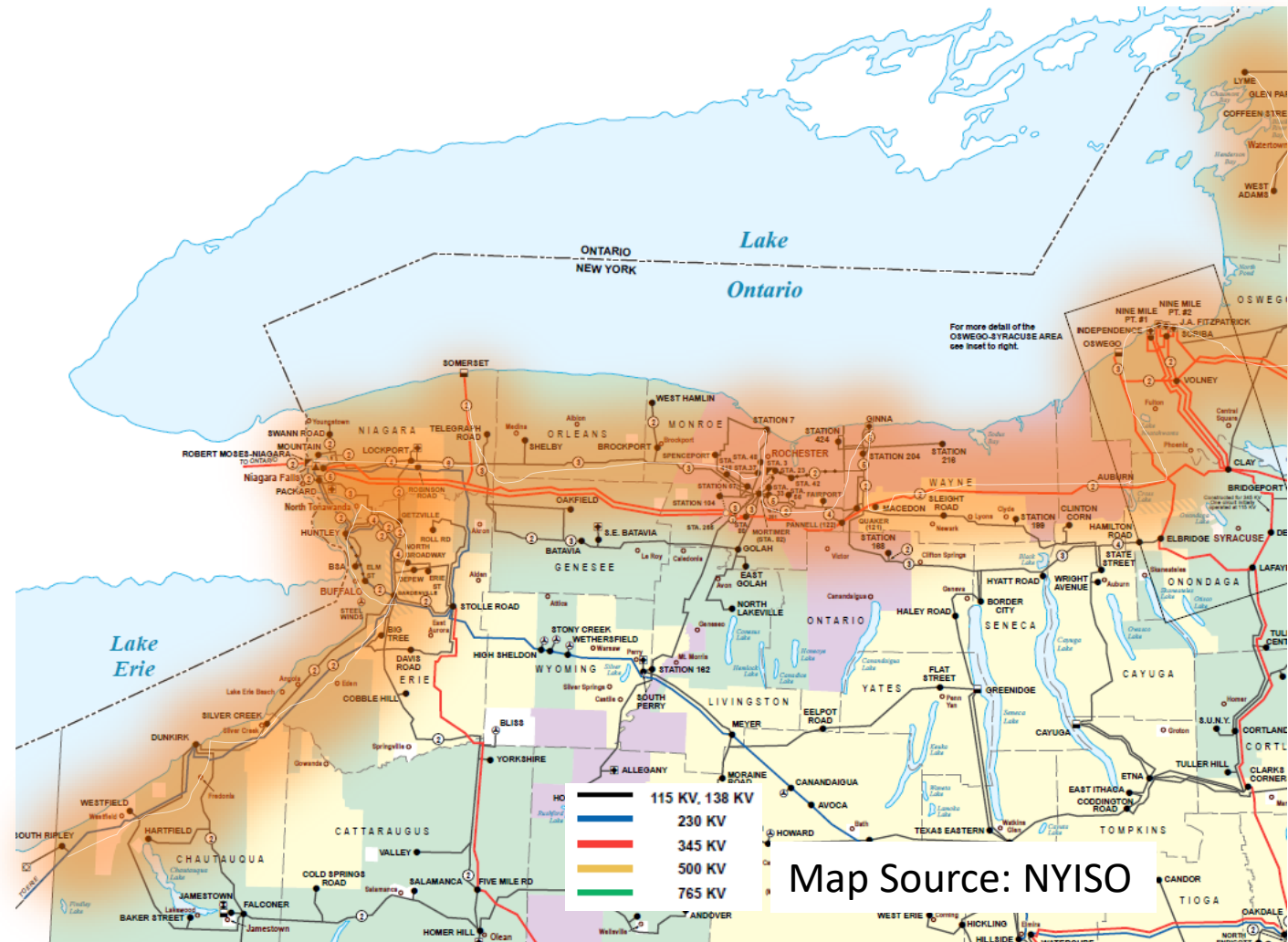
## Electric Grid Interconnection

### Contracted Principal Investigator:

- > Pterra LLC
- > Brattle Group

### Topics to be covered in Study:

- > Feasibility of interconnecting of Great Lakes Wind resources to New York Electric Power System
- > Identify points of interconnection to the land-based power system
  - the capacity that can be connected
  - any congestion or curtailment risks
  - any needed electric KV transmission upgrades



# Great Lakes Wind Feasibility Study

## Permitting, Environmental, Viewshed

### Contracted Principal Investigator:

Advisian Worley Group

### Topics to be covered in Study:

#### Federal, State, and Utility Permitting Study

- > Develop a table to indicate the permit multi-state requirements
- > Permitting thresholds and findings
  - Wildlife
  - Habitat
  - Risks and opportunities created by authorization processes
  - Options that could creating efficiencies and reducing conflicts

#### Geophysical and Geohazards Study

- > Present site conditions
  - Active processes and interactions
    - Sediment transport
    - Offshore wind technology structure



# Great Lakes Wind Feasibility Study

Permitting, Environmental, Viewshed

## Topics to be covered in Study (Cont'd):

### Relative Risks, Mitigations, and Benefits

- > Potential risks (wildlife, uses, communities)
- > Assessment of stressors, receptors, impacts, and mitigations
- > Historic/cultural areas, potential conflicts
- > Assessment of public health benefits

### Visual Impact Study

- > Visualization maps of potential Lake Erie wind
- > Visualization map of potential Lake Ontario wind



# Public Resources

## Great Lakes Wind Feasibility Study

- > Website:  
[nyserdera.ny.gov/Great-Lakes-Wind-Feasibility-Study](https://nyserdera.ny.gov/Great-Lakes-Wind-Feasibility-Study)
- > Email NYSERDA GLW Team:  
[greatlakeswind@nyserdera.ny.gov](mailto:greatlakeswind@nyserdera.ny.gov)
- > **Sign-up for email updates**
- > Additional Public Webinars on Study Progress
  - May 2021
  - August 2021
  - October 2021
  - Early 2022: Final Report Public Webinar
- > One-on-one stakeholder engagement
- > Building a record of engagement



Young girls walking along a rocky beach on Lake Erie

# Stakeholder Engagement

## Great Lakes Wind Feasibility Study

How would you and your community best engage with NYSERDA during the creation of this study?

Select as many options as necessary from below:

- #1 Website and Email regular updates
- #2 Social Media
- #3 Dedicated Public Webinar to Collect and Document Public Feedback and Q&A
- #4 Public Feedback Period when Draft Study is released
- #5 Online Surveys

# Next Steps

## Great Lakes Wind Feasibility Study

- > **Work is under way and we want to stay engaged!**
- > **Next webinar: May 2021** - Will offer project updates and preliminary results on each study component with help of contractors as subject matter experts
- > NYSERDA will conduct outreach for more ways stakeholders can provide input into the study process. **Please stay tuned!**
- > Sign up for email updates and get the latest on study progress at the NYSERDA Great Lakes Wind website
- > Email the Great Lakes Wind Team at [greatlakeswind@nyserda.ny.gov](mailto:greatlakeswind@nyserda.ny.gov)

# Thank you

For more information, please contact:

**NYSERDA Great Lakes Wind Team**  
[greatlakeswind@nyserda.ny.gov](mailto:greatlakeswind@nyserda.ny.gov)



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