

New York State Offshore Wind

Frequently Asked Questions



Offshore Wind

Why offshore wind?

Offshore wind is a renewable energy resource that will provide clean, locally produced power where demand is highest, avoid harmful greenhouse gas emissions, and bring significant investments and well-paying jobs to communities along New York's Atlantic coast and up to the Capital Region. New York State is committed to advancing offshore wind in a way that maximizes competitive bidding and ensures the lowest cost, while stimulating equity through project benefits, economic development and fostering local job creation and workforce development opportunities. Offshore wind is a key component in New York's nation-leading climate law, the Climate Leadership and Community Protection Act (Climate Act), which calls for 70% of the State's electricity to come from renewable sources by 2030 and 9,000 MW of offshore wind energy by 2035, which can power up to 6 million homes.

How is New York State leading offshore wind development in the U.S.?

With the largest offshore wind pipeline in the nation, New York has five offshore wind projects in active development, totaling more than 4,300 megawatts. NYSERDA awarded a total of four offshore wind projects to bring clean power to the State's electricity grid – Empire Wind 1 (816 MW), Empire Wind 2 (1,260 MW), and Beacon Wind (1,230 MW) (Equinor Wind US LLC) and Sunrise Wind (880 MW) (Sunrise Wind LLC, a joint venture of Ørsted A/S and Eversource Energy). In addition, the Long Island Power Authority awarded a contract for the 130-megawatt South Fork Wind Farm (Ørsted A/S and Eversource Energy). To support these and future offshore wind projects, offshore wind developers are investing in the State's workforce and resilient port facilities, making New York a leader in offshore wind supply chain development.

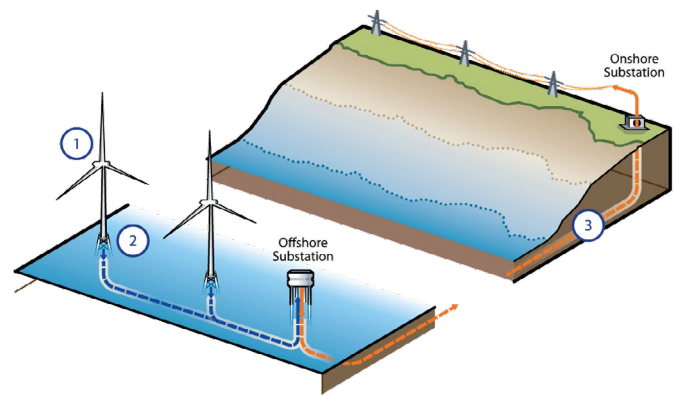
Additionally, New York State continues to play a critical leadership role in the Northeast and Mid-Atlantic through its technical working groups, facilitating important best practices, research and adaptive management strategies, and active stakeholder engagement approaches. Nationally, New York State is a key partner in the National Offshore Wind Research and Development Consortium, an independent, not-for-profit organization dedicated to managing industry-focused research and development of offshore wind to maximize economic benefits for the U.S.

How will NYSERDA-awarded projects benefit all New Yorkers?

Working on behalf of the State's utilities, NYSERDA competitively procures offshore wind via 25-year Offshore Wind Renewable Energy Certificate (OREC) contracts where ORECs represent the environmental attributes (e.g. clean air, public health) associated with each unit of offshore wind renewable energy (megawatt hour) that is currently not accounted for in New York's energy markets. In enabling these projects, NYSERDA is working to ensure these clean energy resources come online to service the ambitious climate and public health goals of the Climate Act.

Together, New York's five offshore wind projects will bring a combined economic impact of more than \$12.1 billion to upstate, downstate, and Long Island, and will support more than 6,800 jobs in development, manufacturing, installation, and operations and

How Offshore Wind Works



1. Offshore turbines capture the wind's energy and generate electricity.
2. Foundations secure turbines to the ocean floor and cables transmit electricity to an offshore substation.
3. Electricity flows through a buried cable to an onshore substation and is transferred to the existing transmission network to be distributed statewide to the grid.

maintenance, directly offering well-paying careers with average salaries of approximately \$100,000 per year. The projects will yield significant new investments in resilient port infrastructure and supply chain opportunities in multiple regions of the State, including the nation's first offshore wind tower manufacturing facility and the fabrication of advanced components in the Capital Region, a cutting-edge staging facility in Brooklyn, and regional operations and maintenance hubs in New York City and Long Island.

The average bill impact for residential customers statewide from NYSERDA's 2020 procurement (Empire Wind 2 and Beacon Wind) will be less than a dollar per month. Total project costs are approximately 7 percent lower than those of the 2018 awarded projects.

How many jobs will offshore wind create?

New York's economy and its communities will benefit from billions of dollars in infrastructure investments and more than 10,000 new jobs in manufacturing, installation, and operation of offshore wind facilities. Consistent with the Climate Act's commitment to building climate equity, the NYSERDA project selection process prioritizes benefits to Disadvantaged Communities, and the OREC contracts include important provisions for wage and labor agreements by offshore wind developers as well as commitments to incentivize opportunities for Minority- and Women-Owned Businesses (M/WBEs) to ensure that the projects deliver high-quality jobs for New York workers.

How can New Yorkers be trained to join the offshore wind workforce?

The State is taking new steps to support workforce development in partnership with the private sector, including a \$20 million Offshore Wind Training Institute (OWTI), a \$10 million National Offshore Wind Training Center (NOWTC) with Sunrise Wind, and a \$5 million Ecosystem Fund with Equinor to establish the institutional infrastructure to educate, train and employ New Yorkers in offshore wind. These investments will particularly benefit New York's low-income and environmental justice communities.

How are offshore wind projects sited?

Selecting ocean areas for offshore wind development and connecting the power to New York's electricity grid are highly regulated processes involving many federal and state agencies that require intensive consideration and study of environmental, cultural, maritime, economic, and social factors. These complex processes include many checks and balances and considerable opportunities for stakeholder engagement to promote a considered solution that offers the least impact for each project while satisfying the State's need for clean energy. For more information, see the federal [Bureau of Ocean Energy Management \(BOEM\) regulatory framework](#) and the [New York State Article VII process guide](#).

Are marine and coastal species protected?

New York State continues to actively study marine mammals, sea turtles, birds, bats, and fish to ensure that offshore wind will be responsibly sited and developed. The wind turbine permitting process is incredibly thorough, and involves federal, state, and local authorities who review and consider every aspect of the project's impact to the environment and can request additional research from developers or require specific mitigation.

The State is also leading an Environmental Technical Working Group (E-TWG) comprised of environmental organizations, developers, and state and federal regulators. The E-TWG is developing Best Management Practices for offshore wind that are protective of wildlife at all stages of development. Additionally, NYSERDA requires that project developers submit and evolve Environmental Mitigation Plans to formalize adaptive management through discussions with environmental stakeholders and provide financial support for regional monitoring of wildlife.

Will fishing and shipping continue around wind farms?

New York State and the federal government do not anticipate imposing any restrictions on fishing around the wind turbines. NYSERDA requires the submission of Fishing Mitigation Plans, a first in the industry, as part of the offshore wind developers' contracts. The Mitigation Plans from awarded projects are shared and discussed with the State's Commercial Fishing Technical Working Group (F-TWG), comprised of commercial fishermen, developers, and state and federal regulators. As the project advances, the Mitigation Plans will evolve to include input from the F-TWG on topics that include strategies for turbine configurations and spacing. Additionally, NYSERDA requires developers to provide financial support for regional monitoring of key commercial fish stocks.

Safe navigation is vital to preserve the significant maritime activity that occurs off New York's coast. The State conducted studies and continuously consults with the maritime industry to understand their operational requirements to ensure impacts to shipping are minimized. In consultation with the United States Coast Guard, wind farm developers are required to perform a navigational risk assessment. Additionally, the turbine bases will be lit so they are visible to mariners and marked on navigation charts, in keeping with safety measures of other offshore structures.

Why is New York investing in ports to support offshore wind?

Due to the size of offshore wind components (a single rotor blade may be greater than 300 feet long), major components must be delivered to a project by boat and rely heavily on port infrastructure for their manufacturing, assembly, staging and delivery to a wind farm. Crew and service equipment access to the wind farm long-term, in support of its 25-year operations and maintenance, are also important port uses for offshore wind. In addition to the port investments by the Empire Wind and Sunrise Wind projects, the Empire Wind 2 and Beacon Wind projects will leverage almost \$3 private dollars for every \$1 public dollar to unlock \$644 million in investments for ports in the Capital Region and Brooklyn, including the nation's first offshore wind tower manufacturing facility at the Port of Albany. With five active ports and dozens more of potential development interest to this evolving industry, these investments reinforce New York's position as the hub of the burgeoning U.S. offshore wind industry.

What happens at the end of a turbine's 25-year life span?

The federal government requires that offshore wind farm developers submit a decommissioning plan as well as post a bond to cover the cost of decommissioning the wind farm when it has reached the end of its useful life.

Use Your Thumb

How big will wind turbines appear from shore?

The closest offshore wind farm to New York's coast will be the Empire Wind 1 project, located approximately 14 miles from Jones Beach State Park on Long Island at its closest point. If you fully extend your arm and look at your thumb, the turbines may be visible under clear weather conditions at less than a quarter the size of your thumbnail. All other projects will be at least 21 and up to 63 miles away, outside the range of visibility from New York's shoreline.



Visit nyserdera.ny.gov/offshorewind for more information on offshore wind in New York State.



NYSERDA