

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 economic development and fostering local job creation. Offshore wind is a key component in Governor Cuomo’s ambitious and comprehensive climate and clean energy agenda which calls for the nation-leading goals of 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.?

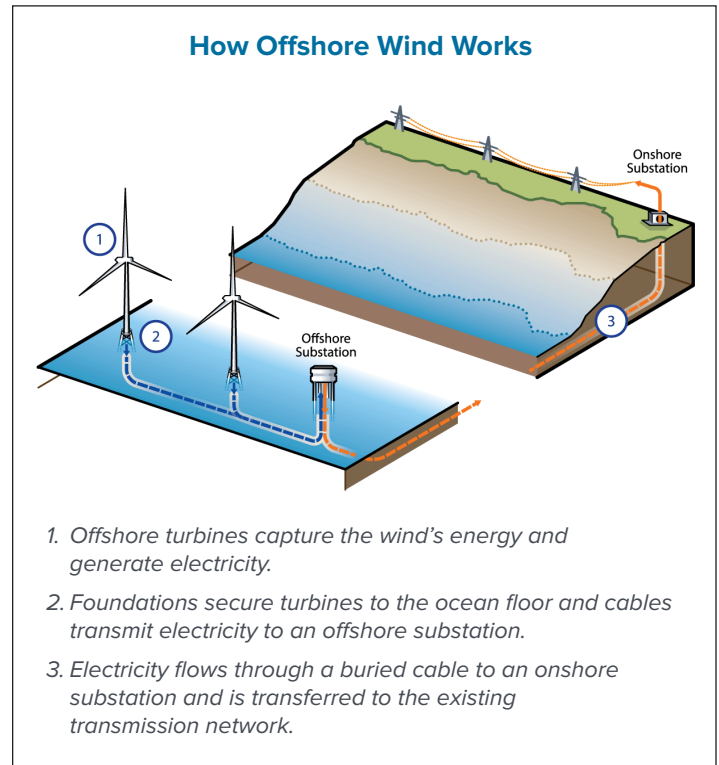
NYSDERA has contracted two offshore wind projects to bring clean power to the State’s electricity grid. The two projects – Empire Wind (Equinor US Holdings, Inc.) and Sunrise Wind (Sunrise Wind LLC, a joint venture of Ørsted A/S and Eversource Energy) – total 1,696 megawatts, enough to power more than 1 million New York homes. This is the single largest renewable energy procurement by a state in U.S. history, and with future procurements, puts New York on a path to carbon neutrality through a globally unprecedented ramp up of renewable energy. Previously, the Long Island Power Authority awarded a contract for the 130 megawatt South Fork Wind Farm, expected to enter commercial operation in 2022.

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 the Empire Wind and Sunrise Wind projects benefit all New Yorkers?

In contracting offshore wind on behalf of the State, NYSDERA has entered into competitively procured 25-year Offshore Wind Renewable Energy Certificate (OREC) contracts with its first projects: Empire Wind and Sunrise Wind. 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.

These two projects, both expected to be operational in the mid-2020s, will bring a combined economic impact of \$3.2 billion to upstate, downstate, and Long Island, and will support more than 1,600 jobs in development, manufacturing, installation, and operations and maintenance, directly offering well-paying careers with average salaries of approximately \$100,000 per



year. The two projects are anticipated to yield significant new investments in port infrastructure and supply chain opportunities at facilities in multiple regions of the State, including the Capital Region, Brooklyn, Staten Island, and Long Island.

The average bill impact for residential customers statewide will be less than a dollar per month – approximately 73 cents. The OREC prices are approximately 40 percent less than expected and are in line with recent offshore wind procurement results from other regional states.

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. The Empire Wind and Sunrise Wind contracts include important provisions for wage and labor agreements by offshore wind developers 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 also taking new steps to support workforce development in partnership with the private sector, including establishing a New York State Advisory Council on Offshore Wind Economic and Workforce Development, a new \$20 million Offshore Wind Training Institute (OWTI) and a \$3 million Community and Workforce Benefits Fund (CWB Fund) 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. 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 required that project developers submit and evolve Environmental Mitigation Plans to formalize adaptive management through discussions with environmental stakeholders.

Will fishing and shipping continue around wind farms?

New York State and the federal government do not anticipate imposing any restrictions on fishing among or around the wind turbines, which will likely be located nearly a mile apart. New York is committed to working with commercial and recreational fishers to understand the areas important for fishing and identify strategies for turbine configurations and spacing to allow for fishing access. NYSERDA required 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.

Safe navigation is vital to preserve the significant shipping activity that occurs off New York's coast. The State conducted studies and continuously consults with the shipping industry

and related stakeholders to understand their operational requirements and concerns and ensure impacts to shipping are minimized. Wind farm developers will be required to perform a separate navigation risk assessment in consultation with the United States Coast Guard. Additionally, the turbine bases will be lit (but not noticeable from the shoreline) so they are visible to mariners and marked on navigation charts, similar to 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 ft long), major components must be delivered to a project by boat and rely heavily on port infrastructure. In addition to the port investments by the Empire Wind and Sunrise Wind projects, Governor Andrew M. Cuomo announced in the 2020 State of the State address that the State is initiating a competitive process to award \$200 million in public investments in port infrastructure improvements to unlock private sector capital and capture long-term economic benefits for New Yorkers. These investments will reinforce New York's position as the hub of the burgeoning U.S. offshore wind industry.

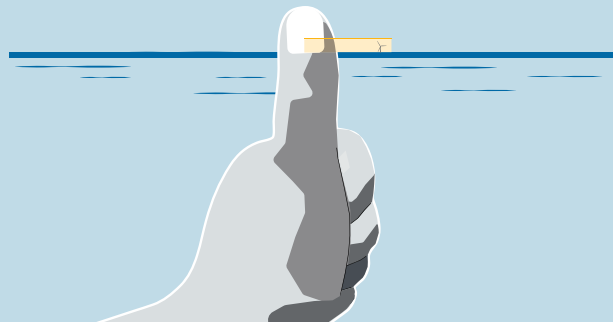
What happens at the end of a turbine's 25-year life span?

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 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.



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