

OFFSHORE WIND ENERGY PROJECTS IN NEW YORK STATE



Wind is a powerful and abundant resource that can provide energy without burning fossil fuel or emitting greenhouse gases. Energy produced from it is clean, cost effective, sustainable and enables U.S. industry growth and U.S. competitiveness. Wind diversifies the national energy portfolio, has low operating costs and is one of the fastest-growing energy sources in the world.

For centuries, sailing vessels and windmills have been turning the wind's energy into mechanical energy to push ships, pump water and grind grain. Today's advanced wind turbines convert wind energy directly into electricity, which can be moved instantaneously to where it is needed.

A single small wind turbine can generate enough clean electricity for local use. By connecting several large turbines to an electric power grid, you have a wind farm; a wind energy system that generates significant amounts of pollution-free, renewable electric power that can be used anywhere that power lines can reach.

The American Wind Energy Association ranks New York eleventh in the nation for installed wind generation capacity. As of the Spring of 2014, twenty wind energy projects are operating with a rated capacity of a little more than 1,812 MW, approximately 2.6 percent of all the electric power available from generation facilities in New York and enough to power more than 500,000 homes. In addition, two wind power projects are under construction in New York, and one is under active review. This wind energy development is critical in meeting New York's renewable energy goals.

Today in New York, wind power makes a small but significant contribution to meeting electric power needs. New York is the 15th windiest state in the nation. Usable wind sites are found in most parts of the state. According to the National Renewable Energy Laboratory, New York's wind resource has the potential to meet more than half of the state's current electricity needs.

These days, New York is the leading state for renewable energy. In fact, it wants to be able to depend solely on renewable energy by 2050. To achieve this goal, the state is looking to rely 50% on renewable energy. There are currently 123 New York renewable energy incentives and 28 local wind energy ordinances.

In July of 2019, New York State awarded Norwegian firm Equinor and a joint venture between Danish company Orsted and American company Eversource with two offshore wind contracts with a combined capacity of almost 1,700 megawatts. Both projects are expected to begin their operations in 2024.

Equinor's 816 MW Empire Wind facility will be comprised of between 60 to 80 wind turbines and will cover an area of 80,000 acres. It will be able to power more than 500,000 homes.

The Sunrise Wind project, which is a 50-50 joint venture between Orsted and Eversource, will have a capacity of 880 MW and will be built 30 miles east of Long Island's Montauk Point.

These projects came at a time when the state is stepping up its commitment to renewable energy. Governor Andrew Cuomo signed into law the Climate Leadership and Community Protection Act, the

country's most ambitious climate target. The law sets a target of 70% of the state's electricity to be powered by renewables by 2030 and to have 100% carbon-free electricity by 2040. Additionally, it calls for greenhouse gas emissions to be cut 85 percent by 2050.

By outsourcing two large offshore wind projects, New York is one step closer to its Fossil Free objective. The successful implementation of these large offshore projects is a positive step for the United States, as there was a lot of local opposition due to the fact that start-up costs are very high and because the maritime landscape is impacted.

Compared to other projects, offshore ones are more efficient because wind on the sea is stronger than it is on land. At present time, approximately 7% of all energy that is consumed in a year in the US is wind energy; this number has risen significantly, as it was only 2% in 2010.

The offshore wind industry in the United States is still in its early stages of development. The country's first offshore wind farm, the five turbine, 30 MW Block Island Wind Farm, only began commercial operations in late 2016. In comparison, Europe is home to 18,499 MW of installed offshore wind capacity, according to WindEurope.

There are many organizations with offices in New York that are supporting these initiatives. They include the 25x'25 Alliance, The Alliance for Clean Energy New York, New York Offshore Wind Alliance, the New York State Energy Research and Development Authority and the Clean Energy Group.

By implementing these two projects, New York will be one of the leading states for offshore wind energy. They will be operational within 5 years and will be able to generate 1.7 GW of electricity, or 20% of the offshore wind energy target set by Governor Andrew Cuomo.

Sources:

Advantages and Challenges of Wind Energy-<u>https://www.energy.gov/eere/wind/advantages-and-</u> challenges-wind-energy

Nation's Largest Offshore Wind Farm Will Be Built Off Long Island-

https://www.nytimes.com/2017/01/25/business/energy-environment/long-island-power-authorityoffshore-wind.html

New York Awards Offshore Wind Contracts in Bid to Reduce Emissions-

https://www.nytimes.com/2019/07/18/business/energy-environment/offshore-wind-farm-newyork.html?searchResultPosition=3

New York Gives Green Light For Two Huge Offshore Wind Projects in Waters Off Long Islandhttps://www.cnbc.com/2019/07/19/new-york-gives-green-light-for-two-huge-offshore-wind-projects.html Wind Energy in New York-<u>https://windexchange.energy.gov/states/ny#policies</u> Wind Power-<u>https://www.dec.ny.gov/energy/40966.html</u>