Great Lakes Offshore Wind and New York's Clean Energy Economy

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Overview

NEW YORK IS ACTIVELY TRANSITIONING TO A CLEAN ENERGY ECONOMY AND OFFSHORE WIND WILL PLAY A CRITICAL ROLE IN REACHING THE STATE'S AMBITIOUS GOALS.

In 2019, New York passed the Climate Leadership and Community Protection Act (CLCPA), which requires the development of 9,000 MW (megawatts) of offshore wind by 2035 (enough energy to power six million homes).[1] To help reach this goal, on July 21, 2020, New York announced the nation's largest solicitation for offshore wind seeking an additional 2,500 MW of offshore wind projects.[2] This solicitation, in addition to the over 1,800 MW of offshore wind currently under development, has the potential to bring the State halfway towards its CLCPA goal and power nearly 3 million homes. New York is actively developing offshore wind downstate; however, **the Great Lakes remain an untapped wind resource that has the potential to be a substantial economic driver for the Great Lakes region and the State**. New York State is now considering the potential of including Great Lakes offshore wind to meet clean energy mandates.

Job Creation

Wind power generation provides the third largest share of employment in the electric power generation sector.[3] In 2018, the U.S. wind sector employed more than 114,000 workers[4]. According to the U.S.

New York Offshore Wind Projects

- Empire Wind: 816 MW, expected commercial operation in 2024, located 14 miles from Long Island's Jones Beach State Park.
- Sunrise Wind: 880 MW, expected commercial operation in 2024, located 30 miles off the East Coast of Long Island.
- LIPA's South Fork Wind Farm: 130 MW, operations expected to begin in 2022.
- The Great Lakes contain 1/5 of the nation's offshore wind potential, yet no projects are planned for NY's Great Lakes to date.

Department of Energy, *Wind Vision Report*, the U.S. wind sector has the potential to support more than 600,000 jobs in manufacturing, installation, maintenance, and supporting services by 2050.[5] Land-based wind already supports more than 3,000 jobs in New York,[6] many of which are Upstate. Scaling up offshore wind has significant potential for job creation across the nation and in New York. The development, construction, and operation of 9,000 MW of offshore wind by 2035, is expected to create more than 10,000 jobs in manufacturing, installation, and operation of offshore wind facilities.[7] A recent study by Wood McKenzie found that continued growth of offshore wind could bring 38,000 jobs to New York State.[8] Developing offshore wind in the Great Lakes would ensure a portion of these jobs comes to Western New York and Great Lakes communities. Many offshore wind jobs are in operations and maintenance, providing lasting career opportunities for New Yorkers as the average offshore wind facility life span is at least 25 years.

The Great Lakes region could significantly benefit from the development of offshore wind, creating good-paying green jobs and bolstering the local economy. Building an offshore wind farm requires 74 different occupations, including electricians, welders, ironworkers, millwrights, carpenters, engineers, concrete finishers, scientists, and vessel operators, according to the New York-based Workforce Development Institute.[9] According to the National Renewable Energy Laboratory (NREL), jobs supported by offshore wind have average annual earnings of $140,000 with supply chain jobs having estimated annual income of $70,000.[10] In addition to direct jobs, offshore wind farms also create a number of "induced jobs" due to increased business at local restaurants, hotels, retail, and other local establishments. Many local entities will benefit from the increased economic activity and spending in the region.

Local Economic Impact of Offshore Wind

Offshore wind in the Great Lakes has the potential to support significant economic activity in a variety of ways. Offshore wind farms can provide financial support to the local economy in the form of taxes, ranging from sales taxes to income taxes and more. New York wind projects pay $47 million in state and local taxes annually.[11] The development, construction, and operation of the proposed 800-MW Vineyard Wind project (off Massachusetts) is projected to generate between $14.7 million and $17.0 million in state and local taxes annually.[12] A small offshore wind farm has the potential to generate significant local tax revenue for the Great Lakes region. These payments provide a net benefit to the community as the offshore wind projects

Jobs Supported by Offshore Wind

- Project developers
- Field engineers
- Environmental managers and consultants
- Legal and permitting support
- Community outreach
- Document control
- Administrative and office support
- Numerous construction-related positions in the building trades; laborers, carpenters, iron workers, concrete and paving, operating engineers, and electricians
- Transportation managers, logistics, escort and truck drivers
- Contract and sub-contract managers
- Project control engineers
- Quality assurance and control technicians
- Safety technicians
- Jobs in marine, port, and vessel-related industries
- Project managers
- Project coordinators
- Production managers
- Wind turbine technicians
- Wind turbine maintenance

make few if any demands on local government services while providing additional revenue for local school districts, fire, police, and other municipal services. For every $1 spent building offshore wind, $1.72 would be generated in the state's economy.[13]

Community Benefit Agreements (CBA) are often made between offshore wind developers and municipalities, however local stakeholders should have a voice. A CBA is an agreement that the wind developer will provide funding for specific projects that provide social and environmental benefits to the local community. Examples include fixing local infrastructure, enhancing fishing spots, ensuring the developer uses local labor, or investing directly in enhancements to the local community. In 2015, Vineyard Wind signed the nation's first federally recognized offshore wind CBA. In addition to economic and job benefits of the project remaining local throughout the development, the project also committed $15 million to initiatives focused on making Massachusetts a hub for the offshore wind industry. This includes investments to upgrade and create facilities and infrastructure necessary for developing offshore wind supply chains, recruiting and training local residents for offshore wind careers in the state, and research and development of new technologies, methods, and systems to protect marine mammals potentially affected by offshore wind development.[14]

Over 500 manufacturing facilities in the U.S. make products for the wind industry, 12 of which are in New York.[15] With Western New York's strong manufacturing base and history, there is potential for the manufacturing of turbine parts such as blades and towers, or the raw materials such as steel and fiberglass, to be produced locally.

Compared to rural land-based wind farms, the interconnection distance from offshore wind farms to urban electricity grids is relatively short. By taking advantage of the short distance, offshore wind can lower transmission congestion and losses in Western New York and the Great Lakes region. This would result in energy cost savings for consumers and reduce electric prices to utilities.

Lake Erie and Lake Ontario are vital to both the local and State economy. Tourism, recreation, and fishing on New York's Great Lakes are billion-dollar industries that rely on a healthy environment. Offshore wind reduces air and water pollution and the region's dependence on polluting sources of energy, thus benefitting these critical industries.[16] Studies show no decrease in the number of tourists after the construction of offshore wind farms.[17] Offshore wind sites in Europe have already capitalized on using wind farms as a tourist attraction by creating information centers with exhibitions, lectures, and tours of the sites.[18] Additionally, research done by the University of Rhode Island found that

tourism increased after the construction of the nation's first offshore wind farm off Block Island.[19] The Block Island Ferry provides tours of the offshore wind farm.

New York's Great Lakes wind resource, if harnessed, has the potential to reduce dependence on out-of-state and polluting sources of energy, and reduce our reliance on expensive, non-renewable resources like oil and natural gas. Once a wind farm is constructed, wind is essentially a free resource, not subject to the price fluctuations of fossil fuels. Coastal states have among the highest electricity prices in the nation; using more wind power to generate electricity helps reduce the overall cost of electricity in New York State while generating tax revenue.

A dramatic increase in investments in offshore wind projects has occurred globally throughout the last few years. Increased investments and improving technology are rapidly reducing the costs of offshore wind construction. New York can develop cost-effective, reliable renewable energy off the shores of the Great Lakes.

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[1] *New York's Climate Leadership and Community Protection Act*, www.climate.ny.gov
[2] *New York's Climate Leadership and Community Protection Act,* www.climate.ny.gov "Governor Cuomo Announces Largest Combined Solicitations for Renewable Energy Ever Issued in the U.S. to Combat Climate Change." 21 July 2020, www.governor.ny.gov/news/governor-cuomo-announces-largest-combined-solicitations-renewable-energy-ever-issued-us-combat.
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[4]American Wind Energy Association, April 2019. *U.S. Wind Industry Annual Market Report, Year Ending 2018.*
[5] U.S. Department of Energy, *Wind Vision: A new Era for Wind Power in the United States* https://www.energy.gov/sites/prod/files/WindVision_Report_final.pdf.
[6] American Wind Energy Association, *Wind Energy in New York*. www.awea.org/Awea/media/Resources/StateFactSheets/New-York.pdf.
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