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## Offshore Wind Marshalling and Manufacturing at the New Jersey Wind Port and the Paulsboro Marine Terminal

The recent growth of the offshore wind industry is creating a once-in-a-generation jobs and investment boom. The U.S. offshore wind industry is expected to garner more than \$100 billion of new investment and create up to 83,000 jobs by 2030.

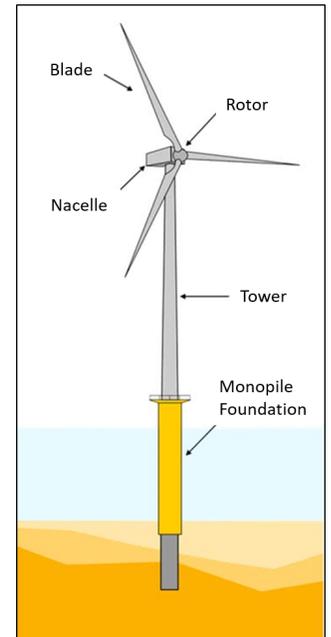
New Jersey has a critical window of opportunity to be at the center of this growth. Through strategic port investment, New Jersey can become a national leader in the parts of the offshore wind supply chain, such as turbine manufacturing, that generate the greatest economic return.

The New Jersey Wind Port (NJWP) and Paulsboro Marine Terminal (Paulsboro) are two strategic investments that will play a vital role in achieving this goal and positioning New Jersey as the nation's foremost offshore wind industry hub.

### Distinct but Mutually Reinforcing Projects

The EEW monopile manufacturing facility at the existing Paulsboro Marine Terminal (Paulsboro) and the forthcoming NJWP are distinct but mutually reinforcing assets that will attract and localize the offshore wind industry in New Jersey.

The projects serve different but related needs within the U.S. offshore wind industry. The manufacturing facility at Paulsboro will support monopile foundation for offshore wind turbines. Farther downriver, the NJWP is uniquely positioned on the East Coast to become a "hub-style" port for offshore wind turbine component marshalling and manufacturing, which includes the making, staging, assembly, and transport of towers, nacelles, rotors, and blades to the offshore wind farm sites. Together, these ports will make New Jersey a one-stop shop for U.S. offshore wind supply chain.



Source: European Wind Energy Association

### New Jersey Wind Port

Because of its expansive 150+ acre footprint, lack of height restrictions, and easy access to the Atlantic Ocean's wind farm lease areas, the NJWP will be one of a select few ports on the East Coast that can house offshore wind turbine marshalling and manufacturing.

A key component of offshore wind turbine marshalling is the vertical assembly of steel turbine tower sections into complete towers. The resulting structures are lifted directly onto a specialty installation vessel and transported vertically along with other turbine components to be installed at an offshore wind farm. These towers and turbine components are hundreds of feet tall and cannot fit under bridges, powerlines, and other naturally-occurring barriers that would impose height restrictions.

In addition, primary offshore wind turbine components – such as blades and nacelles – are extremely large and heavy. They cannot be transported over land, and there are significant logistical costs to loading them on and off barges for transport by sea. Manufacturing, final assembly, and testing at facilities that are co-located with a marshalling port provide significant logistical and economic advantages for offshore wind companies and bring hundreds of good jobs and millions of dollars in capital investment to the communities that host them.



New Jersey Wind Port, Salem County, NJ

No other port in New Jersey is able to support the marshalling and manufacturing operations that will take place at the NJWP and there are currently no equivalent sites or ports in New York, Delaware, or Maryland. This makes the NJWP an attractive proposition for global wind developers and manufacturers that are currently deciding where to direct their U.S. investments.

### Paulsboro Marine Terminal

Paulsboro's location is "bridge-constrained" by both the Commodore Barry Bridge and the Delaware Memorial Bridge, which means it is not suitable for the assembly of large, vertically shipped components that will take place at the NJWP. However, Paulsboro's wharf infrastructure and the large industrial workforce near the port mean it is ideally placed to support manufacturing of heavy-steel components that can be transported horizontally via barge.

One of the world's largest monopile manufacturers, EEW, is developing its first U.S.-based monopile fabrication facility at Paulsboro. This is the single largest offshore wind manufacturing investment in the U.S. to date. EEW will break ground on the monopile fabrication in 2021 and begin fabrication in 2023.



Forthcoming EEW Monopile Manufacturing Facility, Paulsboro, NJ

Source: New Jersey Governor's Office

Monopile fabrication is an ideal activity for Paulsboro because finished monopiles can be transported horizontally and directly out to an offshore wind farm – meaning monopile manufacturers are not limited by bridge restrictions. The freedom to manufacture farther upriver means that monopile manufacturers are unlikely tenants for marshalling ports, such as the planned New Jersey Wind Port in Lower Alloways Creek. This creates an opportunity for Paulsboro to support and benefit from investments in projects that the NJWP attracts.

### Harmonizing Paulsboro and NJWP

The State of New Jersey is rapidly emerging as the center of the offshore wind supply chain in the Mid-Atlantic; building on its location, skilled workforce and sizeable offshore wind project pipeline. When major component factories are built in our state and in our region, they encourage their supply chain partners to localize with them. They also invest in developing new relationships with locally owned businesses, educational institutions and technical schools.

EEW's investment in monopiles fabrication at Paulsboro is the boldest manufacturing investment in the United States to date and has further drawn the attention of supply chain companies to New Jersey. The NJWP will further turbocharge this level of interest and investment activity, anchoring a new, long-term and sustainable industrial hub in Southern Jersey, with flow through jobs and investment throughout the state.