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## THE NEW WIND INDUSTRY: AN EMERGING MARINE MARKET

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*This is Part I of a two-part article on the nascent offshore wind industry and how insurance will apply. Part I covers the equipment and current status of the offshore wind industry, and Part II covers how insurance will apply.*

If you think wind energy is coming, you're wrong. Wind energy is already here, and it's here to stay.

The nascent offshore wind industry off the East Coast has [extensive plans](#) that will forever change the marine industry. The scope of the projects currently on the books spans from Maine to South Carolina, the Gulf Coast to the West Coast, and includes 5,600 federal leases off the East Coast alone. Although only 11 prototypes are built, estimates are that by 2025, there will be 1,200 wind turbines spinning away in the Atlantic.

Currently, the focus of all domestic wind projects is the East Coast. The supply of electricity on the East Coast is decreasing for several reasons, the biggest being the elimination of coal and black oil power plants and the rejection of natural gas and natural gas pipelines.

The construction of large data centers for Microsoft, Google, and Apple has also enhanced the urgency for clean electricity. These installations will require vast amounts of power (in the 8-gigawatt range) that is currently unavailable. Part of the solution to that new demand is wind energy.

So far, the 11 wind turbines exist as two pilot projects. A five-turbine project called the Block Island Wind Farm is located off Rhode Island, and a six-turbine Coastal Offshore Wind Project is located off Virginia Beach. These prototype installations are providing much-needed information on the impacts that wind turbines and wind farms together will have on fisheries, local economies, navigation, recreation, and a host of other issues like

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electromagnetic fields generated from undersea cables and cultural issues around Native American interests.

Installing these prototypes is not a ‘damn the torpedoes’ strategy to managing the impacts of wind turbines and farms, but a much more measured approach that anticipates and reduces impacts from unforeseen consequences.

However, the demand for clean energy from wind turbines is outpacing this measured approach. New Jersey recently announced a new goal of 11 gigawatts of power generated by wind turbines by 2040, a 50% increase from the previous target of 7.5 gigawatts. New York has a target of 9 gigawatts by 2040.

So far, the Bureau of Ocean Energy Management (BOEM), the federal agency tasked with offshore wind development, has approved two commercial-scale wind projects. The South Fork Wind Farm is 35 miles east of Montauk and 19 miles southeast of Block Island. This [12-turbine project](#) began construction in early 2022 and is expected to be completed sometime in 2023.

The first commercial wind farm, approved by BOEM last May, is [Vineyard Wind](#), located 12 miles south of Martha’s Vineyard. That 62-turbine project was estimated to be complete by 2023; however, supply chain issues have significantly impacted both projects, pushing out estimated completion dates almost an entire year.

BOEM has almost a [dozen other projects](#) in the approval stage that will span from Maine to North Carolina, and estimates indicate that if the BOEM approves all these projects, there very well could be over 2,000 wind turbines off the East Coast within the next ten years. In early January 2022, the Biden Administration approved another 480,000 acres for auction in the New York Bight off New York and New Jersey. The total to date for offshore leases from the federal government under the auspices of BOEM stands at 5,600.

In addition to that staggering number, BOEM, and the Biden Administration are looking at leases off Delaware, Maryland, Virginia, and North Carolina, known as the Central Atlantic Planning Area.

BOEM held several meetings on the Gulf and West Coasts to invite public comment about the potential locations for wind farms and their impacts on local communities and environments. In early December, BOEM inked five leases off northern California for a hefty \$757.1 million.

## THE MARINE INDUSTRY RESPONSE

At first, the marine industry responded to this growing prominence of the offshore wind industry with conventional equipment and current technology, like offshore supply vessels, tugs, and barges. However, as momentum built for the offshore wind industry, and with support from the federal government regarding subsidies, the marine industry reacted as it always does—with new designs and brand-new technology for vessels.

The offshore wind industry, as seen from the marine perspective, will require whole new vessel designs for specific tasks. New classes of vessels were designed and are currently under construction at shipyards up and down the Atlantic coast. One of these new classes is the Crew Transfer Vessel (or CTV).

Many CTVs will be purposed to support the construction of the wind turbines. One standard design is a 75 to 100-foot catamaran design that can transfer 24 people from the vessel to construction platforms.

Another mission for the CTV will be to provide maintenance to the turbines once installed. Imagine transferring a man from a heaving deck to a turbine mast in the Atlantic in November—almost impossible and not without significant risk. New and old technology come together to meet this challenge through dynamic positioning and articulated

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arms that compensate for vessel motion and keep the platform or bucket stable enough to allow personnel to transfer to the turbine mast.

Another purpose-built vessel, [designed by Ulstein](#), is the innovative ULSTEIN HX 122. The HX 122 incorporates the patented Ulstein X-Bow and an ultra-high-capacity crane capable of loads up to 7,800 tons. This special

purpose 754 x 202-foot turbine installation vessel sports a 107,600 square foot work deck and can accommodate 180 people.

These new designs incorporate all the latest green energy technology available to marine applications. Soon enough, we'll be able to enjoy clean energy supplied by wind turbines supported by new green, efficient support vessels.

Stay tuned for Part II, a discussion of how insurance coverage will apply to this new marine industry.

## References and Resources

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