Offshore Wind In Maine

Offshore wind energy is clean, renewable, environmentally responsible, and within Maine's reach.

Why Offshore Wind?

80% of U.S. electricity demands are located in coastal states, and the total U.S. offshore wind energy potential is more than twice what the entire country currently uses. Nearly 80% of the U.S. offshore wind resource is located in deepwater.

Why Maine?

In Maine, offshore wind energy represents our largest untapped natural energy resource, with more than 156 GW (1 gigawatt =1,000 megawatts) of potential energy waiting to be harnessed off the coast of Maine. The Gulf of Maine boasts a higher quality offshore wind resource than most parts of the U.S. Mainers currently use 2.4 GW (2,400 megawatts) of electricity each year, however, the Gulf of Maine is located very close to New England populations centers with high electrical demand.

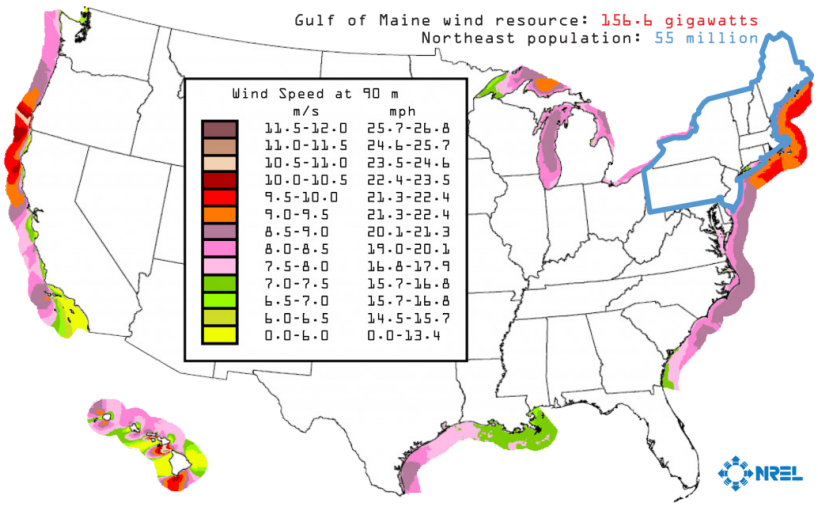
Maine has the deepest waters near its shores, approximately 200 feet deep at 3 nautical miles, and 89% of Maine's 156 GW offshore wind resource is in deep waters. The state also offers extensive maritime industry infrastructure and proximity to one of the largest energy markets in the country. Maine is an ideal state to lead deepwater offshore wind development.

For more than 10 years, UMaine has led development of the patented VolturnUS floating concrete hull technology that can support wind turbines in water depths of 150 feet or more, and has the potential to significantly reduce the cost of offshore wind.

New England Aqua Ventus I

Maine Aqua Ventus I, GP, LLC, is leading a demonstration project called New England Aqua Ventus I, a 12 MW floating offshore wind pilot project to develop a clean, renewable energy source off Maine's shores. Partners include Emera Inc., Cianbro Corporation, and the University of Maine.

This demonstration project will deploy two 6 MW turbines on VolturnUS, the floating concrete semi-submersible hull designed by UMaine, south of Monhegan Island, off the coast of Maine. Each floating hull/turbine is held in position in the ocean by three marine mooring lines securely anchored to the seabed, with the electrical generation connected by subsea cable to the Maine power grid on shore.



The Gulf of Maine is home to more than 156 GW of energy waiting to be harnessed and is located close to New England population centers.

UMaine's VolturnUS 1:8 was the first grid-connected offshore wind turbine in the Americas. It was deployed in 2013.

When will the project happen?

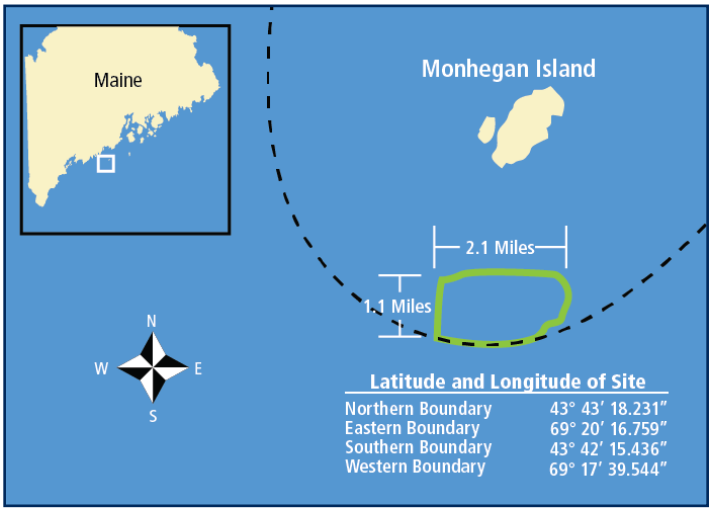
In May 2016, Maine Aqua Ventus was selected by the U.S. Department of Energy to receive $39.9 million in construction funding for New England Aqua Ventus I. This demonstration project will likely be the first full-scale floating wind project in the Americas. Fabrication of the floating turbine platform will begin in 2018 and deployment is currently planned for 2019.

What're the project's goals?

- Demonstrate UMaine's VolturnUS at full scale, allowing floating farms to be built out-of-sight across the U.S. and the world in the 2020s and beyond
- Work with local contractors and manufacturers to perfect construction of the floating concrete hull and generate local jobs and economic benefit
- Create and keep Maine jobs in Maine
- Provide low-cost, clean, renewable energy now and in the future that competes favorably with other forms of electricity generation without subsidies

How was the location off of Monhegan Island chosen?

In 2009, the Maine Department of Conservation (DOC) designated the site off Mohegan Island as one of three Wind Energy Test Areas off the Maine coast. These sites were chosen through extensive analysis and outreach efforts by State officials, with input from local/federal officials, fishermen, and residents, to examine the Maine coast for the best possible test site with least amount of impact. The DOC also designated Mohegan as the UMaine Deepwater Offshore Wind Test Site to support ongoing research and development efforts.



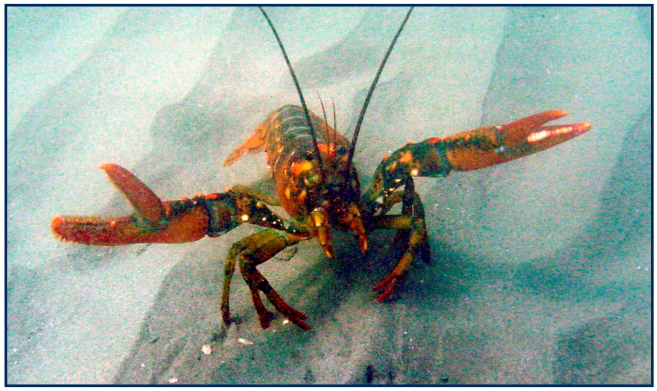
The UMaine Deepwater Offshore Wind Test Site off of Monhegan Island was selected by the Maine Department of Conversation after extensive analysis and community outreach.

Since that time, UMaine has continued its outreach with Mohegan and Midcoast Maine and other potentially affected industry and environmental stakeholders. With dozens of meetings, presentations, video conferences, and telephone conferences, as well as more than two years of weekly or monthly calls with the Monhegan Energy Task Force (METF) since its inception, UMaine has demonstrated its ongoing commitment to Monhegan communications.

In July 2016, Monhegan Island voted for the Monhegan Plantation to engage in negotiations with Maine Aqua Ventus on a community benefit package, a significant milestone and a requirement of the project's power purchase contract term sheet with the Maine Public Utilities Commission.

Will there be any environmental impact?

New England Aqua Ventus I is a demonstration project that requires extensive and ongoing collaboration for permitting with state agencies including Maine Department of Environmental Protection and Maine Department of Marine Resources as well as U.S. Fish and Wildlife, NOAA, U.S. Army Corps of Engineers, U.S. Coast Guard, and others. Previously completed ecological studies provide a comprehensive baseline. Additional studies (including sound and visual) will be conducted following final turbine design. Ongoing ecological monitoring will be performed during operation for research and compliance.



Throughout the project, researchers will be monitoring wildlife above and below the water's surface.

What comes after New England Aqua Ventus I?

NEAV I is designed to meet the objectives of the Ocean Energy Act and Maine legislation to yield tangible economic benefits for Maine, and to lead to even larger-scale, more cost-effective offshore wind developments in Maine and markets worldwide. Successful demonstration of the technology has the potential to lead to a 500 MW-scale project placed in U.S. federal waters. MAV is committed to not developing a larger scale project within 10 miles of an inhabited island or peninsula along the coast of Maine.

For more information, visit: composites.umaine.edu/offshorewind