

2021 POISED FOR YEAR OF US OFFSHORE WIND

THE HEADWINDS HAVE SUBSIDED. AFTER YEARS OF CAREFUL TACKING, THE US OFFSHORE WIND INDUSTRY LOOKS FORWARD TO SMOOTHER SAILING AHEAD. BY **LAURA NEUMEISTER WRIGHT**, PARTNER, AND **JONATHAN WILCON**, ASSOCIATE, **MORGAN LEWIS & BOCKIUS LLP**.

The timing is ripe for the first US large-scale offshore wind projects to break water on construction in 2021 and 2022, with an accelerated robust pipeline of other projects to follow in their wake.

Since its establishment in 2010 within the US Department of the Interior to oversee all activities related to evaluation, planning and leasing of federal waters for the purpose of energy production, the Bureau of Ocean Energy Management (BOEM) has granted more than a dozen offshore leases on behalf of the federal government for the development of offshore wind projects in federal waters.

These development projects benefit from the experiences their owners gained in the already developed European market, including sometimes sharing those experiences as major companies continue to team up for joint development and ownership. Ørsted is partnered with Eversource Energy for a host of its US offshore projects. Iberdrola Group, through Avangrid Renewables, is partnered with Copenhagen Infrastructure Partners for the Vineyard Wind project. Shell and EDF are co-developing the Atlantic Shores project off the coast of New Jersey.

The Mayflower Wind project, slated for waters between Martha's Vineyard and Nantucket, is owned equally by Shell and Ocean Winds, a partnership of the North American subsidiary of Italy's EDP Renewables and Engie. And BP and Equinor recently announced a strategic joint-venture for offshore projects, including the Beacon and Empire wind projects off the coast of New York.

To-date, in the US, only the 30MW Block Island wind project in state waters off the coast of Rhode Island and Dominion's pilot project in federal waters off the coast of Virginia Beach have successfully navigated the path to operation. A convergence of factors could aid more projects along this path in the near future.

A rising tide lifts all

At 800MW and approximately 15 miles from Martha's Vineyard off the Massachusetts coast, Vineyard Wind is slated to be the first commercial-scale offshore wind project in US. Its success is expected to be a catalyst for the

success of projects that follow. In development since approximately 2015, the project has faced stakeholder, permitting and environmental review obstacles that have almost run it aground.

In 2019, shortly before BOEM was expected to issue the project's Final Environmental Impact Statement (FEIS), BOEM announced it was delaying its decision-making in order to consider the potential cumulative effects of the offshore wind industry beyond the project. The FEIS is a near-final step in the permitting and approval process before the commencement of construction.¹

Vineyard Wind continued the permitting process until December 2020, when the project announced it was withdrawing its Construction and Operation Plan from BOEM for approval in order to engage in a final technical review required by the project's decision to utilise fewer, but larger, turbines. In response, BOEM cancelled its process to produce the updated Environmental Impact Statement.

With BOEM under new leadership after the Biden-Harris inauguration, the review process was revived and on March 8 2021, BOEM issued the project its FEIS, signalling that it is likely to permit the project to proceed with its proposal.

This decision establishes the first successful guide for BOEM's environmental review of a commercial-scale project. BOEM's analysis of its "preferred alternatives" in the FEIS will give other developers insight into the technical, commercial, and legal approach BOEM may take in evaluating the next wave of projects.

BOEM's decision evidences that the planning and development Vineyard Wind undertook, including its approaches to technical, commercial and political challenges, could serve as blueprints for other developers. For example, Vineyard Wind modifying its technology and layout was key to its progress. Without losing any production capacity, the project upsized and reduced its planned number of turbines, permitting a 1x1-nautical mile buffer between each turbine.² The project's optimised layout reduces visual impact and minimises conflicts with commercial fishing boats, which can be instructive to future projects.³

The recent shift in fortunes for Vineyard Wind and for the industry as a whole needs



US Department of the Interior, Washington DC, exterior entrance signage

to be considered with the background of the new US federal administration and its declared support for renewable energy and offshore wind. President Biden’s first-week Executive Order on Tackling the Climate Crisis at Home and Abroad directed federal agencies to pursue setting the goal of net-zero global emissions by 2050.⁴

Building on that directive, on March 29 2021 the US Department of Energy announced it would pursue 30GW of offshore wind by 2030. In inter-agency announcements, this goal will be supported by prioritising development in the New York Bite (an area of shallow water between New York and New Jersey long thought to be prime for offshore wind development) and investing in port infrastructure to support offshore projects. BOEM also announced it will advance preparation of an Environmental Impact Statement for the Ocean Wind project off New Jersey, poising that project to potentially become the third large scale US offshore wind farm after the successes the South Fork project has recently secured.⁵

BOEM director Amanda Lefton, appointed to the role in early February 2021, has been hailed as a major proponent of offshore wind following the key role she played in creating New York State’s expansive offshore wind energy commitment.⁶ In announcing BOEM’s intention to resume review of Vineyard Wind, Lefton stated that “[o]ffshore wind has the potential to help our nation combat climate change, improve resilience through reliable power, and spur economic development to create good-paying jobs.”⁷

While it is yet to be seen if the administration is able to fulfil all of its stated goals for combating climate change, boosting offshore wind may be – and so far, has been – an area where the

administration can make visible, measurable progress independent of Congressional politicking.

IRS on board with ITC

After years of the offshore wind industry lobbying for a separate set of rules to take into account the realities of building these complex projects, the December 2020 US stimulus bill extended the investment tax credit (ITC) eligibility period for offshore wind. Before this extension, projects were facing the loss of credits as the ITC in lieu of PTC was being phased out in two years. The new legislation allows offshore wind projects to retain access to the full 30% ITC for projects that begin construction through to 2025.⁸

Following the stimulus bill, the Department of the Treasury issued favourable guidelines related to the legislation, extending the safe harbour period for up to 10 years from the year in which construction of a project began. This means developers will be presumed to have engaged in “continuous construction” of the project – a requirement for qualifying for the ITC – if the project is placed-in-service within ten years of the start of construction, a timeline that is much more reflective of the time required for completion of offshore wind projects (compared with the traditional four-year safe harbour for onshore wind projects).⁹

This extension and regulatory clarity offers significant relief to projects that have faced uncertainty and delays in permitting and logistical hurdles in the past, provides certainty for developers and financiers, and supports development by requiring less capital from project developers. Further, to some it evidences a clear commitment from the Biden-Harris

administration to encourage and support the growth of US offshore wind.

State support and pricing trends

The ever expanding state-specific renewable portfolio goals, set by state-level statutes or executive orders and many of which have offshore wind-specific mandates, have accelerated the activity in offshore wind procurement. From the US Department of Energy's National Renewable Energy Laboratory (NREL) reporting as of June 2020, below is a sampling of recent stated procurement goals:¹⁰

- New Jersey was the first state to pass offshore wind specific procurement goals in 2010. Its 2018 codified goal is procuring 7,500MW by 2035;
- New York's legislature in 2019 codified an aggressive 9,000MW by 2035 procurement goal for offshore wind with the governor's support;
- In 2019, the Massachusetts Department of Energy Resources increased the prior offshore procurement goal to 3,200MW by 2035;
- Connecticut in 2019 specified an offshore wind target of 2,000MW by 2030;
- Maryland's legislature added in 2019 a 1,200MW procurement goal by 2030 to its existing renewables portfolio standard;
- Virginia passed 2020 legislation to set a 100% renewable energy goal by 2050 and an offshore wind procurement goal of 5,200MW by 2035.

In parallel with the increasing state renewable portfolio goals, energy pricing for US renewable energy has been on a downward trajectory for the past decade or so and offshore wind is no exception.

States use competitive bidding procedures to competitively auction two types of structures: power purchase agreements (PPAs) and offshore wind renewable energy certificates (ORECs). PPAs are standardised long-term contracts for the purchase of power from specific generating projects (as are often used in onshore wind projects). States such as Massachusetts, Rhode Island and Connecticut have mandated utilities to enter into PPAs with offshore wind projects.

ORECs are tradable credits specific to offshore wind projects, where the environmental attributes of one megawatt-hour of electric generation from an offshore wind project are used to comply with a state's offshore wind mandate. New York, New Jersey and Maryland have utilised OREC solicitations. Both structures offer long-term financial stability for a project by using a hedging structure where the buyer (state entity) pays a fixed price for the services delivered by the generator, regardless of the fluctuating market price.¹¹

From the NREL report, below is a selection of pricing for these structures:¹²

- 2010 Block Island Wind Farm's purchase agreement with National Grid had a levelised cost of energy of US\$244/MWh;¹³;
- In 2018, Vineyard Wind's two power purchase agreements at 400MW, of 20 years each,

reflecting levelised prices of US\$74/MWh and US\$65/MWh, respectively;

- In 2018, Revolution Wind's three power purchase agreements reflected levelised prices of US\$98.43/MWh, two PPAs, and US\$99.50/MWh;
- In 2019, New York State Research and Development Authority (NYSERDA) awarded OREC contracts to Empire Wind and Sunrise Wind reflecting a levelised price of US\$83.36/MWh;
- In 2019, Mayflower Wind's 804-MW proposal received from Massachusetts a PPA award reflecting a levelised price of US\$58.47/MWh.

In addition to energy pricing, construction costs associated with renewable energy projects have consistently fallen over the past few years.¹⁴ Along with the blueprint mentioned above as the initial offshore projects reach advanced development stages, it is expected that development, permitting, supply and construction costs will also decrease as efficiencies are achieved.

The bounty of local benefits tied to offshore wind is also driving states' procurement decisions. Offshore wind projects will bring to their local economies both construction jobs and long-term operation and maintenance jobs directly tied to construction and operation of the projects, along with increased jobs and revenue from related collateral industries such as transportation, ports, manufacturing and general services. For example, Atlantic Shores recently announced a first-of-its-kind partnership with six local New Jersey unions to provide training and future employment.¹⁵ Ørsted recently announced the completion of the first phase of upgrades to create an offshore wind staging centre in Maryland, with more to follow.¹⁶

And there is the need for manufacture of supporting equipment: for example, Dominion Energy is in the process of completing a Jones Act-compliant installation vessel it will use for its Coastal Virginia Offshore Wind project off the coast of Virginia, before leasing the vessel to other developers.¹⁷

Wood Mackenzie estimates that between 2025 and 2035, based on the BOEM auctions in 2021 and 2022, offshore wind will create an average of approximately 80,000 jobs annually during the development and construction phase and cumulative state tax revenue of approximately US\$2.2bn in such period, while long-term operations and maintenance during that period will create approximately 20,500 long-term O&M jobs annually, and annual state tax revenues of US\$1.2bn.¹⁸

Conclusion

It would be remiss not to acknowledge that many hurdles still exist for the nascent US offshore wind industry: supply chain challenges; lack of Jones Act-compliant shipping vessels; the need for ports equipped with the technical capabilities and experienced labour force to procure, transport, construct and operate offshore turbines and

related equipment; and stakeholder resistance from the fishing industry and coastal residents; essential interconnection infrastructure upgrades to transport high voltage power from inland production areas to the coasts. However, the breakthroughs by Vineyard Wind, federal buy-in for the industry, supportive state actions and positive economic trends all indicate that the tides are turning and massive growth for the US offshore wind industry is on the horizon. ■

Footnotes

- 1 - Government Delays First Big U.S. Offshore Wind Farm. Is a Double Standard at Play? Inside Climate News, August 19 2019. <https://insideclimatenews.org/news/19082019/vineyard-wind-offshore-renewable-energy-delay-boem-environmental-cumulative-review-nepa-massachusetts/>
- 2 - This reduction was made possible by switching to the new 13 MW “Haliade-X” Turbine, which will be the largest turbine in commercial production in the world. Note that competitors Vestas and Siemens-Gamesa have both released plans to produce up to 15MW turbines in the near future.
- 3 - “US Offshore Wind’s Next Step Forward: A Project, A Plan, & A Pathway.” Cleantechnica.com, March 14 2020. <https://cleantechnica.com/2021/03/14/us-offshore-winds-next-step-forward-a-project-a-plan-a-pathway/>
- 4 - “Executive Order on Tackling the Climate Crisis at Home and Abroad.” January 27 2021. <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/>
- 5 - “Fact Sheet: Biden Administration Jumpstarts Offshore Wind Energy Projects to Create Jobs.” March 29 2021. <https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/29/fact-sheet-biden-administration-jumpstarts-offshore-wind-energy-projects-to-create-jobs/>
- 6 - Statement from New York Offshore Wind Alliance Director Joe Martens on the appointment of Amanda Lefton to lead the Bureau of Offshore Energy Management. February 1 2021. https://static1.squarespace.com/static/5c48ae1f4cde7ad15323c2d5/t/6018929d47036c7c0fde53f5/1612223135763/NYOWA_Amanda_Lefton_final.pdf
- 7 - BOEM Statement on Resuming Environmental Review of Vineyard Wind’s Proposed Project. February 3 2021. <https://www.boem.gov/boem-resume-environmental-review-vineyard-winds-proposed-project>
- 8 - “Congress Passes Spending Bill With Solar, Wind Tax Credit Extensions and Energy R&D Package.” Greentech Media, December 22 2020. <https://www.greentechmedia.com/articles/read/solar-and-wind-tax-credit-extensions-energy-rd-package-in-spending-bill-before-congress>
- 9 - IRS Notice 2021-05: Beginning of Construction for Sections 45 and 48; Extension of Continuity Safe Harbor for Offshore Projects and Federal Land Projects (Note that IRS Notice 2020-41 has

- extended the traditional 4-year safe harbour to a 5-year safe harbour for certain projects.)
- 10 - National Renewable Energy Laboratory, Comparing Offshore Wind Energy Procurement and Project Revenue Sources Across U.S. States. June 2020. <https://www.nrel.gov/docs/fy20osti/76079.pdf>
- 11- Note these structures differ from the contract for differences structures used in Europe, which are prohibited in the US
- 12 - See NREL report for full list. Note that these are summary figures and when comparing pricing one needs to review the entire contract, which will detail any price escalations, pricing for capacity revenue, and allocation of tax benefits among other considerations.
- 13 - Levelised pricing refers to the amount a developer needs to recover on a per MWh basis to pay off its initial investment and satisfy its revenue requirements over the term of the contract. Note that Block Island had premium pricing given its status as the first offshore windfarm in the US
- 14 - Average U.S. construction costs for solar and wind generation continue to fall - Today in Energy - U.S. Energy Information Administration (EIA). September 16 2020: <https://www.eia.gov/todayinenergy/detail.php?id=45136>
- 15 - Atlantic Shores Offshore Wind Inks MOU with New Jersey Unions. February 18 2021: <https://www.offshorewind.biz/2021/02/18/atlantic-shores-offshore-wind-inks-mou-with-new-jersey-unions/>.
- 16 - Ørsted Tradepoint Atlantic Achieve Key Milestone in Development of Maryland’s First Offshore Wind Staging Center. Tradepoint Atlantic, March 17 2021: <https://www.tradepointatlantic.com/2021/03/17/orsted-tradepoint-atlantic-achieve-key-milestone-in-development-of-marylands-first-offshore-wind-staging-center/>
- 17 - The Merchant Marine Act of 1920, or Jones Act, requires that the transport of goods between two US points be carried out by ships that are built, owned and operated by the US and US citizens. “Dominion Energy Continues Development of First Jones Act Compliant Offshore Wind Turbine Installation Vessel”. December 16 2020. <https://news.dominionenergy.com/2020-12-16-Dominion-Energy-Continues-Development-of-First-Jones-Act-Compliant-Offshore-Wind-Turbine-Installation-Vessel>
- 18 - Economic Impact Study of New Offshore Wind Lease Auctions by BOEM; Wood-Mackenzie Power & Renewables, August 2020: https://cleanpower.org/wp-content/uploads/2021/02/WM_Economic_Impact_Study_OSW_Lease_Auctions.pdf. In addition to such jobs and tax revenue, Wood Mackenzie also estimates that along with direct investment into the offshore industry, US\$100bn will be invested into the construction industry and US\$42bn into turbine manufacturing and supply chains, solely as a result of the projects awarded leases through the 2020–2022 BOEM lease auctions.