US OFFSHORE WIND CHALLENGES

The US offshore wind energy market, and government and industry support for the same, continues to develop at an impressive pace. By **ERIC POGUE**, **AMANDA ROSENBERG**, **MEREDITH CAMPANALE**, **MARK WILLIAMS**, **PAUL ASTOLFI**, *partners,* **LAUREN BACHTEL**, *counsel, and* **ADDISON PERKINS**, *associate,* **MAYER BROWN**.

The Biden administration has committed to create 30GW of electricity via US offshore wind by 2030, the US Department of Interior is expecting to offer up to seven additional offshore wind lease sales in federal waters by 2035 and the Bureau of Ocean Energy Management (BOEM) has been actively pursuing these policy ambitions – for example, approving the first two commercial-scale offshore wind projects in the US off the coasts of Massachusetts and New York, and holding a massive competitive auction for six lease areas in the New York bight area off the coasts of New York and New Jersey. And, that seems to be just the start of it – the executive branch's agenda resonates from coastal communities to Wall Street.

As momentum for offshore wind energy development accelerates nationwide, the industry continues to confront several fundamental challenges; accordingly, strategies to address capital intensity will be essential.

• *Multi-year development timelines* – Multi-year development timelines are not unusual for European offshore wind projects, or even onshore wind projects located in the US, but the pre-construction process for offshore wind presents distinct considerations. The process itself may take up to eight years. After winning a BOEM commercial lease, developers typically have 12 months to submit a site assessment plan (SAP), describing the activities that the lessee intends to perform in order to assess wind resources and ocean conditions.

Once approved, the site assessment term extends for up to six years. Six months before the site assessment term expires, developers must then submit a construction and operation plan that undergoes a separate review and approval process – taking another two years, approximately. For developers seeking to streamline processes, navigating this procedural framework will be essential to satisfying key milestones and avoiding delays prior to construction.

• *Potential for delays stemming from permitting, litigation and interconnection* – Each phase of development requires certain federal and state authorisations and/or permits from multiple federal and state agencies. The broad scope of the environmental reviews and authorisations poses risks of delay, the imposition of conditions or mitigation measures that require project modifications, and litigation. Opponents may also challenge an offshore wind project throughout its development process. For example, in 2016, opponents unsuccessfully challenged BOEM's issuance of a lease off the coast of New York, alleging various environmental law violations. See Fisheries Survival Fund v Jewell, 2018 US Dist. LEXIS 168532 (DDC 2018). As of March 2022, opponents have already filed four separate complaints

in two jurisdictions challenging BOEM's approval of the Vineyard Wind project and alleging various environmental law violations.

Developers, utilities and investors should expect lengthy interconnection processes when planning their offshore wind projects. In the Northeast, Great Lakes and California markets, independent system operators and regional transmission organisations (ISOs) control interconnection under Federal Energy Regulatory Commission (FERC) requirements. State utility regulators cannot dispense with the interconnection planning, study and cost-allocation requirements that FERC requires. Each offshore wind project, located in the most wind-feasible US coastal waters, must apply for interconnection; undergo feasibility, system impact and facilities studies; and accept cost estimates, long before any interconnection engineering, procurement or construction work can begin. Each study phase lasts months. A project sponsor typically must study all potential landfall and point-of-interconnection options before deciding where to interconnect, because even minor modifications can trigger re-studies.

The physical characteristics of offshore wind interconnection can also delay construction. The interconnection cable must be fabricated and transported to cable-laying ships, reserved months in advance. Placing cables on the sea floor can be slow, considering weather, environmental factors and the ocean's multiple uses. The cable must be pre-sited using hydrographic surveys, and the cable length must match the seabed-floor distance (not the mapping distance) that the cable will travel. A landfall point must be selected for cost, beach-front property can be pricey, and electrical location – a remote landfall point could involve miles of travel to a transmission point, involving further land and equipment costs.

Different locations on an ISO grid produce different and variable prices for energy. ISO capacity prices change with each capacity auction. An offshore generator may need to consider power pricing locational features, landfall cost and availability, environmental and permitting issues, access to high-voltage lines, and associated costs, all before submitting an interconnection application.

As the US offshore wind industry matures, the lengthy interconnection processes and costs may evolve to create efficiencies with respect to processes and cost. For now, developers, utilities and investors should account for these dynamics when planning their offshore wind interconnections.

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• *Uncertainty surrounding offtake arrangements* – Finally, at present, the number of offtake arrangements for US offshore wind projects appears limited and involves in several cases a substantial, and potentially time-consuming, state agency-run application process. Although several east coast states have established incentive programmes and rough timelines for offshore solicitations, the proposed solicitation amounts are currently less than anticipated development capacity. For example, the NY Bight lease areas could result in up to 7,000MW of wind energy, and New York's 2022 offshore solicitation is estimated for 2,000MW to 4,640MW of total offer capacity.

MITIGATING CAPITAL-INTENSITY

Offshore wind projects are capital-intensive. In February 2022, winning bidders in the New York Bight auction paid between US$285m and US$1.1bn per lease, with most of the leases going for US$700m to US$800m. These substantial dollar amounts will become due in April 2022, approximately 45 days after the auction. In addition to the significant lease cost, offshore wind developers must bear the cost of, among other things, developing the SAP, described above, conducting site assessment and characterisation activities, obtaining the necessary permits and authorisations throughout the various phases of development, and eventually constructing, operating and maintaining the offshore wind facilities. Developers will likely consider a variety of financing structures as an alternative to balance sheet financing. Individually and in combination, the models that are emerging as the most viable options in the US market are joint ventures, tax equity and export credit agency (ECA) financing.

• *JV/development financing models* – Given the above-discussed timing considerations, substantial development costs and significant risks associated with offshore wind, the joint venture structure has been very popular among the first wave of US offshore wind projects. In fact, more than half of the US offshore projects under development are owned (or at some point were owned) by multiple companies using a joint venture arrangement.

Joint ventures, which are in the broadest sense a business arrangement between two or more non-affiliated entities to share obligations and risks, are not uncommon with respect to large infrastructure and power projects, especially those employing new technology. For example, joint ventures have been common in the nuclear space between technology suppliers and project developers and have been employed in the electric vehicle space.

In the case of offshore development-stage projects, the advantages of joint venture arrangements are clear. The parties to the joint venture have the advantage of sharing expertise and resources – this includes, staff, offshore wind development expertise, government relations experience, procurement relationships, etc – and mitigating the individual partner's risk and capital outlay. This is even more so applicable to the earliest stages of such projects when financing is needed for BOEM lease payments, design and permitting expenses, etc, and traditional bank financing may be

difficult to place given that such projects are early-stage and in many cases do not yet have offtake arrangements.

- *Tax equity financing* – As with other types of renewable projects, available tax credits will continue to play a major role in the capital stack and financing of such projects. The long construction schedule, high capital costs and complexity of offshore wind projects, however, create some key differences between the tax equity financings of onshore wind and offshore wind projects. Onshore wind projects typically receive production tax credits based on the electricity produced by the project over a ten-year period. The high capital costs of offshore wind projects make the investment tax credit (ITC) the more attractive choice. The ITC is claimed in the year the project is placed in service and is a percentage of the capital costs of the project.

Because ITCs are preferred for offshore wind projects, tax equity investors will be required to invest in offshore wind projects earlier than they would invest in an onshore wind project. When an ITC is claimed, the investor must be a partner in the tax equity partnership before the project is in service. By comparison, an investor in an onshore wind project makes its investment once the project achieves commercial operation. Investors in offshore wind projects claiming the ITC will need to invest at least 20% of their capital before any part of the project is in service, likely once a specified number of turbines are constructed but before any commissioning activities have started.

The high cost of constructing offshore wind projects means that tax equity's portion of the capital stack will be a very large number. While some investors may invest alone, it is likely that many offshore wind deals will be club deals or will be syndicated after closing.

Larger costs also mean higher potential indemnities if something goes wrong. There will be heightened attention paid to the credit support behind the sponsor's indemnity obligations, particularly parent guarantees. Tax insurance is likely to feature in many deals.

Finally, the construction of offshore wind projects involves a large number of contractors. There is not a single contractor that "wraps" the warranties and obligations of the various contractors. Tax equity investors will need to get comfortable that the project has adequate protection.

- *Export credit agency (ECA) financing* – Export finance has been used successfully in the development of offshore wind projects in many jurisdictions, including Taiwan, the United Kingdom and Belgium, and there is significant potential for its use in the development of US offshore wind projects as well. Given the nascent state of the domestic offshore wind supply chain, developers of US offshore wind projects largely will be looking abroad for the components and technical expertise needed to construct and operate these projects. Additionally, most of the sponsors developing these projects are non-US entities. These elements would mean that there is significant eligible content for ECAs to support, and indeed there is much interest in the US offshore wind sector from ECAs and export finance banks.

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However, it remains to be seen whether export finance will play a role in the development of the US offshore wind sector to the extent seen in other jurisdictions. First, as described above, developers in the US offshore wind sector are likely to utilise tax equity financing as a means of monetising the generous tax credits available for offshore wind projects.

Slotting into tax equity structures is challenging for ECAs, which are accustomed to a classic limited recourse project finance structure with debt at the project company level. ECAs generally would not accept the kind of structural subordination that would be required if providing back-leveraged debt, customarily would expect asset level security and would be concerned by any limitations on the enforcement of their security (such as the forbearance agreements standard for construction lenders).

Incorporating ECA finance into a tax equity structure will require significant flexibility on the ECAs' part and developers that are willing to invest in the costs (both in terms of advisers' fees and timing) of getting the ECAs comfortable with the structure.

Second, there are mixed views as to the need for ECA financing in the sector. It may be that, at least for the initial US projects, developers find that ECA-supported debt is not required given strong interest from the US tax equity market and banks in the construction loan and back-leverage market.

Vineyard Wind had very strong bank interest in the construction debt piece and ultimately achieved spreads for such debt that were very similar to onshore wind projects. Also, ECAs applying the principle of additionality may not see the policy rationale for operating in this space. Going forward, however, as the offshore market becomes more developed and banks become more saturated with exposure to the sector, the terms that such banks will offer may be less favourable, which would seemingly increase the opportunity for ECA financing. Similarly, legislative proposals such as direct pay could reduce the need for tax equity financing, thereby making ECA financing and other forms of debt much more attractive.

CONCLUSION

Developers, sponsors, investors and lenders that navigate the numerous challenges presented by these capital intensive projects will be well positioned to advance this nascent, but exciting, market in the US. ■