Dominion spearheads construction of first US installation vessel for supersize turbines

Jones Act-compliant jack-up being built by developer-led consortium set to enter service in 2023 for lead-off Atlantic mega-projects

Developer Dominion is leading a consortium that will sail out the first US-flagged turbine installation vessel “fully compliant” with the Jones Act for 12MW-plus machines as the utility looks to double its offshore wind commitment to 5.2GW by 2035.

Executives from the Virginian power company said the vessel will enter service in 2023 and be funded by consortium participants, which they did not name, and possibly third parties. The vessel's cost will become clearer once its design parameters are agreed upon and vetted by “experts” in the offshore wind and shipping industries, they said.

At present, Dominion does not have a “number” for its planned percentage ownership but expects “infrastructure style returns” on its investment, Jim Chapman, chief financial officer, said on a conference call. Those have historically been in the high single digits.

Because the vessel will be fully contracted over the long term by multiple major offshore wind developers along the east coast, including Dominion for its US industry-leading 220-turbine, 2.64GW project off Virginia, that “business profile” will attract interest from infrastructure investors and others to potentially co-fund the project, he added.

The 800MW Vineyard Wind offshore wind power project off Massachusetts is anticipated to jump-start large-scale US construction in 2021 as the $2.8bn development moves forward after more than a year of federal permitting delays, followed by almost 5GW of projects – a majority involving Orsted - with contracted off-take through 2024.

The industry, the growth of which over the last three years has surpassed expectations of both President Donald Trump's administration and private consultancies, has an immediate need for a world-class US-flagged installation vessel.

Project developers have been seeking ways to either comply with or work around Section 27 of the Merchant Marine Act of 1920, better known as the Jones Act, a federal law that regulates maritime commerce in the US.

The Jones Act requires goods such as wind turbine components conveyed between two US points be transported on ships that are built, owned and operated by American citizens or permanent residents. One such point in the US is an offshore foundation or pad attached to the outer continental shelf.

This means that European-owned jack-up vessels that the nascent US industry must rely upon for early-stage projects cannot load at east coast ports and then transfer or install cargoes at project sites.
Instead, they must remain offshore and be fed by Jones Act-compliant barges or other equipment – a time-consuming process that will add to the already high cost of installing turbines offshore with European vessels, whose owners can charge higher lease rates in the absence of domestic competition.

Dominion will invest $3.5bn between 2020 and 2024 on offshore wind starting with a two-turbine, 12MW pilot in federal waters east of Virginia Beach whose installation will begin this quarter. The 2.64GW Coastal Virginia Offshore Wind megaproject, being built around ultra-large Siemens Gamesa turbines, will be constructed in three 880MW phases starting in 2024 through 2026 at a cost of $7.8bn.

Subsea survey work is underway for the project's full deployment and Dominion plans to hand in a Construction and Operations Plan (COP) – which scopes out construction, operations and conceptual decommissioning under a commercial wind lease – to federal regulators by the end of this year.

CEO Tom Farrell said the company will submit an initial filing for recovery of costs in 2022 to the Virginia Department of Public Utilities that must weigh if they are "reasonable and prudent" using three tests. The first is that competitive procure and solicitation standards for components are met. Second, the projected levelised cost of energy is reasonable relative to a specific EIA benchmark. Early estimates are $80-90/MWh, which he said compare favorably. Third, project construction begins prior to 2024 or has a plan to enter service by 2028.

Dominion's total offshore wind commitment could increase to $17bn by 2035 if regulators approve its proposal to build another 2.6GW of capacity. Initial plans call for the second array to be in service by 2034. The executives did not say if Dominion's present lease area could support such expansion.

Its ambitions, by far the most of any US utility, are underpinned by the state's Clean Energy Act and Governor Ralph Northam’s earlier executive order on climate change.

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