

Research Note

By MAKE Consulting

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Innovation on the Horizon for Offshore Wind Logistics

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The global offshore wind market is expected to experience tremendous growth over the next five years, driven predominantly by the increase in European Union installations. Offshore wind enjoys strong policy support in the EU, but must make efforts to reduce capital costs in an effort to bring its levelized cost of energy more in-line with traditional fossil fuel generation.

Installation and logistics are a key focus area for cost reduction initiatives in the offshore wind market due to their heightened percentage of total wind farm capital costs versus what is typically seen in the onshore wind space. These costs become an even greater concern as offshore wind development moves farther offshore and to greater operation water depths.

Two key areas of innovation have been within advanced purpose built installation vessel and floating foundation technologies. Our expectations are that advanced installation vessel concepts will have limited uptake due to technology risk and marginal upside versus the latest generation of self-propelled jack-up vessels. However, some ambitious concepts employing a more integrated approach that leverages specialized port handling facilities and new technology concepts may be attractive enough to commercialize.

Similarly, the uptake of floating foundation technology is expected to be limited when compared to the large scale uptake of tripod/tripile/jacket foundations through 2020. Saturation of near shore, shallow water resources may drive limited long term demand, but most demand will stem from areas such as Japan, where the only developable resources lie where water depths typically exceed 50m.

This Research Note examines a subset of new installation vessel and floating foundation technologies including their potential operation benefits and associated technology challenges.

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