Offshore Wind Installation Forecast

Half-Year Report - H2 2024

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Foreword

Welcome to the second edition of Spinergie's biannual Offshore Wind report. Our flagship report aims to provide clarity and strategic insight for developers and contractors focusing on the global bottom-fixed offshore wind installation market outside of China.

As we enter the second half of 2024, the offshore wind sector worldwide is seeing recovery from the shocks of last year.

Supply chain shortages and rising inflation made 2023 a difficult year for the industry, leading notably to the suspension of 8.6 GW in the USA, the failure of the CFD round 5 in the UK, lease awards delayed, many PPAs canceled and FIDs postponed.

However, the first half of 2024 demonstrates a strong resilience of the European market. In May 2024, the massive 1.56 GW Nordseecluster, offshore Germany, reached FID, and the UK cleared consent for five new projects. Transmission System Operators (TSOs) across France, Germany, and Belgium awarded major new connection projects, demonstrating the will of these European countries to continue their investment in the wind sector. Construction of two new cable lay vessels and two new WTIVs has been announced by European players since the beginning of the year, showcasing renewed investor confidence.

Will the other regions follow the resilience of the European wind market against the difficult macroeconomic context? Positive signs were sent by stakeholders in those regions. After the rough seas off the US East Coast last year, there seems to be hope on the horizon. New York state reviewed Power Purchase Agreement conditions to secure its offshore wind capacity by 2030, and Orsted took 924 MW Sunrise's FID despite the issues with the delivery of WTIV Charybdis. In APAC, Australia took a step closer to its entrance into the offshore wind market with the award of six feasibility licenses. New developments in the second half of the year will definitively put those regions back on the growth trajectory. Several FIDs are expected in Taiwan, and South Korea by the end of the year. On the auction side, the sector is still waiting on the result of the next Taiwan zonal development round and if the next US leasing rounds will be more successful than the previous Gulf of Mexico Wind Lease Sale.

The impact of the 2023 inflation was more acute on the floating wind market. The sector has yet to find its cost-effective industrial model. The crisis has emphasized this recent technology's high CAPEX and OPEX. In its last offshore wind report, the GWEC downgraded its global offshore floating wind forecast 22% lower than the previous year's projection. Due to the crisis and weak financial support from governments, the commercialization of floating wind is likely to be pushed towards until 2029-2030.

In conclusion, the 2023 economic inflation crisis has not stopped offshore wind development. As for fixed-bottom wind, while the sector is back on its expansion trajectory, it still faces several critical challenges. These include supply chain bottlenecks, technological hurdles in turbine and foundation design, complex regulatory environments, financing and investment risks, and grid integration and electricity transmission challenges. Furthermore, our findings indicate that significant vessel supply bottlenecks will appear in 2026, with maintenance activities further straining vessel availability and a shortage of adequately sized and available floaters anticipated.

The vessel shortage is particularly urgent due to its immediate impact on project timelines and costs. This issue is compounded by the lengthy lead times required by shipyards to deliver next-generation installation vessels and the high costs of new assets. The industry's shift towards larger turbines and installations in deeper waters necessitates advanced heavy-lift vessel capabilities, but the shortage concerns both the number of vessels and their operational capabilities. Cable layers are also in high demand, with a flurry of orders for newbuilds in 2023, many of which are still under construction.

Disparities are emerging in strategy among installation contractors. Some are bullish, focusing on installation as pure players and anticipating high growth and demand from offshore wind developers. Others are more cautious, remaining lean, diversified, and opportunistic. Asian manufacturers are seizing the opportunity to expand, as evidenced by Sumitomo's new cable plant in Scotland and MingYang's efforts to establish a turbine manufacturing presence.

This forecast report estimates market demand, analyzes vessel supply details, and assesses the impact of the vessel shortage. The goal is to identify the vulnerabilities in the heavy-lift installation vessel sector facing growing demand and determine when these will be most pronounced.

All of the findings reported, reflect Spinergie's meticulous approach to analyzing the offshore wind industry. We employ a diverse data set and modeling to ensure accuracy and depth in our analysis. Our comprehensive approach, blending innovative data science with practical industry knowledge, makes this report a key resource for navigating one of the most critical aspects of the multifaceted offshore wind landscape: heavy-lift installation.

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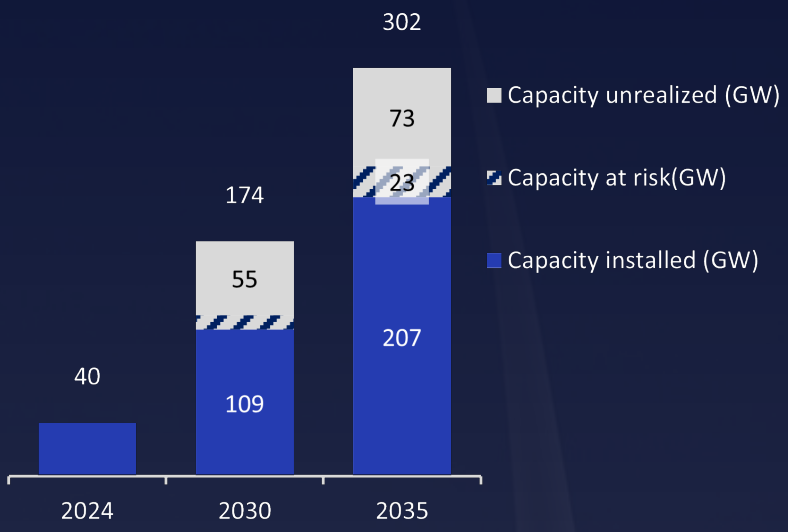
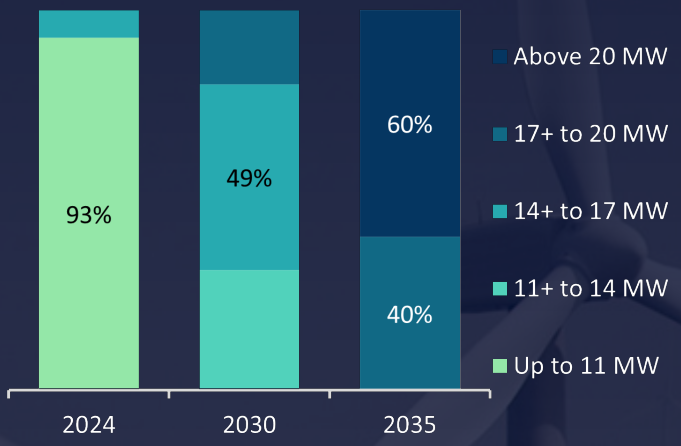
Executive summary



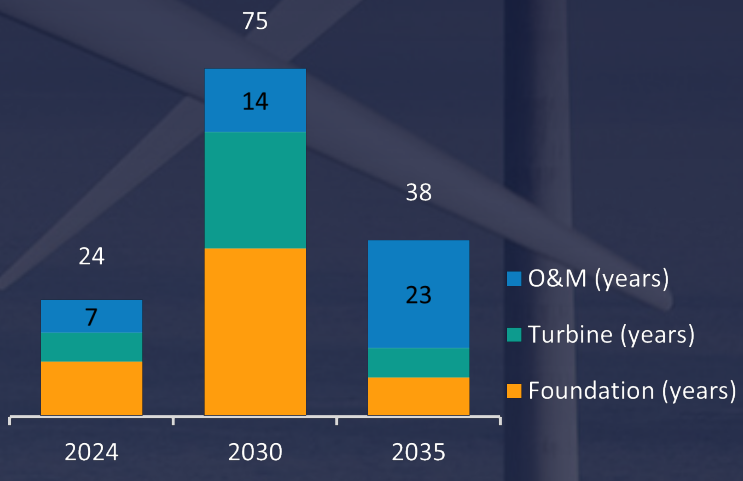
109 GW to be installed by 2030, two-thirds of the planned capacity

By 2030, from a 174 GW pipeline, 109 GW will likely be installed, potentially reaching 120 GW with adequate vessel supply and leaving out 55 GW that will not find today installation vessels. By 2035, installed capacity is expected to hit 207 GW, or 68% of the announced bottom-fixed pipeline, reflecting a significant but challenging expansion in offshore wind farms.



Bigger turbines are coming, despite uncertainty

As expected, the 15 MW turbine segment is set to dominate the offshore wind market later this decade, as smaller turbines (11 MW and below) fade out. The industry faces pressures, with soaring costs and geopolitical uncertainty, with China's emerging role through its development of 16 to 22 MW turbines. Despite challenges, developers are driving a shift towards larger turbines.



Heavy-lift vessel demand is over-concentrated around 2030

Annual offshore wind capacity demand will peak at 43 GW, overstretching installation fleets. Heavy component replacements remain time-intensive, with significant increases in vessel demand expected, and maintenance becoming half of all heavy-lift demand.

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