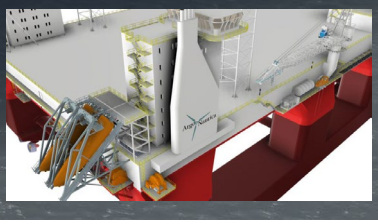
GRS OFFSHORE RENEWABLES

# Argo Nautica:
# A New Approach to Wind Turbine Installation





The offshore wind industry is under growing pressure to find installation vessels that can keep pace with increasingly large and complex projects. Ocean Wind Services AS, a Norwegian company, has introduced a new concept aimed at meeting that challenge: the Argo Nautica, a next-generation semi-submersible Wind Turbine Installation Vessel.

Unlike conventional jack-up vessels, the semi-submersible configuration is designed to maintain stability in deeper waters and in more demanding sea states. Ocean Wind Services says the design draws on more than 40 years of combined experience in offshore oil and gas operations and over two decades in the offshore wind sector. This combination of disciplines is central to the vessel concept: rather than building a vessel around a single installation task, the company set out to create a multi-purpose platform capable of adapting to changing project requirements across the energy sector.

The Argo Nautica brings together heavy-lift capability, marine engineering expertise and offshore installation experience within a single platform. This flexibility is becoming increasingly relevant as offshore wind projects move into deeper waters and require equipment that can handle both larger turbine components and the logistical complexity of modern offshore campaigns.

GRS advises on the full commercial lifecycle of offshore installation vessels, including vessel procurement, charter agreements and newbuild transactions across the global offshore wind supply chain.

The concept has already attracted attention in Norway, where coverage from Teknisk Ukeblad highlights the broader industry shift toward vessels capable of combining traditional offshore capabilities with the specific demands of renewable energy projects. For Ocean Wind Services, the Argo Nautica represents a strategy of applying decades of offshore expertise to a market in transition, where flexibility, engineering depth and multi-purpose design are becoming commercially valuable.

As offshore wind projects continue to scale in both turbine size and water depth, the demand for capable installation vessels is expected to grow significantly. Concepts such as the Argo Nautica reflect how the supply chain is preparing for that next phase of development.

# Nordlicht Begins Offshore Construction

Construction has begun at Germany's largest offshore wind project. The first monopile for Nordlicht I was installed on 1 July 2026 in the German North Sea, marking the start of the main offshore construction phase for a development that will ultimately deliver more than 1.6 GW of wind energy capacity.

Developed by Vattenfall, the Nordlicht cluster comprises two offshore wind farms located approximately 85 kilometres north of Borkum. Nordlicht I will consist of 68 Vestas 15 MW turbines installed on monopile foundations, making it Germany's largest individual offshore wind farm. Nordlicht II, with a planned capacity of around 630 MW, is expected to follow approximately one year after Nordlicht I completes its own foundation programme.

The foundation campaign is being carried out by DEME, which was awarded the transport and installation contract in 2024. EEW Special Pipe Constructions is manufacturing the monopiles at its Rostock facility, while CS Wind supplies the transition pieces from Aalborg. Each monopile can reach 80.5 metres in length and weigh up to 1,290 tonnes. The scale of these components reflects the direction of travel across the offshore wind sector, where turbine and foundation dimensions continue to grow with each new project generation.

The project also incorporates lower-emission steel in parts of the turbine towers, which Vattenfall estimates will reduce the towers' overall carbon footprint by around 16 per cent. Both farms combined are expected to generate around 6 TWh of fossil-free electricity annually, equivalent to the consumption of roughly 1.7 million German households. Commercial operation is targeted for 2028.

With offshore construction now underway, Nordlicht represents a significant step in Germany's energy transition and a clear signal of the increasing scale of European offshore wind ambitions.

# Feng Miao 1 Moves into the Construction Phase

Taiwan's offshore wind sector is advancing into a new phase as the Fengmiao 1 project moves through several significant construction milestones. Located approximately 35 kilometres off the coast of Taichung, the project has a planned capacity of 495 MW, to be generated by 33 Vestas V236-15 MW offshore wind turbines installed on jacket foundations.

Developed by Copenhagen Infrastructure Partners, Fengmiao 1 reached financial close in 2025 as the first of Taiwan's Round 3 offshore wind projects. Construction activity has since accelerated. The DEME and CSBC joint venture vessel Green Jade completed the installation of the offshore substation foundation ahead of schedule, with the combined weight of the substation structure exceeding 8,000 tonnes, making it the largest offshore substation installed in Taiwan to date. The offshore substation was delivered under an EPC contract by a consortium of Semco Maritime and PTSC M&C.

Export cable works were also completed in August 2026, when Jan De Nul's cable-laying vessel Willem de Vlamingh pulled the two high-voltage export cables into the offshore substation, completing the offshore grid connection. The two cables, measuring 45 and 44 kilometres respectively, had been installed earlier in the year and wet stored pending the substation installation.

The next major phase involves the installation of 33 jacket foundations, to be carried out by the CDWE joint venture. Commercial operation is scheduled for 2027. With the substation in place and the grid connection completed, Fengmiao 1 is now firmly in the execution phase, adding to the growing body of construction experience in Taiwan's expanding offshore wind market.



# A Cutting-Edge Offshore Vessel Capable of Installing 5,000 Metric Ton Monopiles to Support Future 20-30 MW Wind Turbines




Two European engineering companies have joined forces to develop a new generation of offshore installation vessels designed to handle the monopiles and turbines that will define the offshore wind sector through the 2030s. Finnish naval architecture firm Deltamarin and Spanish offshore specialist Offshoretronic have entered into an exclusive engineering consultant agreement to bring the Vitruvian class vessel design to shipyard-ready status.

The Vitruvian concept comes in two variants: a Monopile Installation Vessel and a Wind Turbine Installation Vessel. The Monopile Installation Vessel is designed to handle monopiles exceeding 3,000 tonnes and to transport and install the foundations required for 20 to 30 MW wind turbines. With a length of 179 metres and a beam of 75 metres, the vessel is projected to be the largest jack-up unit of its type to come to market. The Wind Turbine Installation Vessel variant is configured to transport and install turbine components including towers, nacelles and blades, stored along the vessel's longitudinal axis.

The design responds directly to the direction of the offshore wind industry. Turbines in the 20 to 30 MW range are expected to enter commercial service by approximately 2030, and the foundations required to support them will far exceed what much of the current global installation fleet was designed to handle. By developing a vessel class purpose-built for this scale, Deltamarin and Offshoretronic are positioning the Vitruvian ahead of that transition.

The Vitruvian design was unveiled at SMM 2026 in September, where both companies presented the concept to the international maritime and offshore engineering community. The move to bring the design to shipyard-ready status marks an important step toward bringing new installation capacity to market ahead of the next wave of offshore wind development.








# Port Talbot to Become Offshore Wind Hub for the Celtic Sea

Port Talbot is positioning itself as a key logistics and assembly base for the development of floating offshore wind in the Celtic Sea. The UK government has agreed to provide up to £64 million to Associated British Ports to complete design and engineering work for infrastructure that would transform the South Wales port into the first dedicated floating offshore wind hub in the region.

The strategic case for Port Talbot rests on a combination of deep-water access, extensive quayside space and proximity to the designated leasing zones in the Celtic Sea. These characteristics make the port well suited for the assembly, staging and long-term operations required by floating wind turbines, which are larger and more logistically complex than their fixed-bottom counterparts. Local authorities and private partners have already begun outlining investment plans to modernise heavy-lift facilities, improve grid connections and create dedicated areas for fabrication and pre-assembly.

The Celtic Sea has been identified as one of the primary regions for the next phase of UK offshore wind expansion, with upcoming leasing rounds expected to unlock several gigawatts of capacity. Floating wind technology is central to developing this area, as water depths in the Celtic Sea largely exceed the practical range of conventional fixed foundations. Port Talbot's investment in dedicated infrastructure is intended to stimulate a broader supply-chain ecosystem, attracting manufacturers, engineering firms and service providers to the region.

If the plans materialise as expected, Port Talbot could become one of the most important offshore energy hubs in the UK and a key driver of economic growth in South Wales. The government estimates the project could support at least 4.5 GW of floating offshore wind capacity and up to 5,000 jobs. For the Celtic Sea, the development of a dedicated port base represents a critical step toward the commercial deployment of floating wind at scale.

# Seatrium Advances Floating Wind Platform with ABS Design Approval

Singapore-based offshore engineering group Seatrium has achieved a significant milestone in floating offshore wind development after securing Basic Design Approval from the American Bureau of Shipping for its proprietary 15 MW Floating Wind Semi-Submersible platform, known as the FWSS.

The approval builds on an earlier Approval in Principle and further validates the platform's technical readiness for large-scale offshore deployment. The FWSS design is based on a semi-submersible structure with pontoons on three sides and a central column that supports the turbine. Seatrium says the concept is optimised for efficient fabrication and cost-effectiveness, and that it can operate in harsh offshore environments. The design supports modular fabrication and scalable industrial deployment strategies.

The FWSS platform leverages Seatrium's experience in deepwater offshore engineering and EPC delivery, combining stability-focused semi-submersible technology with integrated construction and installation capabilities. The company describes the platform as designed to simplify fabrication, transportation and offshore integration while supporting efficient deployment in deeper water environments.

Seatrium has also highlighted its integrated project delivery approach for offshore wind developments, covering engineering, procurement, construction and final offshore integration under a global execution model. For a company with roots in deepwater oil and gas construction, the FWSS platform represents a deliberate step into the offshore wind space, drawing on existing engineering capabilities while addressing the specific requirements of floating wind at commercial scale. As the floating offshore wind sector continues to mature, classification approvals such as this are becoming increasingly important markers of technical credibility for investors, developers and regulators.



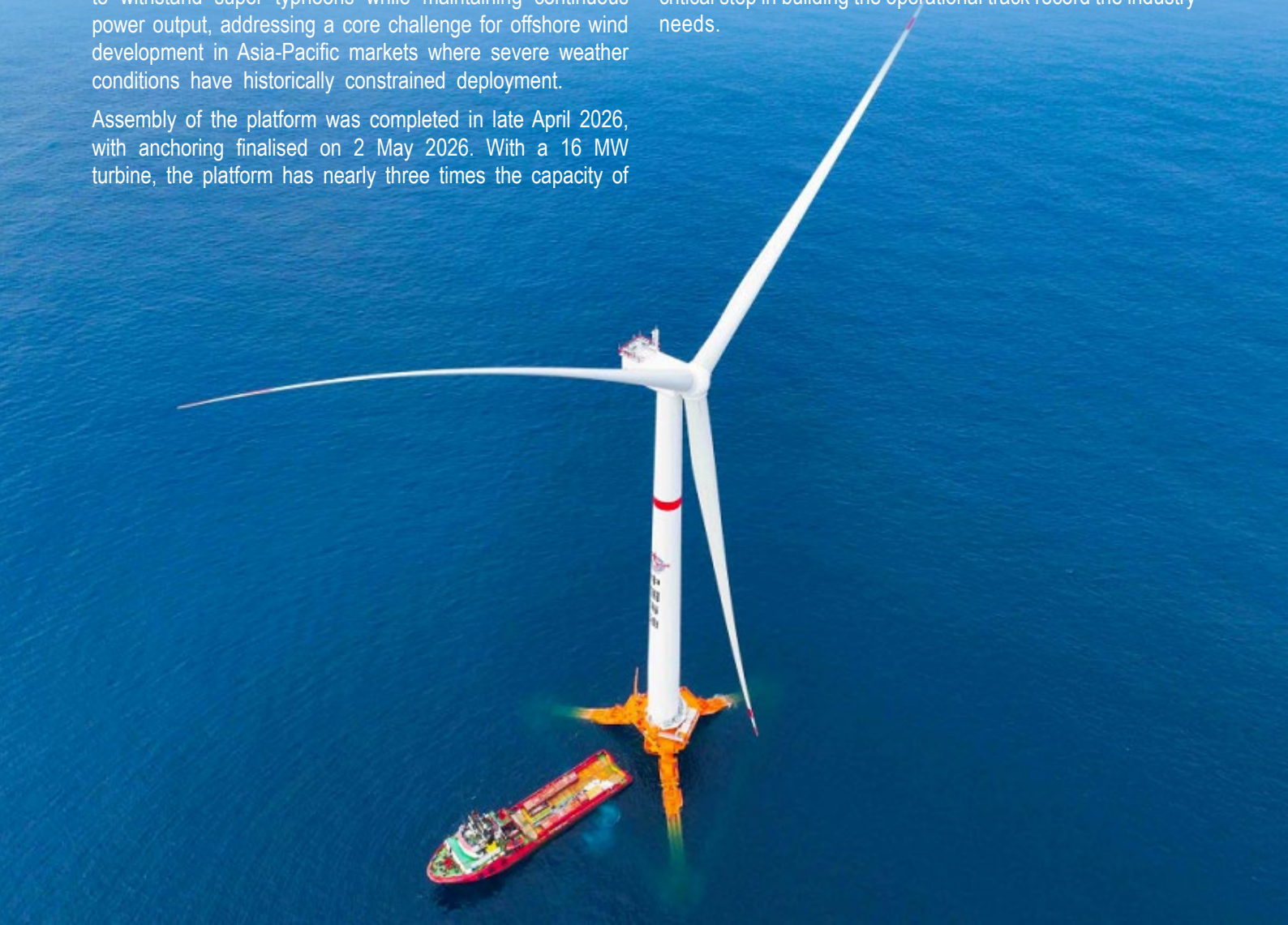
# 16 MW Typhoon-Resistant Floating Wind Platform Enters Operation

A new milestone has been reached in floating offshore wind development with the Three Gorges Navigator, the world's first 16 MW typhoon-resistant floating wind platform, entering official operation. The platform was developed by Goodwind and the Three Gorges Group and is located more than 70 kilometres offshore from Yangjiang in Guangdong Province, southern China.

The Three Gorges Navigator is built on a 24,100-tonne semi-submersible platform secured by nine suction anchors, polyester fibre cables and anchor chains. The site is exposed to some of the most demanding conditions in the offshore wind sector, with wave heights exceeding 20 metres and wind speeds above 160 miles per hour. The platform was engineered to withstand super typhoons while maintaining continuous power output, addressing a core challenge for offshore wind development in Asia-Pacific markets where severe weather conditions have historically constrained deployment.

Assembly of the platform was completed in late April 2026, with anchoring finalised on 2 May 2026. With a 16 MW turbine, the platform has nearly three times the capacity of the Three Gorges Leading Ship, an earlier floating wind unit commissioned in 2021. The progression in scale reflects the rapid pace of technology development in China's floating wind sector and the ambition to move from demonstration projects toward commercially viable deep-water installations.

For the floating wind sector globally, the successful operation of a 16 MW typhoon-resistant platform in deep water is a significant data point. It provides evidence that the technology can function reliably in some of the world's most hostile offshore environments, and offers experience that will inform future developments across Asia and other typhoon-exposed markets. As floating wind moves closer to commercial scale, platforms such as the Three Gorges Navigator represent a critical step in building the operational track record the industry needs.



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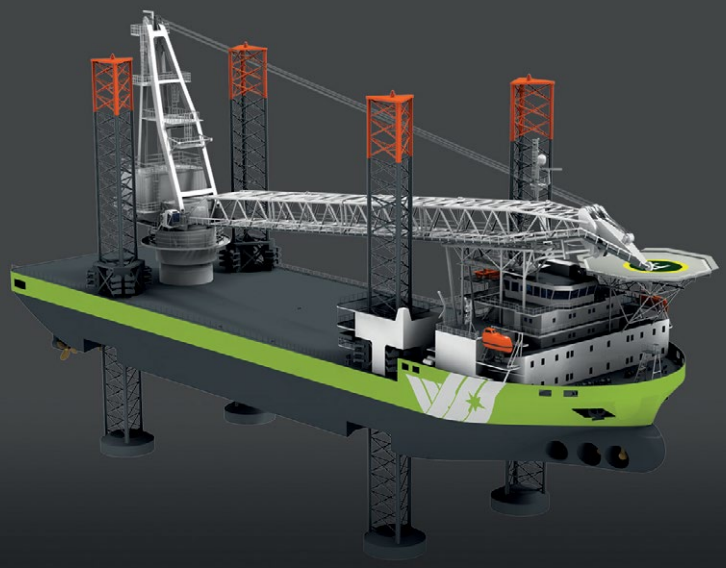





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