



**SLOW MILL SUSTAINABLE
POWER BV RELOCATES
WAVE ENERGY
CONVERTER FOR DRY
TESTING AND OFFSHORE
PREPARATION**

In typical Dutch weather, Slow Mill Sustainable Power BV has transferred its Slow Mill-40 wave energy converter from Den Helder harbor to a dry testing facility. At this new site, the 40 kW wave energy generator will undergo comprehensive dry testing before it is deployed at the Offshore Test Site (OTS) in Scheveningen.

Previous offshore tests demonstrated the structural resilience of the device in the harsh conditions of the North Sea. With enhancements made to the anchoring system, blades, and control mechanisms, this series of tests aims to validate the full functionality of the system (achieving Technology Readiness Level 6), assess its energy production capacity, and ensure its durability over a year-long deployment.

Wave energy presents significant potential in contributing to a stable and reliable energy grid, particularly due to its ability to complement wind and solar power.





X1 WIND

NEXTFLOAT+ PROJECT SECURES €13.4 MILLION GRANT FROM INNOVATION FUND

The NextFloat+ Project has been awarded a substantial grant of €13.4 million from the European Commission's Innovation Fund, aimed at advancing the industrialization of floating wind technology.

This pan-European initiative, led by a consortium that includes X1 Wind as the project coordinator, alongside Technip Energies and NextFloat Plus S.A.S, seeks to accelerate the deployment of next-generation floating wind technology by enhancing its competitiveness and scalability. The project involves the installation of a 6MW floating wind platform at a test site in the Mediterranean Sea.

The prototype, named 'X90,' will showcase a cost-efficient integrated system featuring a structurally efficient and lightweight floating platform equipped with a Single Point Mooring (SPM) and a Tension Leg Platform (TLP). This design significantly reduces the environmental impact on the seabed.

This financial support will further the industrialization and scaling of the floating wind solution to a capacity of 20MW and beyond. X1 Wind's CEO and co-founder, Alex Raventos,

highlighted that the grant comes after the X90 platform received a Statement of Feasibility and a Statement of Compliance from the independent expert DNV.

"We are excited to receive this vital support from the Innovation Fund," said Raventos. "This grant is a key component in the funding for the NextFloat+ Project, supplementing existing finance from the European Commission's Horizon Europe program, the French Government's France 2030 plan operated by ADEME, and private investments from partners and shareholders. This support will enable us to significantly improve the competitiveness of floating wind technology as we move towards large-scale global deployment."

The NextFloat+ Project will build on the achievements of the PivotBuoy Project, which successfully demonstrated X1 Wind's innovative technology with a part-scale prototype in the Canary Islands. The project will introduce further innovations to reduce the Levelized Cost of Energy (LCOE) for floating wind and minimize its environmental impact, including a patented quick-connector system and a bio-boosting system on the floater.



JBA CONSULTING PARTNERS WITH QUOCEANT ON INNOVATIVE SUBSEA TECHNOLOGY DEVELOPMENT



JBA Consulting is pleased to announce that its ForeCoast® Marine software has been selected by Quocean to showcase the advantages of their cutting-edge Q-Connect system.

What is the Q-Connect System?

The Q-Connect system is an advanced subsea technology designed to enable rapid and secure connection and disconnection of moorings and electrical cables to marine renewable energy devices. Its “hands-free” remote operation removes the need for specialized vessels or complex cable handling, offering a safer and more efficient alternative to conventional methods.

Why ForeCoast® Marine?

Quocean has chosen ForeCoast® Marine to demonstrate the game-changing potential of the Q-Connect system within the marine energy sector. The software will simulate Q-Connect’s

performance in real-world offshore energy projects, allowing a detailed comparison with traditional connection methods. The evaluation will consider factors such as cost, project timelines, and environmental impact. This modeling work is part of Quocean’s broader development program, which has received funding from the Offshore Wind Growth Partnership (OWGP).

Benefits for Floating Offshore Wind

Leigh Baxter, an IDCORE Research Engineer working with Quocean, will also utilize ForeCoast® Marine to assess the specific benefits of the Q-Connect system for floating offshore wind farms. The project aims to tackle the unique challenges associated with floating platforms, including maintaining stability and ensuring reliable electrical connections in dynamic conditions. This research will highlight the transformative potential of the Q-Connect system for the floating wind sector.



DESIGNED TO LIFT & UPEND PIN PILES FOR JACKETS INSTALLATION



Shinfox Far East (SFE) engaged TWD to design a specialized pin pile lifting tool (PPLT) for the TPC Offshore Wind Farm located off the coast of Taiwan. This tool is essential for lifting pin piles used in the installation of jackets, which act as foundations for offshore wind turbine generators.

In addition to the PPLT, TWD also designed a dedicated seafastening frame to secure the tool during transit. The PPLT operates by lifting and upending the pin pile, utilizing hydraulic clamps for secure handling. A stabbing frame is incorporated to ensure precise landing on the pin pile, and the tool has an impressive working load limit (WLL) of 800 tons.

The primary challenge of this project was meeting a stringent timeline for delivery. TWD successfully addressed this by tailoring the design to align with the procurement schedules, opting for off-the-shelf components when possible, and offering comprehensive support in procurement and fabrication. The project's success was the result of close collaboration among suppliers, fabricators, SFE, and TWD.

Project Highlights:


- Smooth landing ensured by the use of a stabbing frame
- Design modifications to meet tight procurement timelines
- Main clamps frame equipped with rotational capability
- Centralizing cylinders for precise clamp alignment and pile release
- Fully remote-controlled operation



PRINCIPLE POWER PARTNERS WITH HSG SUNGDONG FOR MASS PRODUCTION OF WINDFLOAT® FOUNDATIONS IN KOREA

Principle Power has entered into a non-exclusive Memorandum of Understanding (MoU) with HSG Sungdong to collaborate on engineering advancements for the large-scale production and assembly of WindFloat® floating wind foundations. This partnership is a key step in establishing a sustainable domestic supply chain in Korea, aligning with the nation's goal to reach 14.3 GW of offshore wind capacity by 2030.



 Principle Power

 HSG SUNGDONG

MOU Signing Ceremony
for WindFloat® Serial Manufacturing for Commercial-Scale Projects

APOLLO SUCCESSFULLY TRIALS INNOVATIVE PALM QCS™ SYSTEM IN ORKNEY

Apollo, a prominent engineering and energy advisory firm, has successfully completed trials of its PALM Quick Connection System (QCS) for floating offshore renewables. The trials, conducted in Orkney from late March to May this year, confirmed the system's robust performance in real-sea conditions.

Developed under the Wave Energy Scotland (WES) Quick Connection Systems program and with support from the Offshore Wind Growth Partnership, the PALM QCS is designed to streamline the efficient connection and disconnection of cables and moorings for floating offshore renewable devices. This innovation significantly reduces operational costs by enabling quick connections using a conventional tow tug's winching action, eliminating the need to bring devices back to port for maintenance—a process that can be both expensive and time-consuming. The system also allows operations in higher sea states and removes the need for on-deck connections.

The PALM QCS is a mechanical system capable of incorporating electrical wet mate connectors, facilitating both functions with the winching action alone. During the recent trials, the system withstood severe weather conditions, including Storm Kathleen, and successfully completed multiple connect and disconnect operations.

Nigel Robinson, Apollo's Offshore Renewables Director, commented, "The successful trial of the PALM QCS in Orkney marks a significant milestone not just for Apollo but for the entire industry. This achievement is a testament to the powerful collaborations that propel our sector forward. We extend our gratitude to Wave Energy Scotland, whose support was instrumental in the conception and development of the PALM QCS™, and to Leask Marine, our marine contractor, along with the many local supply chain companies whose contributions were vital. This trial exemplifies what we can accomplish together as we advance the future of offshore renewable energy, and we look forward to continuing these collaborative efforts."





ØRSTED PIONEERS HEAVY-LIFT CARGO DRONE OPERATIONS AT BORSSELE 1&2 OFFSHORE WIND FARM

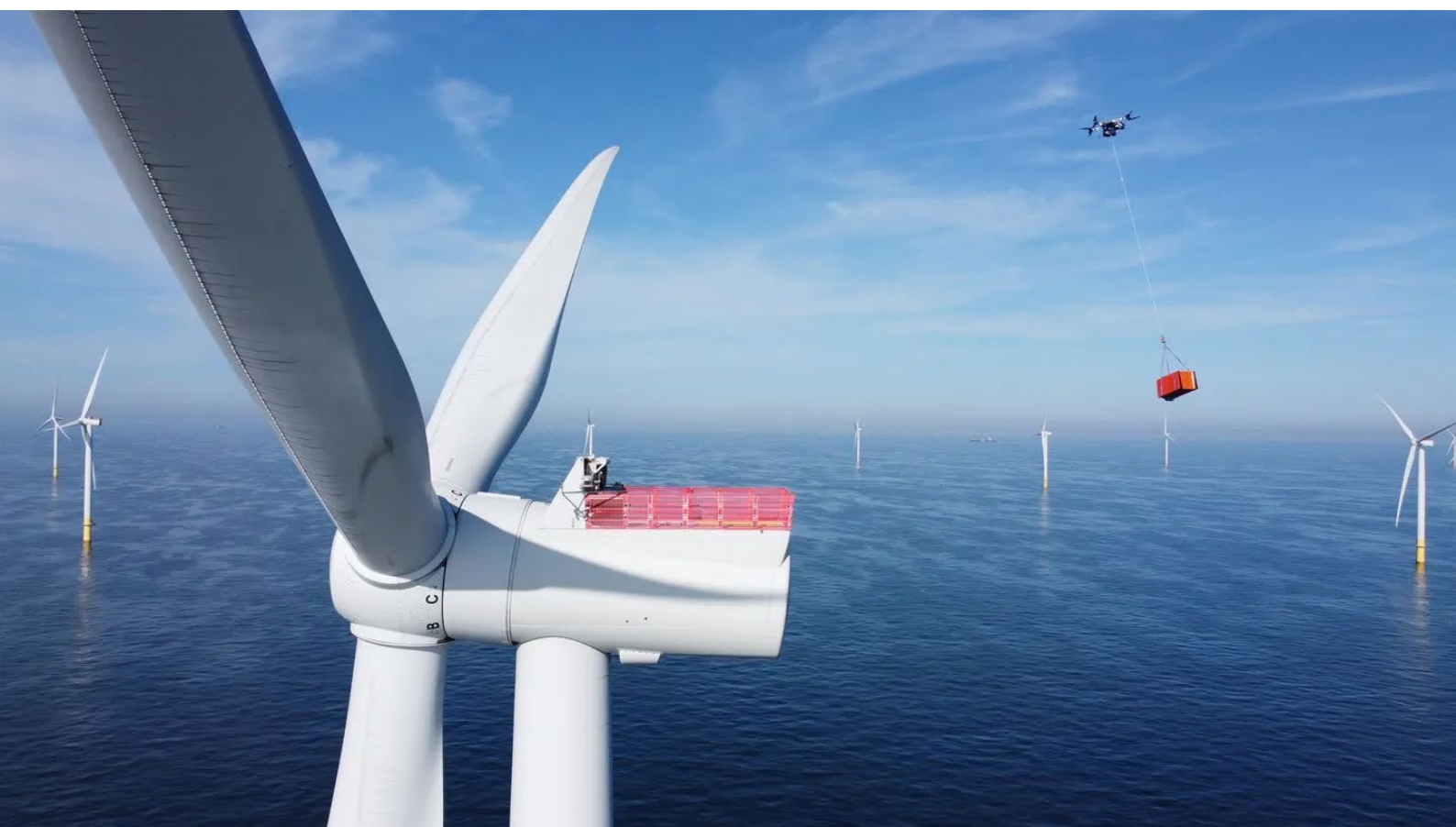
Ørsted, a global leader in offshore wind, has initiated the first-ever deployment of heavy-lift cargo drones (HLCD) at the Borssele 1&2 Offshore Wind Farm. This groundbreaking operation represents a significant advancement in operational efficiency and safety within the offshore wind sector. The heavy-lift drone will transport cargo directly from a vessel to all 94 wind turbines at the Borssele site.

Building on previous trials and drone expertise from other offshore wind farms, Ørsted is utilizing 70 kg drones with a wingspan of 2.6 meters, capable of carrying up to 100 kg of cargo. This marks the first time these drones are being used in an operational campaign, following successful concept tests at the Hornsea 1 Offshore Wind Farm in the UK last year.

In this campaign, Ørsted is upgrading critical evacuation and safety equipment in each turbine. Traditionally, this would involve a vessel traveling between turbines, using cranes to move equipment onto the turbine's transition piece and then

up to the nacelle. Instead, the drone flies directly from the offshore supply vessel to the top of the nacelle, completing the journey in about four minutes per turbine. This drone operation is significantly faster, reducing the task completion time by 10-15 times compared to traditional methods, which could take up to six hours.

Rasmus Errboe, Ørsted's Chief Commercial Officer and Deputy CEO, remarked: "Ørsted has transformed offshore wind from a niche technology into a cost-effective and large-scale source of renewable energy. We've achieved this through major innovations, such as pioneering new turbine models, and by continuously bringing new ideas into practical application. The use of drones at Borssele 1&2 is a prime example, as it enhances safety, lowers carbon emissions, and reduces the costs of operating offshore wind farms, thereby strengthening the commercial viability of offshore wind for investors, governments, and corporations."



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**GRS.OFFSHORE RENEWABLES GMBH
– STADTHAUSBRUECKE 7 – 20355
HAMBURG**

**MANAGING DIRECTOR:
P. SCHOENEFELD, M. MROSS**

COURT OF REGISTRY:

HAMBURG

**COMMERCIAL REGISTRY:
HRB 119000 – VAT-ID: DE27813673**