



Voe Vanguard, a ship used by JF Renewables. (Courtesy: RWE)

CONSTRUCTION

JF Renewables completes first part of ordnance probe

James Fisher Renewables has completed the first part of a two-phase contract to investigate unexploded ordnance and possible archaeological features ahead of the installation of export cables for RWE's Sofia Offshore Wind Farm.

In September and October 2021, JF Renewables investigated 35 near-shore targets to assess the need for disposal. Remote investigation and disposal are key to safeguarding people and assets during construction and operation phases.

Phase two will begin in early 2022 and will use a low-order disposal technique to minimize noise and to remove any UXOs to protect marine mammals and sea life.

The Sofia Offshore Wind Farm is off the northeast coast of the U.K. As the U.K. aims to construct offshore wind to reach its 40 GW target of electricity using wind by 2030, disposal solutions will become increasingly important.

"We are delighted to be continuing our established and successful relationship with RWE on the Sofia Offshore Wind Farm.

Following a thorough investigation of this particular route, we successfully confirmed all scoped targets as non-UXO," said Wayne Mulhall, JF Renewables' managing director. "Our expertise gained from performing more than 3,000 UXO investigations around the globe enabled us to identify additional targets requiring survey, helping us to ensure phase one of the work was completed to the highest standard with the greatest regard for safety for all those involved."

MORE INFO jamesfisherrenewables.com

CONSTRUCTION

Nexans hosts event for U.S.' high-voltage subsea cable facility

Nexans hosted opening festivities for the U.S.' first high-voltage subsea cable facility.

Christopher Guerin, Nexans CEO, welcomed guests and elected officials to the Charleston, South Carolina, plant.

The plant's tower is the tallest building in South Carolina at 427 feet and produces cables that can be up to 500,000 volts. The turntables that the cables are loaded on can weigh up to 10,000 tons — the same weight as the Eiffel Tower.

The facility will include a terminal to load the cables onto Nexans vessels Aurora and Skagerrak and will then be distributed to domestic and global offshore markets.

Speakers included Rep. Jim Clyburn (virtually), Deputy Assistant Sec. of the Interior Steve Feldgus, Goose Creek Mayor Greg Habib, Orsted Offshore North America COO Troy Patton, Business Network for Offshore Wind President Liz Burdock.

MORE INFO www.nexans.com

INNOVATION

WindESCo partners with Phoenix Contact

WindESCo has signed Phoenix Contact to provide the Swarm Edge component of WindESCo's swarming solution. Swarm Edge will be installed on each turbine to provide data collection and centralized control.

Swarm technology is WindESCo's patented solution for autonomous, cooperative control of wind assets. The system is licensable by OEMs and partners and enables turbines to cooperatively adjust positioning to mitigate wake effects and boost production for the entire farm — not just single machines — by 3 to 5 percent each year.

"Phoenix Contact is a trusted brand in the wind-energy industry, for good reason. Our customers have come to equate Phoenix Contact with long-term systems and infrastructure reliability due to their consistent high standards, domain expertise, and innovative outlook. Collaborating with Phoenix Contact to deploy our latest technology ensures that our solution is reliable, scalable, and ready to revolutionize AEP optimization for wind farms globally," said Ed Wagner, WindESCo's CRO.

To optimize wind-energy generation across an entire site, Swarm TM brings together the latest advances in Industrial Internet of Things and artificial intelligence, enabled by on-site hardware such as edge processing units within individual turbines and



The tower that is part of the manufacturing process is the tallest building in South Carolina at 427 feet. (Courtesy: Nexans)



Strohm and Siemens Gamesa collaborate on offshore green hydrogen solutions. (Courtesy: Siemens Gamesa Renewable Energy)

a central server on site, which in turn communicates with cloud servers to coordinate turbine movements optimally across the plant.

MORE INFO www.windesco.com

INNOVATION

Siemens Gamesa, Strohm team up on hydrogen transfer

Strohm, manufacturer of thermoplastic composite pipe, has signed a memorandum of understanding with Siemens Gamesa Renewable Energy to collaborate on development of hydrogen transfer solutions.

Strohm is a market leader in design and manufacturing of thermoplastic composite pipe, which is suited for carrying hydrogen offshore and subsea. The pipe is produced at the Strohm plant in The Netherlands. The corrosion-resistant technology, manufactured in spoolable lengths, can be pulled directly into the wind-turbine generator, quickly and cost-effectively building an offshore wind-farm infrastructure.

The collaboration will focus on developing hydrogen-transfer solutions that improve the decentralized green hydrogen concept, whereby green hydrogen is generated in each wind-turbine generator and transported to shore by a subsea pipe infrastructure. In this concept, power cables are replaced by a pipe infrastructure, storing



The HALT XL test bench is mounted on a 30-meter-long concrete base and features a 25 MW drive motor that is 15 meters in diameter. (Courtesy: R&D Test Systems)

an electrolyzer into an offshore wind turbine, with clear benefits and value-add potential such as capex reduction, increase of system efficiency, and increase of wind-farm uptime.

MORE INFO strohm.eu

INNOVATION

World's largest nacelle test rig delivered

Danish engineering specialist R&D Test Systems has designed and delivered the world's largest highly accelerated lifetime testing (HALT) test bench for wind-turbine nacelles at the Danish test center Lindø Offshore Renewables Centre (LORC).

In response to the demand for power from renewable energy sources, the new test rig can accommodate the next generation of larger wind turbines and prove they are capable of operating reliably in extreme offshore conditions.

The HALT XL test bench is mounted on a 30-meter-long concrete base. It features a 25 MW drive motor that is 15 meters in diameter and the system can deliver a tilt moment of 85 million Nm. This allows the test bench to simulate harsh wind conditions.

Exposing prototype wind turbines to pre-defined HALT tests allows manufacturers to make accurate assessments of reliability and can shorten time to market.

"We needed to design a test bench that could expose wind-turbine prototypes to the equivalent of 20 years of weather conditions in just six to eight months," said Sascha Heinecke, Sales Director, R&D Test Systems.

The HALT XL test bench at LORC uses a stress-testing approach that exposes prototype products to diverse accelerated stresses to discover the physical limitations of a design and ascertain product reliability. The prototypes can be exposed to all the stresses they could reasonably be expected

and transferring hydrogen. Siemens Gamesa has a technical advisory role.

Thermoplastic composite pipe requires no maintenance and is suitable for more than 30 years in operation, lowering the levelized cost of electric-

ity (LCOE) to a minimum.

As a leader in offshore wind, Siemens Gamesa has already taken steps in shaping the industry and developing the basis for a decentralized offshore solution that fully integrates

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MORE INFO www.rd-as.com/services-products/test-systems

MAINTENANCE

CrewSmart gains approval for maintenance system

The CrewSmart maritime operations management system has gained type approval for its Planned Maintenance System, part of its 2.0 software update.

CrewSmart PMS streamlines asset maintenance processes for offshore-wind fleet managers to improve equipment efficiency, reduce costs, and prevent risks of breakdown or defects in assets during operation.

Safety and compliance are paramount concerns in offshore-wind

fleet management, critical to enable the fleet and its crew to operate at full capacity and provide vital operations and maintenance support to wind farms. Planning appropriate maintenance schedules is essential to maintaining these conditions.

“We use CrewSmart PMS to map out our service timelines based on time and engine hours; we look forward to it tracking inventory of all our supplies. The data has enabled us to make our service and maintenance processes much smoother and quicker and gives us clear maintenance records to use as evidence in our audits. We’re also able to use the system for monitoring all other maintenance checks like fire, electronics, hydraulics, deck, and to measure engine hours and fuel consumption, meaning we can also monitor our carbon footprint, and as the interface can be used by crews on and offshore via the tablet app, our crews are empowered to take ownership of upholding safety and compliance


cross the business,” said Max Perry, HSEQ Manager and DPA for offshore wind CTV operator, Dalby Offshore. CrewSmart PMS employs estimated operational data to recommend appropriate maintenance schedules for assets and components, ensuring continued safe and compliant operation across the fleet. The platform also uses historical maintenance data to estimate costs for future maintenance and repair schedules, and giving more control to the asset manager in organizing and forecasting future maintenance.

MORE INFO www.crewsmart.co.uk

MAINTENANCE

Dewesoft to monitor world’s biggest offshore wind farm


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All of Dogger Bank's wind farm technicians will live on one of North Star's four new hybrid-powered service vessels while on shift. (Courtesy: North Star Group)

lected Dewesoft to provide the tower monitoring solution at what will be the world's largest offshore wind farm.

The system will perform predictive maintenance on the towers of the wind turbines to keep the wind turbines operating at the highest possible level by preventing failures.

The wind farm, Hollandse Kust Zuid, will be 18 to 36 kilometers off the coast of the Netherlands near The Hague and Zandvoort. When fully operational, the 140 turbines have a combined capacity of 1.5 GW.

The monitoring system will be composed of sensors distributed along with the height of the towers providing acceleration, inclination, and velocity measurements.

MORE INFO dewesoft.com

MAINTENANCE

North Star wins Dogger Bank service vessel contract

North Star Group has won a £90 million service operations vessel (SOV) contract for the third phase of the Dogger Bank Wind Farm, off the coast of Yorkshire. The contract is set to deliver

an additional ship with North Star's new hybrid-powered renewables fleet design to support offshore wind technicians in the field.

This will be the fourth craft that North Star has been contracted for by Dogger Bank's partners Equinor, SSE Renewables, and Eni this year. That contract was worth an estimated £270 million. Each of the SOVs has been contracted on a 10-year agreement with three additional one-year options. The contract will create about 40 new full-time positions in crewing and on-shore-based jobs.

"Securing the final SOV contract required for the Dogger Bank Wind Farm development for the next decade is an honor and testament to the hard work and dedication of the team at North Star and our talented technology partners. We are fully committed to supporting the local supply chain and communities in the U.K. where possible and are actively recruiting around 170 personnel from across the country to support this complete vessel package," said North Star CEO Matthew Gordon. "We'd like to take this opportunity to thank Equinor, SSE Renewables and Eni for their enthusiasm and confidence in our SOV service, which significantly shifts the dial on sustainability, comfort, safety, and workability. These hybrid-powered ves-

sels are futureproofed for tomorrow's zero-carbon emission marine fuels and the superior home-from-home living space will provide the offshore wind technicians exceptional respite from the often-harsh North Sea environment."

North Star's new SOVs are high performance, sustainable vessels capable of supporting net-zero goals and using fuels of the future. They provide comfortable, floating-hotel style accommodations to offshore wind-turbine technicians and a centralized logistics hub to travel to and from work each day across a "walk-to-work" gangway or transfer via a smaller daughter craft vessel. The SOVs are also configured to handle cargo and act as a warehouse.

The Dogger Bank wind farm is expected to generate enough renewable electricity to supply 5 percent of the U.K.'s demand, equivalent to powering 6 million homes.

All four SOVs are being built at VARD's Vung Tau shipyard in Vietnam.

MORE INFO www.northstarrenewables.co.uk

MANUFACTURING

R&D installs first 66 kV Fault Ride Through test system

Danish offshore wind turbine test expert R&D Test Systems has installed the world's first Fault Ride Through (FRT) test system rated at 66 kV for the Østerild test facility for wind turbines in Denmark.

The system has been developed for the wind-turbine manufacturer to conduct extreme voltage tests to ensure its turbines meet international standards required for connection to electric grids. R&D Test Systems designed the new system to meet Vestas' specific testing requirements following the installation of a large prototype turbine at the Østerild test site in Denmark, the National Test Centre for Large Wind Turbines operated by

the Danish Technical University (DTU).

With the next generation of offshore wind turbines set to become bigger, with associated increases in power output, wind farms are using higher voltages to achieve efficient power transmission through the long cables required to bring the power generated ashore. The new R&D FRT test system now allows turbines to be tested directly at the operating voltage of 66 kV, avoiding any set-down transformer converting the test setup to 33 kV.

The point of FRT testing is to prove that wind turbines are resilient to grid power quality issues such as when power transmission cables are damaged in a storm. The test is designed to ensure that the generating units, increasingly located out at sea, do not fail due to voltage variations in the power transmission network — a scenario that could lead to costly downtime, maintenance, and in extreme situations, power outages.

R&D designed the 66 kV FRT sys-

tem to cope with the varying grid standards within Germany, Spain, the United States, and Canada to guarantee it can ensure compliance with different international grid standards. ↵

MORE INFO www.rd-as.com

MANUFACTURING

Vestas introduces V162-6.8 MW wind turbine

Vestas recently introduced the V162-6.8 MW, expanding the EnVentus platform's power output and market applicability. Renewables are already a critical part in energy systems across the globe with continued scaling and technology development playing a key role in making renewables a dominant energy source.

"We take another step forward with

the introduction of the V162-6.8 MW, reaching the next level in applicability and scalability. The V162-6.8 MW demonstrates how our modular product development enhances our ability to continuously innovate and lead the industry in developing customizable and sustainable energy solutions that meet our customers' needs," said Anders Nielsen, Vestas' chief technology officer. The V162-6.8 MW is globally applicable and combines an increased power rating and operational flexibility to deliver up to 7 percent annual energy production (AEP) depending on project-specific conditions. The V162-6.8 MW features flexible power ratings of 6.5 MW, 6.8 MW, and 7.2 MW and expanded site applicability through an optional larger CoolerTop.

The performance improvements are achieved through enhanced EnVentus powertrain and power conversion systems.

MORE INFO www.vestas.com/en

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