



The Vertron range of lifting solutions includes land-based and offshore energy, construction and infrastructure, cargo handling and towing, marine, mining, and transportation. (Courtesy: Vertron)

CONSTRUCTION

Vertron, Crosby Group expand load orientation technology

Vertron and The Crosby Group are expanding Vertron's load orientation technology in North America. Crosby Group, Vertron's master distributor for the Americas, has invested in additional units for deployment in the U.S. and Canada, as well as key team members to support the growing business.

The Vertron range of lifting solutions includes land-based and offshore energy, construction and infrastructure, cargo handling and towing, marine, mining, and transportation.

"Vertron's remote-controlled load orientation products provide a step-

change in terms of the safety and productivity of our customers' lifting operations," said Robert Desel, Crosby Group CEO. "Vertron's wireless products remotely orientate suspended loads without the need for taglines, using gyroscopes and sophisticated control systems, removing the need for personnel near or under loads. The combined strengths of Vertron's product with the rich rigging heritage of The Crosby Group has allowed us to bring these benefits to job sites across the Americas."

"We are thrilled to see the investment that The Crosby Group is making in support of our partnership," said Vertron CEO Tim Ekert. "Vertron will have a greatly increased presence in the market to bring our products to new customers and industries and to provide an increased level of support to our existing customers."

Vertron is the inventor of the remote-controlled load orientation system. The company's range of lifting products also integrates smart technology to facilitate more precise load placement, faster task turnover, and superior analysis and oversight of operations.

MORE INFO www.vertron.com.au
www.thecrosbygroup.com

CONSTRUCTION

COWI to deliver turbine foundation design for Empire Wind

COWI, an international engineering consulting group, has been awarded an engineering contract with Equinor



Illustration from offshore wind farm at Dudgeon, U.K. (Courtesy: Empire Wind)

for Empire Wind Project, its largest offshore wind engineering contract in the U.S.

COWI will deliver a design for wind-turbine foundations for Empire Wind 1 and 2 projects. With an anticipated generation capacity of more than 2 GW of renewable power, the project will use 15-MW wind turbines and is expected to play a big role in meeting New York State's 70 percent renewable energy goal by 2030. More than 100 experts will work on the design, from the tower interface to the seabed fastening, including steel, geotechnical, and electrical design for the project as well as engineering support for fabrication, transportation, and installation.

The development spans 80,000 acres and is in water depths ranging from 65 to 131 feet. The project calls for the detailed engineering of 138 foundations with diameters of approximately 30 feet and lengths up to 330 feet.

"We're thrilled to be supporting Equinor and bp on one of the largest offshore wind projects in the U.S.," said Greg Matzat, COWI's market director, Offshore Wind and Renewables. "It's developments like this that really excite us, a complex engineering project, at the head of the development of a new industry in the U.S., that has huge

social benefits and will help New York and the U.S. achieve their renewable energy goals. The offshore wind industry in the U.S. is booming, and we see great potential here for our engineers to continue providing innovative solutions for our clients."

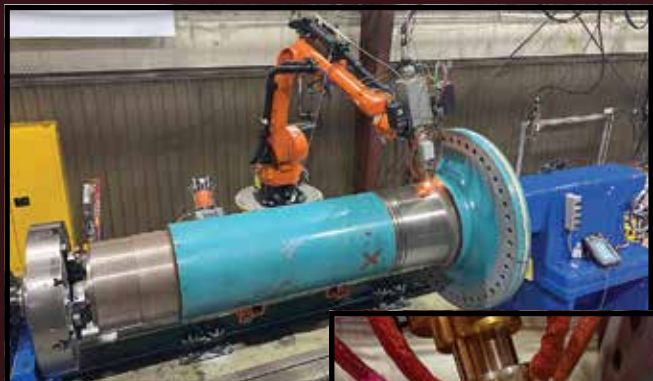
The announcement adds Empire Wind to COWI's offshore wind port-



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Both stages of the Neart na Gaoithe offshore wind farm are complete. (Courtesy: Collett)

folio in the U.S., with COWI's seven-year contract for Vineyard Wind in Massachusetts. The company has also secured projects on both coasts with respect to marine terminals, site assessments, geotechnical analysis, and turbine and offshore substation foundation designs. COWI has engineered wind solutions in Europe since 1980 and has more than 1,200 turbine foundations of its design installed worldwide.

MORE INFO www.cowi.com
www.equinor.com

CONSTRUCTION

Collett completes Neart na Gaoithe wind farm

Both stages of the Neart na Gaoithe offshore wind farm are complete, Collett recently announced.

Two 160-ton shunt reactors and two 180-ton super grid transformers have been delivered to the East Lothian on-shore substation where both stages of the project are completed, with both reactors and transformers offloaded by Collett's Heavy Lift team and positioned using hydraulic jacking and skidding systems.

The wind farm will feature up to

64 turbines with a planned capacity of 450 MW. At that capacity, the farm will be capable of powering up to 391,000 homes. EDF Renewables UK and ESB Group are the project owners. The farm is 15.5 kilometers off the Fife coast and covers an area of about 105 square kilometers.

MORE INFO nngoffshorewind.com

INNOVATION

Megger enhances wind-turbine test leads

Megger has enhanced its KC series of test leads used with wind turbines. The new leads can be used either in a manufacturing plant or in the field for maintenance.

KC-C test leads are lightweight, making them safe for use at extreme heights, and are designed to work with Megger's DLRO2 low resistance hand-held ohmmeter long test lead mode to measure the resistance of the lightning protection circuit of wind turbines.

Developed in conjunction with a wind-turbine manufacturer, the KC-C test leads provide a solution for supplying leads that are long enough for testing the continuity of lightning



Megger has enhanced its KC series of test leads used with wind turbines. (Courtesy: Megger)

protection conductors in turbines. They eliminate the time-consuming, inconvenient and unreliable process of engineers and technicians having to fabricate their own test leads.

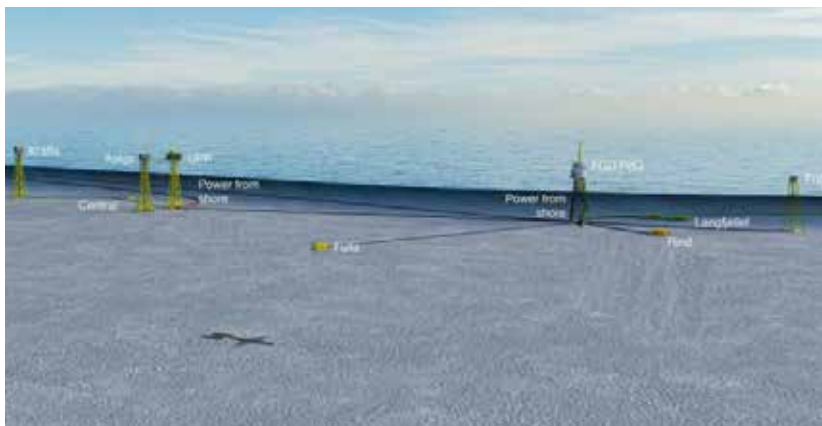
Available in two lengths including 328 feet and 164 feet, each testing lead comes standard on a heavy-duty cable reel that is fitted with a friction brake to avoid tangles while reeling out the cable. They are rated to 10 A. Each lead set includes two test leads fitted with a duplex handspike for probing the lightning receptors on the tips of the turbine blades.

The leads are also fitted with a Kelvin clip designed to offer ease of use, while providing consistent connections that are needed to ensure accurate and repeatable results.

The KC-C test leads also feature hook terminations marked with C or P to ensure the right connections are made; as well as a cable guide on the cable reel to assist with orderly re-winding. These lightweight lead sets, weighing approximately 17 pounds, use a duplex connect test lead system that allows probes or clips to be changed quickly and easily on-site. When combined with the DLRO2, they have a combined weight of less than 20 pounds.

Megger is a manufacturer and supplier of test and measurement equipment used within the electric power, building wiring, and telecommunication industries.

MORE INFO us.megger.com



The development concept for the area, located between Oseberg and Alvheim in the North Sea, consists of a processing platform in the south operated by Aker BP and an unmanned processing platform in the north operated by Equinor. (Courtesy: Equinor)

INNOVATION

Norway's Aker chooses Hitachi Energy as tech partner

Aker BP, the Norwegian oil and gas exploration and production company, has selected Hitachi Energy, a global technology and market leader in power grids, as technology partner for the NOAKA power-from-shore project off the Norwegian coast. The entire project will be powered by up to 150 MW of power from the mainland grid – making it the world's longest power-from-shore AC connection at around 250 kilometers.

Hitachi Energy will perform detailed front-end engineering and design (FEED) studies for a power quality solution that will enable the Aker BP-operated NOA Fulla field and the Equinor operated Krafla field in the North Sea to be powered from the mainland.

Using power from the mainland grid, which is mainly renewable hydropower, minimizes NOAKA's carbon footprint. To ensure reliable and safe transmission of electricity to the offshore platforms, Hitachi Energy's solution combines two power quality technologies that have never been used before for this type of application: a high-performance STATCOM called

SVC Light, and thyristor-controlled series capacitors. The MACH control and protection system will enable the two technologies to work in harmony as a single synchronized solution.

"We are delighted that Aker BP has selected our pioneering power quality solution, enabling this vital energy project to be powered with emission-free renewable energy," said Niklas Persson, managing director of Hitachi Energy's grid integration business. "This world-first solution will also enable progress toward mega-scale offshore renewable power installations, offering viable alternative pathways for connecting power from shore with AC over long distances."

"Our ambition is to develop the NOAKA area with a minimum carbon footprint and a prerequisite for this is that the fields are supplied with power-from-shore," said Lars Høier, senior vice president and asset manager for NOAKA at Aker BP. "We selected Hitachi Energy as our trusted technology partner to provide a reliable and flexible grid connection and power quality solution to secure high reliability in our operations."

Hitachi Energy supplied the world's first long-distance power-from-shore installation in Norway in 2005 using its HVDC Light high-voltage direct current technology. Since then, Hitachi Energy has supplied four of the five HVDC power-from-shore installations, all of which supply platforms off the



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The collaboration in joint technology areas aims to provide solutions to the asset life extension challenge. (Courtesy: UL)

Norwegian coast.

MORE INFO www.hitachi.com

INNOVATION

UL, ONYX Insight team up on wind asset life program

UL, an adviser on the technical development, evaluation, and optimization of renewable energy projects, has deepened its collaboration with ONYX Insight, a provider of data analytics and engineering expertise to the global wind industry.

The businesses are collaborating on an expanded life evaluation program, using UL's wind forecasting and structural assessment with ONYX Insight's operations and maintenance expertise and predictive technology to help operators enhance performance — and clean-energy generation — from their maturing assets.

More than 15 percent of wind projects will reach about two decades of operation in 2022. As assets age, they can become less reliable, leaving

operators with three choices to safeguard their investment: repowering, decommissioning, or life extension. By removing uncertainty around crucial maintenance decisions, advanced analysis and monitoring technology are helping to transform the economics of life extension and deliver ongoing revenue for asset owners at an affordable cost.

"When assets near the end of their original life cycles, operators will consider two key objectives: maintaining safety and profitability," said Jeremy Tchou, UL's Wind Advisory director for North America. "We are proud to partner with ONYX Insight to help asset operators achieve these goals using in-house structural analysis and advanced monitoring technology, arming them with the data they need to deliver for their stakeholders. We look forward to continuing our collaboration with ONYX Insight as we drive to support the energy transition through innovative solutions."

ONYX Insight and UL's collaboration includes a review of more than 100 GW of assets globally. It also covers technical advisory services on acquisitions involving turbine technical review, evaluation of target sites, and

operational expenditure forecasts. The businesses have built on their collaboration with recent life evaluation projects involving hundreds of turbines across a range of makes and models.

UL's deep track record of life evaluation work includes structural assessment — including turbine, tower and foundation — to ascertain turbine capabilities and estimates of a turbine's useful life. ONYX Insight's foundation monitoring hardware unlocks additional data streams for analysis, feeding into an informed predictive maintenance strategy and reducing operations and maintenance costs.

"Successfully extending the life of a project can mean reducing the cost of operations in the long-term as the project ages," said Dr. Ashley Crowther, chief commercial officer, ONYX Insight. "With our broad suite of solutions, monitoring the health of the asset from top to bottom, we are delighted to support UL in enabling older wind farms to play their part in the race to net zero."

MORE INFO www.onyxinsight.com

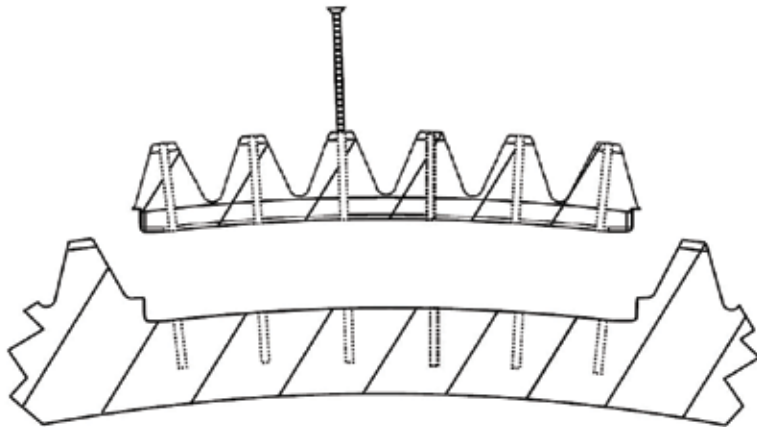
MAINTENANCE

Yaw ring system could extend wind-turbine life

Danish machining firm CNC Onsite has developed an invention for repairing wind turbine yaw rings on site. The patented system could eliminate expensive, time-consuming disassembly of the rotor and nacelle for replacement.

The yaw ring is a crucial component in securing maximum power production from a wind turbine and is complex and costly to replace. Broken and worn teeth can leave operators of older wind turbines with no choice except scrapping them.

"This inspired us to develop a repair method as an alternative," said Søren Kellenberger, sales director, CNC Onsite. "We can now offer a repair service



A diagram of the yaw ring's location on a wind turbine. (Courtesy: CNC Onsite)

for both onshore and offshore at a fraction of the cost of replacing the entire yaw ring, and that makes it viable to keep perfectly good wind turbines operating for longer."

The CNC Onsite method employs a portable precision tool to repair any broken or worn yaw ring teeth. Operated by a specialist engineer, the tool applies the patented method, working at extremely fine tolerances, to remove and reinsert machined teeth. The patent for the system covers the milling process by which the damaged teeth are excised, and the bed created for the new part, as well as its particular insertion method.

"The process we apply when creating new yaw ring teeth for a wind turbine is similar in principle to a new dental crown that is first copied precisely then fitted by a dentist using precision tools," Kellenberger said. "The aim is the same, and it should last for a long time."

The tool has been designed to break down into component parts with a low weight that allows them to be transported in the tower elevator to the work area. After reassembly in the nacelle, the compact tool can be operated in the confined working space around the yaw ring.

Repairs are carried out inside the wind-turbine tower so can be completed irrespective of weather conditions.

"As long as it is safe to travel to and access the wind turbine, we can car-

ry out the repairs," Kellenberger said. "So, there are far fewer days when we cannot work. This is also good for both work schedules and costings."

Mounted at the top of the wind-turbine tower, the toothed yaw ring is a gear that engages with motors mounted on the nacelle to align the rotor blades with the wind. CNC Onsite estimates that turbines on some 5 to 10 percent of wind farms will experience damage to their yaw ring teeth during their service life. Typical causes include unpredictable wind events or uneven loads sustained over time.

Replacing the yaw ring requires the entire nacelle to be detached using a crane and specialist labor – a process that is expensive for onshore turbines and perhaps uneconomic for offshore. Across the lifetime of a wind turbine, maintenance can represent up to a quarter of all costs incurred, and decisions such as choosing a cost-effective yaw ring repair versus replacement are set to become an important trend.

The system developed by CNC Onsite can usually carry out yaw ring repairs within a few days. This reduces downtime, and results in significant CO2 savings.

"We're eliminating the need for manufacturing a new yaw ring and above all the huge logistical effort required to transport a yaw ring to the site, deploy cranes, which is particularly tricky offshore, and replace it," Kellenberger said. "Such an oper-

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James Fisher tackles supply chain challenges with a seasonal charter agreement for a multipurpose service vessel. (Courtesy: James Fisher Renewables)

ation requires a significant number of people and a lot of equipment with all the associated CO2 emissions. With our repair method, this is no longer required.”

The yaw ring repair service offered by CNC Onsite has already been used on a range of turbines in wind parks, both offshore and onshore, since it entered the market in 2019 following months of endurance tests.

MORE INFO cnconsite.dk/en

MAINTENANCE

Gastops launches online subscription service

Gastops announced the official launch of Gastops Connect, an online subscription service that delivers critical equipment condition monitoring and analysis capabilities to those leveraging Gastops’ condition monitoring sensor technology and solutions.

“Gastops Connect provides our customers with a secure, cloud-based monitoring portal that delivers a real-time view of equipment condition,

accessible through any web browser device,” said Gastops President & CEO Shaun Horning. “The platform provides a foundation for the future of integrated health monitoring, enabling Gastops to deliver on our vision of real-time prognostics that combines the expertise of our Equipment Condition Analytics team with the machine intelligence of our sensors and software.”

Gastops Connect collects, processes, and analyzes data from MetalSCAN sensors and combines it with equipment controller data and third-party data to create a real-time view of equipment condition accessible through any web browsing device.

“By combining Gastops Connect with our new MetalSCAN 3500 series sensors, we’re unlocking a turnkey capability for wind-turbine operators to monitor the health of the bearings and gears of any and all turbines across their wind farms,” said Cedric Ouellet, Gastops’ director of energy and industrial.

“And with the ability to integrate third-party data sources and access to our team of experts, Gastops Connect delivers a comprehensive asset management experience which provides the earliest and most reliable indication of component damage and Remaining

Useful Life (RUL) for our customer’s critical equipment,” Ouellet said.

MORE INFO www.gastops.com

MAINTENANCE

James Fisher signs charter agreement for service vessel

James Fisher, a leading provider of marine solutions and engineering services, has signed a charter agreement with Go Marine Group for the use of the Multi-purpose Service Vessel, Go Electra, adding security for customers amid cost and supply chain crunches in the industry. The agreement will see the boat used throughout 2022 by its marine group companies James Fisher Renewables and James Fisher Subtech.

The agreement will see quicker response times and tailored health and safety standards implemented, as well as reliable day rates for customers. In addition, there will be an increase in operational uptime, with a consistent crew and shortened mobilization times between projects, resulting in more productivity and sustainability because of fewer overall transits to shore.

Putting sustainability and efficiency at the forefront of decision making, James Fisher selected the Go Electra following an extensive vessel research and evaluation. The Go Electra was built in 2011 and measures at around 80 meters in length with DP2 capabilities, it has an onboard capacity for 66 crew and passengers. With an established North Sea operating record, the Go Electra will be mobilized in and around UK waters, largely on unexploded ordnance identification with remotely operated vehicles (ROV), IMR activities and air diving projects, core services for both James Fisher Renewables and James Fisher Subtech.

“A seasonal charter like this is a first for James Fisher and signifies our commitment to the UK offshore and North Sea energy sector,” said Paula Crosby, JF Renewables and Subtech



The Vestas order expands the Glacier Sands wind farm. (Courtesy: Cordelio Power)

head of tendering. “We’re delighted to have secured the Go Electra for the season, enabling us to not only lock-in day rates from the offset but also offer expedited mobilization and pass on cost efficiencies for our customers.”

“The Go Electra is the ideal vessel for our project backlog this year, and really cements our position in the market by allowing us to be agile, reactive, and competitive with the flex-

ibility to cover both Air Diving & ROV campaigns and continue to commit to our sustainability goals across the renewables and subsea sectors,” said John Ewen, JF Subtech assets and operations director. “Coupled with our knowledgeable crews and long-standing expertise for the extremes, 2022 is already looking to be a great year.”

MORE INFO www.jamesfisherrenewables.com

MANUFACTURING

Vestas secures order to power Illinois wind project

Vestas recently received a 171-MW order from Cordelio Power to power the Moraine Sands wind project in Illinois. The order includes 38 V150-4.5 MW turbines. This project is an expansion of the 185 MW Glacier Sands wind farm,

commissioned in November 2021, which consists of 43 V150-4.2 MW turbines delivered in 4.3 operating mode.

“Building off the successful commissioning and operations of the Glacier Sands wind farm, Vestas is thrilled to partner once again with Cordelio on the Moraine Sands wind project to collaboratively expand Illinois’ renewable energy footprint,” said Laura Beane, Vestas North America president.

“We offer our thanks to the Vestas team, who have played an important role in our U.S. growth efforts by delivering high quality equipment to our projects in a timely, responsive way,” said John Carson, Cordelio CEO.

The order includes supply and commissioning of the turbines, as well as a 20-year Active Output Management 5000 (AOM 5000) service agreement, designed to ensure performance.

Turbine delivery begins in the fourth quarter of this year. ↘

MORE INFO www.vestas.com

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