CONSTRUCTION

Collett delivers blades to Kype Muir wind farm

Using its Nooteboom triple extendable Super Wing Carriers, Collett recently delivered 78 turbine blades (26 turbines in total) destined for Kype Muir Wind Farm.

Collett's teams undertook the planning and delivery of 494 components including blades, towers, nacelles, drive trains, and hubs required for the development of Kype Muir Wind Farm. The 80-meter hub height towers of the Senvion 3.4MW turbines feature 52-meter blades, and while these are not the largest the company has been appointed to handle, they necessitated the use of its Super Wing Carriers due to the problematic road restrictions and alignments en-route.

Several areas of route modifications were identified ahead of the project — including bridge restrictions — with an emphasis on the Lambhill Road and Brown's Bridge areas on approach to the site. Excluding the loaded wind-turbine blades, each of the components would be loaded to a combination of 3-, 4-, 5-, and 6-axle stepframes, modular low loaders, and clamp trailers for transportation to the site. With the planned route modifications — including removal of vegetation, road signs, and road widening — already having been completed, this did not pose challenge to navigate.

The challenge arose when it came to the transportation of the 52-meter blades, which is where Collett's Super Wing Carriers came into effect. The use of these specialist trailers provided the ability to shorten the body and wheelbase of the trailer while loaded with the use of the bolster arrangement on the trailer deck. Using the features of these Super Wing Carriers, extendable up to 64.3 meters, meant that the proposed access route to the development site became a viable option for this size of turbine.

Proof of this flexibility was demonstrated prior to transport by Collett Consulting creating a 3D model of the loaded vehicle. This then allowed Collett to produce a detailed swept-path analysis video of the blade components, successfully negotiating restricted route sections by manipulating the trailer while loaded.

This in-depth planning allowed Collett to highlight the sections of the route where the steering angle of the Super Wing Carrier's bogie provided extra maneuverability. The challenge was to ensure there would be no contact with any part of the blade or the trailer chassis with the road surface, bridge structures, or buildings when navigating several sections of the route. This is where capabilities of the Super Wing Carriers to raise the trailer height came into action, allowing Collett to raise the height of both the front and the rear of the trailer, resulting in each of the blades oversailing the embankments and stone parapets when crossing the bridges en-route. By employing the capabilities of these trailers, Collett was able to remove the need for further, more costly modifications, and ensure that each of the 78 52-meter blades would safely arrive.

The 18-week delivery schedule that began in July is now complete. Following an agreed timetable of 1.5 turbines per week, Collett systematically transported each of the 494 cargoes from their portside location direct to the delivery site. Working on a multi-port strategy with components arriving at the Port of Grangemouth and King George V Dock, the Collett team has undertaken all ship's discharge and stevedoring duties, port storage, extensive planning and delivery for each complete turbine.

Deliveries to the site, three miles south of Strathaven, South Lanarkshire, are now completed and construction of the wind farm is underway. Kype Muir Wind Farm is the flagship development of Banks Renewables and is expected to be fully operational in early 2019.

MORE INFO www.collett.co.uk

Super Wing Carriers can vary the trailer height, allowing Collett to raise the height of both the front and the rear of the trailer, resulting in each of the blades oversailing embankments and stone parapets when crossing bridges. (Courtesy: Collett)

INNOVATION

Sulzer Schmid slashes cost of drone inspections

Sulzer & Schmid Laboratories AG, a Swiss company pioneering next-generation technology for the inspection of

Based on the compact and flexible DJI M-210 drone, Sulzer Schmid's latest innovation delivers high performance and fully autonomous drone inspections. (Courtesy: Sulzer Schmid)

wind-turbine rotor blades, recently announced it has launched a new highly competitive inspection platform. The company's new 3DX™ HD product has been developed as a cost-effective solution to cope with large volumes of high-definition blade inspections.

Based on the compact and flexible DJI M-210 drone, Sulzer Schmid's latest innovation delivers high performance and fully autonomous drone inspections at a significantly lower cost, compared to its existing 3DXTM Ultra-HD product based on the DJI's M-600 drone.

Thanks to the new capabilities offered by unmanned aerial vehicles, the market for drone-based rotor blade inspections has boomed in recent years.

"Our technology produces high-definition image quality that is superior to any other inspection method," said Tom Sulzer, co-founder of Sulzer Schmid. "Our drone inspections offer a myriad of benefits: They are automated and, therefore, immune to human error, repeatable, and consistent in quality while covering 100 percent of the blade. Most importantly, the fully digital end-to-end process creates a foundation for trend analysis and predictive maintenance."

Depending on the type of inspections and their requirements, wind turbine OEMs, wind asset owners, and O&M service providers will now be able to choose the technology that best suits their needs. Whereas critical inspections, such as end-of-warranty or change of ownership, call for the superior images provided by the 3DXTM Ultra-HD product, regular inspections can now be carried out with great efficiency by the 3DXTM HD platform at a fraction of the cost.

The new 3DX™ HD product combines increased inspection capacity with improved ease of deployment. It offers all the key benefits of autonomous inspection flights, while improving inspection efficiency, handling, and deployment during field operations. It is compact enough to be checked-in as regular luggage for air travel and can be deployed easily on CTV ships for Offshore Wind inspections.

"We are pleased to deliver a new solution that addresses our customers' needs for high-volume and routine blade inspections," said Christof Schmid, co-founder of the company. "We always push the envelope by increasing automation in all steps of the

inspection workflow and by increasing the robustness of our products. We also continue to expand our product range, and we expect to launch our new offshore inspection solution later this year."

MORE INFO www.sulzerschmid.ch

INNOVATION

Bazefield software manages 23 GW of renewable energy

Bazefield has had strong growth in the wind and solar domain.

Bazefield software manages 23 GW on installations across 23 countries. This includes sites in Europe, North America, South America, and Asia.

The system is in use by a range of notable clients including EDF Luminus, ReNew, Brookfield Renewables, ConEdison, Equinor, and more. Bazefield is the state-of-the-art product when digitalizing renewable energy O&M.

The Bazefield software is the most flexible and comprehensive off-the-shelf system in the market. The system is scalable from a single farm to large portfolios, and it captures real-time data, monitors and control assets and sites, includes several tools for visualization, predictions, and analysis based on machine learning and others. Bazefield further supports workflow and task management and provides overviews and operational real-time performance reporting. This also includes flexible dashboard design functionality and support for portable devices.

The Bazefield software is the most flexible and comprehensive off-the-shelf system in the market. (Courtesy: Bazefield)

MORE INFO bazefield.com

INNOVATION

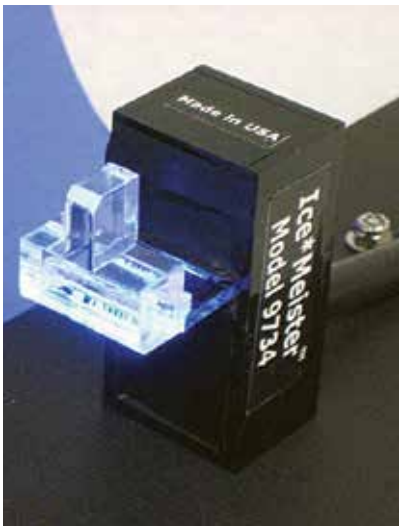
Global distributor, sensor maker modernize ice sensors

Wind Cluster ApS, global distributor of wind-turbine components and accessories, together with New Avionics Corp, leading maker of modern optical ice sensors for industry and aerospace, recently announced the two companies have signed a distribution agreement covering modern ice sensors for wind-turbine manufacturers, operators, and energy companies throughout Europe, China, and India.

In Europe and Asia, Wind Cluster is a one-stop shopping center for turbine manufacturers and operators, offering a wide variety of components and accessories to the global wind power industry. Wind Cluster operates through a network of offices in Denmark, China, and India.

In Florida, New Avionics has developed the Ice*Meister™ line of NASA-tested optical ice sensors for aerospace and industry, where the need is to sense hazardous ice and take corrective action. These are demonstrably the smallest, lightest, most-sensitive ice detectors for wind-power turbines, unmanned aerial vehicles, commercial refrigerators and heat pumps, HVAC cooling towers, radio and TV broadcast towers, autonomous commercial drones, vehicular bridges and overpasses, oil and gas sites, etc.

"Ice detection is a necessity for optimum power production and safety in many countries," said Peter Nyegard Jensen, CEO of Wind Cluster. "Until now, solutions have been complex and expensive. Therefore, we are happy to introduce the products and unique expertise of New Avionics to the industry."



New Avionics has developed the Ice*Meister™ line of NASA-tested optical ice sensors for aerospace and industry, where the need is to sense hazardous ice and take corrective action. (Courtesy: New Avionics)

"New Avionics is extremely pleased to sign this agreement with Wind Cluster for distribution of our ice sensors," said Richard Hackmeister, CEO of New Avionics Corp. "This pact helps turbine manufacturers and operators maximize operational efficiency during icing conditions, at the lowest possible sensor cost. We look forward to a long and productive relationship with the hardest-working distributor of wind-power components and accessories."

MORE INFO www.newavionics.com

MAINTENANCE

U.K. wind firms push investment in masts and monitoring

Dulas, a leading renewable energy consultancy, recently announced its wind monitoring division saw an uptick in work from new and existing clients in 2018, as the business sup-