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Windlab, Vestas partner on world's first utility-scale hybrid



Kennedy Phase I will feature 43.2 MW of Vestas' V136-3.6 MW wind turbines. (Courtesy: Vestas)

A partnership between renewable energy industry leaders has announced the final details of a project that will help accelerate the transition to an energy mix led by renewable energy and aim to provide even more reliable and consistent renewable energy production adapted to energy demand and grid requirements.

Developed by Australia's international renewable energy company, Windlab, with support from Vestas, the global leader in sustainable energy solutions, the innovative 60.2 MW Kennedy Energy Park phase I is the world's first utility-scale, on-grid wind, solar, and battery energy storage project. Designed to supply consistent and reliable renewable electricity that can help meet power demand in Australia, Kennedy Phase I can also shape a path forward for how Australia and other countries can integrate more renewable energy into their energy mix and address grid stability chal-

lenges that have been a traditional restraint to greater uptake of renewable energy.

The project is in Flinders Shire in central north Queensland, Australia, which has world-class wind and solar resources. Kennedy Phase I will feature 43.2 MW of Vestas' V136-3.6 MW wind turbines, 15 MW of solar, and 2 MW/4 MWh Li Ion battery storage, all managed by a Vestas customized control system that will operate the hybrid power plant.

In order to support further hybrid projects in Australia, Windlab, with Vestas, will share the knowledge and experience from building and operating Kennedy Phase I through the Australian Renewable Energy Agency.

"Kennedy Phase I is a first-of-its-kind project in Australia, and it will lead the nation in the deployment of innovative, high reliability renewable energy capable of closely matching network power demand," said Windlab CEO Roger Price.

“We have a great working relationship with Vestas, whose products and service capabilities were instrumental in managing challenging grid connections and compliance, and develop a competitive cost of energy.”

Through the complementary combination of wind and solar energy, Kennedy Phase I can deliver a more constant and demand-driven energy production and increased capacity factor. The Vestas control system will provide the capability for wind and solar to work together as an integrated power plant and comply with grid requirements.

“We are grateful for the opportunity to join Windlab on this project, which places Vestas at the forefront of sustainable energy solutions and is a testament to how we are providing solutions that make renewable energy more cost-competitive and grid compliant,” said Johnny Thomsen, senior vice president of product management for Vestas. “With 35 years of experience in meeting complex grid requirements and developing advanced power plant controllers, Vestas has the foundation to also lead the way in hybrid solutions.”

“Hybrid solutions combining wind, solar, and storage hold a huge potential for Australia,” said Clive Turton, president of Vestas Asia Pacific. “Kennedy Phase I has the potential

to leverage Australia’s abundant renewable energy resources and be a giant leap forward for the country in reaping those resources, while ensuring a consistent and reliable electricity supply. Kennedy shows that Vestas, together with visionary partners like Windlab, can provide the solutions.”

Vestas also will provide a 15-year Active Output Management 4000 (AOM 4000) service agreement, which includes a full-scope service package for the wind turbines as well as scheduled maintenance for the solar panels, battery storage, and electrical systems.

A consortium between Vestas and Quanta Services will deliver the engineering, procurement, and construction of the project, which is expected to be in operation by the end of 2018.

This project is planned to be the first phase of Windlab’s larger 1,200 MW Kennedy Energy Park, which seeks to deliver significant benefits to north Queensland and Australia in reduced emissions and sustainable energy generation. ↘

Source: Windlab

For more information, go to www.windlab.com



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HTL Group's i-calibrate makes calibration simple



i-calibrate uses QR codes on each tool to offer instant, paperless, real-time access to calibration and test certification for their entire inventory. (Courtesy: HTL Group)

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Global OEM HTL Group has launched its new in-house service innovation: i-calibrate.

Offering complete certification traceability, i-calibrate ensures that the user has complete control of calibration and test services via a simple-to-use portal.

Using QR codes on each tool, i-calibrate offers users instant, paperless, real-time access to calibration and test certification for their entire inventory.

Complementing HTL's existing calibration and testing service, the new software presents a paperless, digital calibration and test process as well as an automated reminder feature; i-calibrate offers users 24-hour access to the most important calibration and test information including certificates and automated reminders, from any smart device.

"Being part of an industry where new developments are constant and fundamental to improving customer experience means that our No. 1 priority

is to develop new product and service solutions to make our customer's lives easier," said Stephen Jones, CEO, HTL Group. "With the launch of i-calibrate, we aim to bring a complete calibration and test service to market which ensures that there is nothing we can't take care of for our customers. Instant access to important calibration and test information including automated reminders allows the customer to control and manage their own calibration and test maintenance at ease."

I-calibrate works by printing QR codes on each calibration label that records all current certification, providing a unique way for the user to access certificates from any smart device for their complete controlled bolting fleet, 365 days a year, 24 hours a day, from any location. ↴

Source: HTL Group

For more information, go to <http://www.htl-worldwide.com/>

Moog offers improved safety of leading-edge pitch system technology

Moog, a designer and manufacturer of high-performance motion control products and solutions, has earned a safety certification from TÜV Rheinland for the new Moog Pitch Servo Drive 3.

TÜV Rheinland is a global testing service provider and specialist for functional safety. Moog's new Pitch System 3 is responsible for guaranteeing the safe operation of wind turbines. The feathering safety function supplied by the Moog Pitch System 3 Servo Drive alters a wind turbine's blade pitch at the rotor hub to minimize the torque applied by the wind, avoiding excessive speed of the turbine. As a result, the pitch servo drive is classified as a safety component.

"The safety built into Moog Pitch System 3 helps wind-farm operators in three important ways," said Dr. Tobias Theopold, technology development manager business unit wind for Moog. "The technology avoids hazards from the wind turbine and therefore lowers the insurance fees for wind-farm operators. As the safety-related development of Moog Pitch System 3 required an IEC 61508 and 13849 compliant V-model process including intensive failure insertion testing, this also boosts reliability of the overall product, which of course lowers downtime and reduces the levelized cost of energy."

Moog established the benchmark for safety with its previous versions of the Moog Pitch Servo Drive when they were certified by TÜV Rheinland in 2012. With the Moog Pitch Servo Drive 3, Moog has received independent validation that this product also will perform outside the



Moog Pitch System 3: Axis Box including Pitch Servo Drive 3 and Pitch Capacitor Module. (Courtesy: Moog)

specification at extreme environmental conditions and in cases of unexpected failure.

Along with certifying the safety of its new servo drive, Moog improved the architecture of Pitch System 3 to meet IEC 61508 and ISO 13849, standards governing wind-turbine safety. First, Moog's engineers provide a safety function referred to as Safe Feathering Run (SFR), which automatically moves and stops a turbine's blades in the feathering position. Second, Moog included a Safe Stop function called STOP1 to arrest the motion of an individual blade during manual movement of the blades. The Safe Stop function meets the ISO 13849 standard that addresses the requirements that blades must not perform an unintended move when people are working inside the wind turbine's hub.

"To protect a wind turbine against

overvoltage from the grid and lightning strikes, we included a new component called the Moog Pitch Interface Module," Theopold said. "Our new interface module is a firewall to protect the blades against extreme environmental conditions and so-called common cause failures (CCFs). These failures are most critical because they can affect each of the pitch axes and therefore can put turbine safety at risk."

Moog also asked lightning protection specialist DEHN to test Pitch System 3 (including its servo drive and interface module) inside a high voltage lab, subjecting the system to multiple lightning strikes reaching more than 260,000 amps. Afterward, the system was still fully operational and performed a Safe Feathering Run. ✎

Source: Moog

For more information, go to www.moog.com

Vaisala's Triton cuts wind-measurement costs in Canada's cold climate

Canadian renewable energy developer Sequoia Energy Inc. has successfully used Vaisala's Triton Wind Profiler remote sensing unit to secure financing and cut wind measurement costs in central Canada, where sub-zero temperatures, snow, and ice regularly disrupt measurement campaigns. The device, deployed in tandem with a shorter, 60-meter meteorological (met) tower, has enabled Sequoia to identify sites for further project development and reduce vertical wind-shear extrapolation uncertainty without installing costly hub-height met towers.

As the North American wind market continues to mature, project developers are increasingly looking to access more complex and remote locations to take advantage of untapped wind resources. However, these regions' climates — as well as the increasing height of wind turbines — often raise a number of challenges for wind measurement requiring innovative and efficient means of resource assessment.

"You can only put met towers in certain places determined by consultants, landowners, and, of course, the project terrain," said Dan Cox, manager of business development at Sequoia. "Using the Triton in combination with a shorter met tower gives us better representation of hub-height wind speeds, while avoiding the cost of putting up a hub-height met mast at 100 or 120 meters. The cost of such a tower is significantly higher than the cost of a Triton and can be difficult to maintain even in the best conditions, let alone the challenging environments of a cold climate measurement campaign. Using the Triton in this way allows us to quickly gather hub-height measurements and lower the uncertainty of our long-term energy predictions, which improves our chances of securing financing and at favorable terms."



Vaisala's Triton Wind Profiler remote sensing unit. (Courtesy: Vaisala)

OVERCOMING OBSTACLES

Cold climates such as those in central Canada have the potential to wreak havoc on measurement campaigns. Tall met towers can collapse from ice buildup, mechanical sensors can freeze, and many remote sensing systems that are not engineered with power consumption in mind require constant maintenance and refueling.

While installing smaller met towers can reduce costs, it is then often necessary to extrapolate wind-flow conditions at taller wind-turbine hub heights, introducing uncertainty into the data. However, by pairing a Triton with a 60 meter met tower, Sequoia has been able to lower the uncertainty of this vertical shear extrapolation, with positive results at the project financing stage.

In addition, the Triton's easy mobility allows Sequoia to deploy and redeploy its fleet of Triton units at a number of locations. Along with the system's low power consumption and proven robustness in cold conditions, Vaisala's SkyServe package, which provides secure online access to data and technical support in the field, helps the company further control its measurement campaign budgets.

GROWING ADOPTION

Vaisala is an expert in wind measure-

ment, project assessment, and energy forecasting. Its extensive Remote Sensing Revolution report outlines how the use of remote sensing technology by developers, investors, operators, and consultants has evolved within the wind industry. The report also illustrates further examples of how remote sensing is being used in cold climates worldwide. For example, supporting developers in the northern reaches of Finland.

"In particularly challenging conditions, such as the arctic winters of central Canada and Scandinavia, the Triton offers an efficient and cost-effective means of collecting hub-height wind measurements," said Pascal Storck, director of Renewable Energy at Vaisala. "Robust enough to withstand the ice and snow and continue collecting accurate wind data, the device itself can easily be moved from site to site reducing the need to install expensive hub-height met masts. Its robustness also means it is increasingly being used in cold climates worldwide, and our Remote Sensing Revolution report will highlight this growing trend." ↵

Source: Vaisala

For more information, go to www.vaisala.com/energy