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Spinner anemometer technology can now be used to measure power curves in accordance with IEC standards

The iSpin technology of Danish-Swiss wind turbine optimiser ROMO Wind can be used to cost-effectively measure the power curve of every single turbine in a wind farm. This has now been confirmed by the International Electrotechnical Commission (IEC), which has published a new clarification sheet. The document describes the calibration procedure for norm-compliant use of the precise patented measuring technique directly at the spinner of a wind turbine.

Together with the nacelle anemometer, iSpin has been a part of the international standard IEC 61400-12-2 for measurement of the absolute power curve since 2013. The recently published clarification sheet for wind tunnel calibration of the spinner anemometer enables the application of iSpin in compliance with standards as a more cost-effective and accurate alternative to previous measurement technologies.

Jan Nikolaisen, Co-CEO of ROMO Wind, explains: “The measurement results that we gain with our spinner anemometer iSpin show significantly less variation than the results of all other technologies – met mast, nacelle anemometer and LiDAR included. Unlike conventional methods, the iSpin measurements are undisturbed by terrain effects and wakes from other turbines in the wind farm.”

Prior to 2013, the only industry standard for power curve measurement was the norm IEC 61400-12-1. This method requires the use of expensive met masts. Due to the high costs, measurements compliant with the IEC standards are usually performed only at one single turbine during the commissioning of a wind farm. The determined power curve is then transferred by calculations to the other turbines without further adjustments or any measurement of the different conditions seen by other turbines.

“Until the introduction of iSpin, owners of wind farms have needed to trust that all turbines of one type are delivering the same power as the one tested turbine“, says Nikolaisen.

The spinner anemometer technology is the first technology which enables the comparison of turbine characteristics such as the power curves. Up to now, wind data has usually been measured behind the rotor on the wind turbine’s nacelle. The downside of this technique: turbulence from the rotor can lead to inaccuracies. The iSpin system uses proven ultrasonic technology to measure the wind where it first hits the turbine – directly at the spinner. In this way, operators gather accurate information on the wind conditions in front of the rotor. This enables them to check whether their turbines are aligned for the best possible yield. At the same time, the data allows for optimised wind farm management and load reduction, which prolongs the total life of the turbines.

The iSpin technology was developed by the Technical University of Denmark (DTU) and has been continuously tested since 2004. iSpin is a wind measurement technology which is not dependent on a specific manufacturer, and is designed for permanent installation.

About ROMO Wind:

ROMO Wind AG is a Danish-Swiss technology company supported by renowned investors and shareholders such as Yellow & Blue and ABB. ROMO Wind specialises in optimising the productivity of wind turbines, accurately measuring on-site wind conditions and reducing turbine loads. The company uses the patented iSpin technology to reach this goal. ROMO Wind has its headquarters in Zug, Switzerland, and has regional teams in Denmark, France, Germany, Great Britain, Ireland, Italy and Spain, as well as a sales cooperation with UpWind Solutions in USA, Canada and Mexico.

Further information about the company and the iSpin technology as well as footage for free editorial use at www.romowind.com

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