

Zug, Switzerland, 29 September 2016

## **iSpin Guardian approach provides transparency in wind farm performance monitoring**

**ROMO Wind's iSpin Guardian approach allows wind farm operators to monitor and actively manage the performance of every wind turbine in a wind farm at any time during its lifetime, independent of site complexity. The iSpin Guardian approach, which uses patented spinner anemometer technology, allows operators to compare the performance of individual turbines in a wind farm for the very first time. ECN (Energy research Centre of the Netherlands) has evaluated the approach.**

ECN is a globally-renowned renewable energy R&D institute and founding member of the industry-wide acknowledged MEASNET association. In its report, ECN confirms that the iSpin Guardian approach “based on the presented cases is well-suited to monitoring the relative performance of the turbines in a wind farm, which can be used to identify potential performance issues and which needs to be further validated.”

In most cases today, performance measurements on wind farms are limited to one or two nominated turbines with free wind sectors, defined flat areas and using dedicated met masts – which does not allow accurate assessment of performance of all turbines in a wind farm. The systemic advantage of the iSpin Guardian's spinner anemometer is that it measures the wind where it first hits the turbine – directly at the spinner.

Dr. Jan Willem Wagenaar, Project Manager and Researcher at ECN, says: “As the wind industry grows more mature and therefore more demanding, new and innovative means are appearing which overcome identified limitations. In ECN's view, the iSpin Guardian approach is a promising new and innovative method for assessing the performance of all turbines in a wind farm.”

Jan Nikolaisen, CO-CEO at ROMO Wind, adds: “Today, only the iSpin technology enables a holistic overview of the performance of individual turbines and the wind farm itself. The current industry standard of using a met mast is too expensive, impractical and imprecise for the industry's needs. With the iSpin Guardian approach, we offer a tool that can cheaply and repeatably provide transparency in wind farm performance.”

**ECN also evaluated the potential of the iSpin Guardian approach to be used in warranty contracts between wind turbine manufacturers and wind farm operators.**

- The potential **benefit for the operator**: iSpin Guardian offers more means to validate the power performance of the individual wind turbines in the wind farm and the wind farm itself.
- The potential **advantage for the wind turbine manufacturer**: more attractive warranty conditions could be granted, providing an advantage over competitors.

According to ECN the key aspect is the 360° iSpin based power curve and ECN advises to further validate this aspect for industry-wide acceptance.

Nikolaisen says: “In order for the iSpin Guardian approach to be adopted in warranty contracts, we will initiate independent studies in the near future to demonstrate that the 360° iSpin based power curve is not affected by any kind of wake or terrain conditions. Further proof and evidence will increase acceptance in the whole wind industry and lead to incorporation of the iSpin Guardian approach into internationally acknowledged guidelines – and thereby help to make this unique technology the new industry standard.”

**ROMO Wind at WindEnergy in Hamburg, 27–30 September 2016: Hall A1, Stand 425.**

**About the iSpin technology:**

Until now, wind speed and direction have usually been measured behind the rotor on the wind turbine's nacelle, where turbulence can lead to inaccuracies.

ROMO Wind's iSpin system uses proven ultrasonic technology to measure wind where it first hits the wind 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 tested continuously from 2004 until it came onto the market in 2013. iSpin is a wind measurement technology which is not dependent on a specific manufacturer, and is designed for permanent installation. The iSpin system was incorporated into the international IEC 61400-12-2 standard for measuring the absolute power curve.

**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, reducing loads and accurately calculating on-site wind conditions. The company uses patented iSpin technology to this end. 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 on ROMO Wind and the iSpin technology as well as image material for free editorial use:  
**[www.romowind.com](http://www.romowind.com)**

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