
NORVENTO SEALS INDUSTRY-FIRST IEC 61400-1 DESIGN COMPLIANCE

nED100 100kW turbine becomes first of its size to achieve certification according to large wind technical standard

17th December 2014, London – Medium-scale wind turbine manufacturer Norvento has completed the TÜV SÜD design evaluation process for its nED100 100kW turbine. In doing so it has set an industry benchmark for technical excellence by becoming the first company to achieve IEC 61400-1 certification for a turbine of this size.

The small and medium wind turbine industry has grown to play an integral role in many rural and industrial applications and is now of significant value to the UK economy. In this context, Norvento believes the industry has a duty to respond by setting quality standards on a par with those seen in other matured sectors.

Furthermore, in light of the additional hurdles posed by planning, grid connection and tariff depression, it is becoming increasingly critical to learn lessons from the utility-scale wind sector by demonstrating a commitment to maintaining the highest possible technical and operational standards.

Nevertheless, while carrying out design assessment is standard practice for multi-megawatt turbines, medium turbine manufacturers have not typically dedicated the required time and resources to the procedure. Ultimately, this may leave turbine owners and landowners vulnerable to unanticipated performance issues in the long-term.

The TÜV SÜD Design Evaluation of nED100 is, therefore, a key quality-assurance milestone for the turbine, which is the product of a 5-year research and development programme that commenced in 2008, and has been in operation since 2011.

During the extensive 2-year certification process, TÜV SÜD validated every single system and component of nED100. The turbine underwent the simulation of 1000 unique loads, covering every eventuality likely to occur during day-to-day operation. The data accumulated during this process was then used to verify the structural strength and lifetime of each component.

This technical testing was accompanied by a stringent safety validation, which analysed the potential effects of a wide range of internal and external conditions and resulted in a detailed calculation of the safety levels of the system as a whole, based on the performance of each individual component. The lightning protection system was validated to the same standard required for utility-scale wind turbines.

Finally, all installation, commissioning and maintenance manuals were revised according to international standards.

In carrying out this process, TÜV SÜD verified that the turbine was in compliance with the latest safety and engineering standards. In December, Norvento was issued with a Provisional Statement of Compliance, confirming this achievement.

The design evaluation complements recent testing by other accredited entities validating the electrical safety, the electromagnetic compatibility and the power quality of nED100, and will be followed by further field and bench tests to certify the power curve, load measurement and structural properties of the blade.

“While power curve certification is undertaken for some of the most recognized medium wind turbines, the IEC 61400-1 design evaluation sets a standard far beyond the usual level,” said Miguel Hoyos, Technical Director, Norvento.

“nED100 boasts design quality, safety and reliability equivalent to modern large-scale wind turbines, underlining our unrivalled commitment to engineering excellence and setting a benchmark for the improvement of standards throughout the UK and European distributed wind sectors.”

“The design evaluation is essential to ensure the safety and durability of wind turbines during their whole life cycle,” added Alexander Trunz, Head of Department, Wind Turbines at TÜV SÜD.

“With our provisional statement of compliance we confirm that the design of the wind turbine nED100 meets the requirements of IEC 61400-1. The same standard is applied to the assessment of large, multi-megawatt turbines.”

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About Norvento

Headquartered in Spain and with an expanding international footprint, Norvento is a pioneering renewable energy developer, operator and manufacturer.

In 2012, the company generated a total output of 366,711MWh. This builds on a 30-year reputation for design, construction, operation and engineering excellence.

Capitalising on an already well-established research and development programme, in 2008, the firm began a five year development programme with the ambition to manufacture and build an entirely new product line for the distributed wind market.

Following an extensive testing programme, the 100kW unit, now known as nED100, was launched into the UK market in October 2013. It is targeted at key international markets and introduces a fresh phase of successful large-scale wind innovations into medium-scale distributed wind.

The turbine, that will be initially sold and deployed in the UK, tackles key market inefficiencies and brings big wind benefits to the medium-scale distributed wind space. For more information, please visit – www.norvento.com