Canadian grid moves from masts to Lidars on operational wind farms

Leading wind development company Boralex installs grid-compliant Permanent Met Lidars, integrated in to Siemens wind turbines.

19 July 2018: In response to IESO grid compliance, ZephIR 300 wind Lidar replaces need for operational met mast on Port Ryerse Wind Farm, Ontario, Canada.

With more than 700MW of wind projects, Boralex command a majority share of the Canadian wind market. The company's latest project, Port Ryerse Wind Farm, sees the deployment of a ZephIR 300 wind Lidar in accordance with grid operator IESO's requirement for permanent measurements on site while further benefiting from improved health and safety practices in addition to the very low visual impact of the Lidar when compared to a traditional tall metal tower.

The wind farm consists of Siemens 3MW SWT3.0-113 with 99.5m hub height, de-rated at 2.5MW. The Lidar measures from just 10 metres up to 200 metres providing the necessary wind speed and direction at 50m, hub height and 110m as well as temperature, pressure and humidity - all provided from the single device.

In Ontario, Canada, IESO requires that market participants maintaining wind farms from 10 to 100MW have at least one local meteorological measurement device, such as Lidar. Olivier Parent, Project Manager – Development, at Boralex stated: "The cost of Permanent Met Masts is close to the cost of a Permanent Met Lidar but when you include the additional met mast land lease for 20 years, the mast's visual impact and higher maintenance costs, the Lidar becomes our preference."

"We chose the ZephIR 300 wind Lidar because of its proven strengths when operating in our Canadian environments where the atmosphere is particularly clear and sites can be high altitudes" continued Parent.

Matthew Smith, responsible for ZephIR Lidar's activities in Canada, commented: "The IESO Data Requirements for wind farms are forward looking and allow for technologies such as Lidar to be utilised. More and more grid operators are following suit and the demand for Permanent Met Lidars grows annually. We continue to work hard with wind farm operators to seamlessly integrate ZephIR 300 in to their data and SCADA systems."

Permanent Met Lidars allow for power performance measurements, noise assessments, insurance / outage claims and for improving local forecasting for energy trading. Once on site the Lidar can further assist with providing wind information during any component exchange or maintenance on the wind farm that requires crane lifting. SCADA integration further allows Lidar data to be directly incorporated in to the turbine OEM's Meteo system.

About ZephIR Lidar

ZephIR Lidar provides industry-leading wind lidar products, ZephIR 300 and ZephIR DM for wind energy and meteorological applications. These lidars deliver accurate wind measurements in both onshore and offshore applications at measurement heights across the full range swept by the blades of modern wind turbines. With more than 10 million hours of operation in the field and over 1000 deployments (and counting), ZephIR Lidar has pioneered the use of lidar in the wind industry. The company is proud of the many world firsts it has achieved with customers

including: upwind measurements from a turbine nacelle, turbine wake studies, offshore deployments of both fixed and floating wind lidar, an industry-accepted validation process, re-financing and re-powering of a wind farm, successful demonstration of measurement accuracy in a wind tunnel and total wind project financing from a lidar without need for a met mast.

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