



Sustainable Engineering Worldwide

PRESS RELEASE

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SgurrEnergy's Galion Lidar produces first ever image of multiple offshore wakes

SgurrEnergy's 2nd generation wind Lidar, the Galion, has been used to produce the first image of multiple offshore wind turbine wakes ever captured by a scanning Lidar device.

The unique image was revealed by the wind Lidar research group at the Stuttgart Wind Energy department (SWE) at Stuttgart University in Germany, which is using SgurrEnergy's Galion Lidar in a groundbreaking offshore wind energy research campaign being conducted at the Baltic-1 wind farm in the German Baltic Sea.

The campaign, run by SWE and funded by the German national environment department, aims to learn about controlling and improving offshore wind farms' efficiency and availability and the durability of their wind turbine generators (WTGs).

It is the first time an entire offshore wind farm has been observed simultaneously by SCADA, long range Lidar and load measurements on certain selected WTGs. This will allow measurements of the wind resource and the WTGs' wakes and loads to be directly related to each other, something that has previously never been done in the industry.

In order to conduct this groundbreaking research, SWE is using a G4000 offshore Galion wind Lidar, pioneered by renewable energy consultancy SgurrEnergy. The Galion is providing essential data on WTG wakes, park wakes and wind profiles, which are dependent on water temperature and air layering.

Jan Anger of SWE said "At present SgurrEnergy's Galion Lidar is the only wind-scanning device in the industry that fits the measurement requirements for the Baltic-I research project. We already conducted research last year to verify and validate Galion Lidar against met mast readings and the device showed very satisfactory measurements and very good hardware availability. The capability to visualize the Galion's data of the turbines' wakes within the entire Baltic-1 wind farm is outstanding."

Dr Peter Clive, technical development officer, at SgurrEnergy, said; "Our Galion Lidar has produced one of the first direct measurements of the full extent of wakes of offshore WTGs as opposed to indirect measurements obtained via model approximations and production deficit figures. This has huge implications for the wind energy industry. The use of the scanning capabilities of 2nd generation Lidar will allow a greater understanding of the effects of wind on WTGs, more so than traditional met mast technology. The data from these scans can be used to enhance wind flow models and allow more accurate predictions. Why model the wind flow across a wind farm when we can simply measure it? Now that we have the tools and techniques to answer key questions about offshore wind conditions, and acquire project critical information, we no longer have any excuse to persist with obsolete rules of thumb and approximations that have prevailed in the industry until now."

The use of SgurrEnergy's Galion on the Baltic-I offshore wind energy research campaign will continue until August 2013, with the entire project coming to completion in 2014.



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Ends.

Notes to editors:

SgurrEnergy was founded 10 years ago by technical director Ian Irvine and implementation director Steve McDonald with the aim of building the world's largest renewable energy consultancy. Headquartered in Glasgow, Scotland, SgurrEnergy has international offices in China (Beijing), Canada (Vancouver), India (Pune), France (Paris), Ireland (Wexford), the US (Portland), Brazil (São Paulo), Germany (Hamburg) and Norway (Stavanger).

SgurrEnergy is part of Wood Group, an international energy services company, and operates as part of the Wood Group Kenny business unit.

Stuttgart Wind Energy (SWE) is part of the Institute of Aircraft Design at the Faculty of Aerospace Engineering and Geodesy at the University of Stuttgart in Germany. The SWE started its research on the use of Lidar technology in wind energy applications back in 2007. The department now has seven specialist researchers who work specifically on Lidar issues such as ground, nacelle and buoy based wind measurements on and offshore, Lidar assisted turbine control as well as Lidar based power performance and load measurements.

Wood Group is an international energy services company with \$6bn sales, employing more than 41,000 people worldwide and operating in 50 countries. The Group has three businesses - Engineering, Wood Group PSN and Wood Group GTS - providing a range of engineering, production support, maintenance management and industrial gas turbine overhaul and repair services to the oil & gas, and power generation industries worldwide. www.woodgroup.com

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