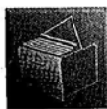


Aiding design

Better data gathering



The wind energy technology department at Sandia National Laboratories in

America has developed a device, the Accurate Time Linked data Acquisition System (ATLAS II), which it says can provide all of the information necessary to understand how well a machine is performing. The technology builds on several years' experience with an earlier Sandia model. ATLAS II is capable of sampling a large number of signals at once to characterise the airflow, operational states, and the structural response of a wind turbine. It is described by Sandia as small and highly reliable, using off-the-shelf components and with the ability to operate continuously. It has lightning protection on all channels. "The system provides us with sufficient data to help us understand how our turbine blade designs perform in real-world conditions, allowing us to improve on the original design and our design codes," says Jose Zayas, the project leader, who has been working on ATLAS II since its inception in 1999.

Last year the ATLAS II team completed a project with GE Energy and the US National Renewable Energy Laboratory (NREL) to monitor the performance of a GE wind turbine and will soon start new monitoring projects with Texas Tech University. The GE Energy/NREL/Sandia collaboration involved testing a 1.5 MW, 80 metre tall turbine with a rotor diameter of 70.6 metres. The turbine was equipped with four ATLAS II units, collecting a total of 67 measurements, including 12 to characterise the airflow, eight to characterise the operational state of the turbine, and 24 to characterise the structural response.

The system collected data continuously, 24 hours a day. All data from the different units were merged into a single data stream at the base of the turbine where the ATLAS II software compressed and stored it onto a local computer. During a five-month trial, more than 17,000 data records were collected, providing 285 GB of data.

Load management

Wind into cold storage



A European R&D program called Night Wind aims "to use industrial cold chambers as a virtual battery for

storing wind production during off-peak demand, especially at night time," says Mónica Aguado of Spain's national renewable energy centre, Cener, one of the project participants. At night, electricity demand is low and wind generation can be high, complicating the task of matching supply and demand. Over the next two years, Night Wind will work on ways of offloading generation into large cold-stores, mainly operated by major food chains and air and sea ports. By using power during off-peak demand, cold systems can benefit from cheaper night time electricity and be turned off during much of daytime peak demand. The project is led by the Netherlands organisation for applied scientific research, TNO. In September it will begin using a large cold store in Holland as a test bed with Dutch TSO ESSENT Energy Trading providing grid architecture expertise. The other members are Denmark's R&D centre Risø and Bulgaria's Technical University of Sofia, which are carrying out studies and simulations with Cener. Night Wind, says Aguado, holds the promise of an immediate and economic new tool for load management.

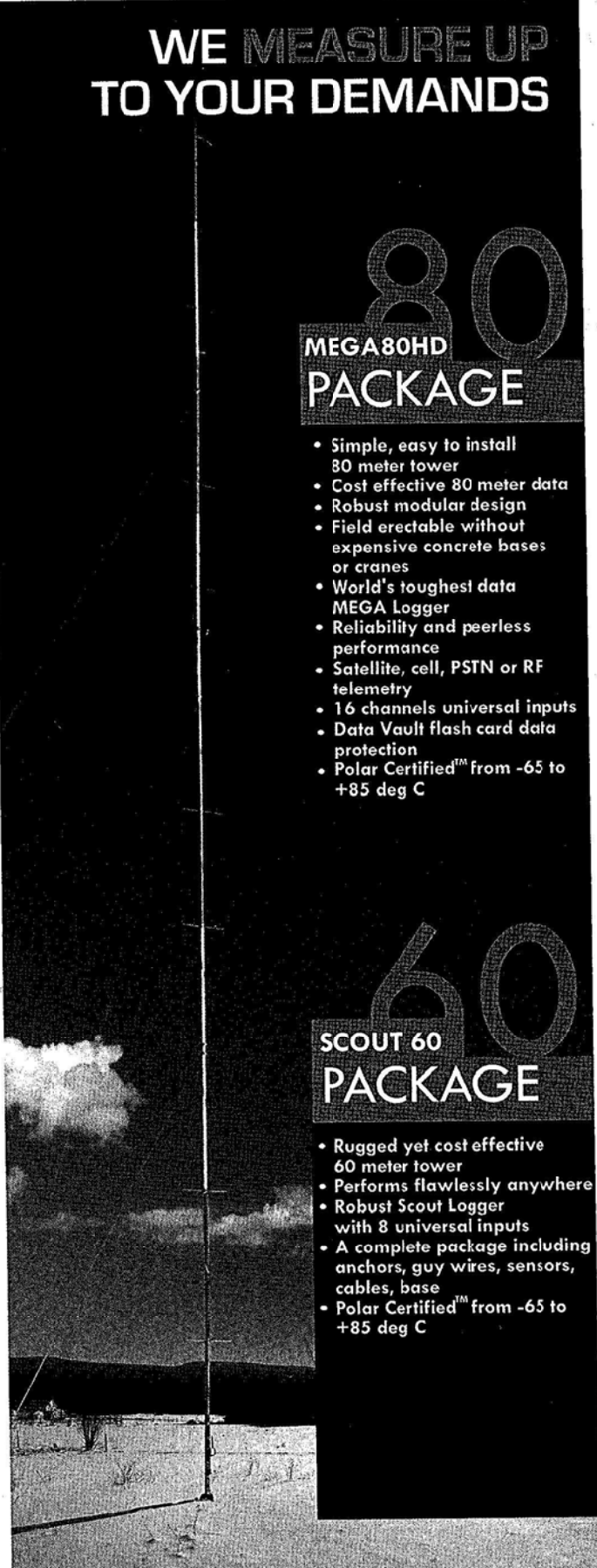
WE MEASURE UP TO YOUR DEMANDS

80
MEGA80HD
PACKAGE

- Simple, easy to install 80 meter tower
- Cost effective 80 meter data
- Robust modular design
- Field erectable without expensive concrete bases or cranes
- World's toughest data MEGA Logger
- Reliability and peerless performance
- Satellite, cell, PSTN or RF telemetry
- 16 channels universal inputs
- Data Vault flash card data protection
- Polar Certified™ from -65 to +85 deg C

60
SCOUT 60
PACKAGE

- Rugged yet cost effective 60 meter tower
- Performs flawlessly anywhere
- Robust Scout Logger with 8 universal inputs
- A complete package including anchors, guy wires, sensors, cables, base
- Polar Certified™ from -65 to +85 deg C



AAT inc. (formerly Ohmega Group inc)
Advanced wind assessment technologies

Call us
800.492.5428 #23 (North America)
418.368.5425 #23 (Worldwide)
www.aat-solutions.com

