



News Release

Date 18 December 2008

DIUS supports TUV NEL Wind Energy Metrology Centre

Glasgow based measurement and testing specialist TUV NEL has been awarded a contract by DIUS (Department for Innovation, Universities and Skills) in support of its National Wind Energy Metrology Centre. In addition to support for larger wind farm sized machines, this new funding will help pave the way for small and micro wind turbines leading to the wider adoption of domestic electricity microgeneration, significantly reducing national CO₂ emissions.

The Centre will provide the underpinning metrology and knowledge transfer that will allow the wind industry at large to establish new test procedures and methodologies. Already work is underway in support of the Microgeneration Certification Scheme (MCS) which was introduced in 2006 to verify the performance, reliability and safety of wind turbines.

"The Centre will provide the wind industry as a whole with a unique facility to assess wind turbine design, performance and environmental considerations at all levels," explains Alistair Mackinnon of TUV NEL. "More efficient and better designed turbines are opening up wind energy to a mass market. However, consumers need to have confidence that what they install will be safe and suitable for their needs and will actually operate as specified. The Centre will also be of benefit to the large turbine market as it will help to verify the claims of manufacturers and ensure consistency across the industry."

Wind powered microgeneration is predicted to become common place over the next few years, with turbines being installed on thousands of existing domestic and commercial buildings, as well as being incorporated into many new builds. It has been estimated that by 2050 small scale wind generation could reach 15GW of electricity and account for 6% of the UK's total electricity demand thus reducing the country's CO₂ emissions by about 4%.

At present buyers of small scale wind turbines have to largely rely on manufacturer claims. To address this, BERR (The Department for Business, Enterprise and Regulatory Reform) established the MCS to

evaluate products and installers against robust criteria for microgeneration technologies, providing greater protection for consumers and ensuring that Government grant money is spent in an effective manner.

Large scale wind farms are carefully planned around the meteorological and environmental conditions of their individual locations, but domestic installations will rely on manufacturer claims and the expertise of the installer. The new centre at TUV NEL will verify manufacturer claims and ensure that consumers are given accurate specifications, which can be easily compared through MCS certification.

The National Wind Energy Metrology Centre builds upon the proven reputation of TUV NEL to test and assist in the development of wind power technology. The company's Myres Hill wind turbine test site has been in operation since the early 1980's and has been a focal point for the development of both technology and standards for the past 25 years.

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1) TUV NEL is a leading international technology services organisation. With a successful track record of more than five decades delivering world class innovative solutions to difficult problems we provide services, solutions and technology to clients across many industries including oil & gas, government, manufacturing, renewable and sustainable energy on a local and a global basis. It is part of the TÜV SÜD Group, the leading international service organisation.

2) TÜV SÜD AG is a leading international service organisation catering to the business segments INDUSTRY, MOBILITY and PEOPLE. With over 13,000 employees, it is represented worldwide at more than 600 locations. As partners in our customers' processes, our specialist teams ensure that technology, systems and know-how are optimised, thus strengthening our customers' global competitiveness.

TUV NEL wind turbine background

TUV NEL has made significant contributions to the development of renewable energy technology including the development and testing of large-scale hydroelectric equipment, pioneering wave energy research and performance evaluation of modern wind-energy technology. Wind energy systems are an area of particular expertise where TUV NEL has the capability to test or model complete systems or individual components.

Myres Hill wind turbine testing facility

TUV NEL has operated a wind turbine test site at Myres Hill 10 km from its offices in East Kilbride since the early 1980's.

Key features of the site are:

- Clean wind flow conditions allowing all operating modes to be tested

- Test laboratory buildings available
- Unpopulated area permitting research and development and prototype testing of wind turbines
- Long-term annual mean wind speed of 7.9 m/s at an elevation of 10m above ground
- The site is supplied through an 11 kV grid connection at power levels of up to 2MW.

TUV NEL measurement and testing services for small wind turbines

A comprehensive measurement and testing capability can be accessed by designers, manufacturers, researchers, technology developers and end users of small wind turbine systems.

- Wind turbine power performance evaluation
- Wind speed measurement and site assessment
- Acoustic measurement
- Vibration measurement
- Stress and Strain measurement
- Durability

Conformity Assessment

TUV NEL assists with the assessment of conformity to IEC Standards for proposed wind turbine designs.

Having contributed to the development of many of these standards, TUV NEL provides authoritative advice and guidance to manufacturers on compliance with standards including:

- BS EN 61400-2: 1996 Safety of Small Wind Turbines
- BS EN 61400—11: 2003 Acoustic Noise Measurement Techniques
- BS EN 61400—12: 1998 Wind Turbine Power Performance Testing
- DD IEC TS 61400—13: Measurement of Mechanical Loads
- BWEA Small Wind Performance and Safety Standard

Guidance on CE compliance and assistance with the formulation of technical files is also provided.

Designs for specific turbine tower and mounting arrangements can be evaluated to verify system integrity.