



# Case Study: Installation Made Easy

Middleton on the Wolds, Yorkshire - home to a Shanghai Aeolus 10kW Vertical Axis Turbine, now controlled and connected to the local electricity network using **TOTUS WIND 3-10**.

## Plug & Play

Grid connection of the turbine could not have been easier. Arriving at site already programmed for use, the inverter achieved grid connection of the turbine without the need for any additional components. Not only did this significantly reduce the cost of the necessary electrical equipment, but it also reduced the installation time significantly – “it was a bitterly cold day with snow on the ground so getting in, done and out in double quick time was much appreciated” said installer Anders Howard of RBB Electrical. “The alternative would have resulted in us being at site much longer to install and wire-up extra components and then to program the turbine power curve”.

## Protection included

Regardless of wind speed conditions, Totus performs as an autonomous turbine control and power conversion solution. Core to achieving this are the many protection features employed in its design. Integrated over voltage protection and automatic disconnection devices ensure that no harm come to the inverter due to turbine over-speed. Combined with the aerodynamic behaviour of the blades, this also ensures that all generated power can be exported regardless of winds speed. Meanwhile a loss of mains results in no damage to the system. At the grid, integrated protection to G83/1 ensures safe operation at a site where 250V grid voltage is typical whilst isolation via transformer is not required.

## Reliable & Efficient

The unique active rectifier enables current stresses to be reduced throughout the system to maximise reliability and conversion efficiency; the latter being particularly important at Middleton due to the modest nature of the winds and the need to utilise every Watt available. In the generator alone, an improvement in efficiency of 2% has been achieved, further reducing thermal stresses on the winding by some 30% to make a distinct advancement in achieving high turbine lifetimes.

