

Showtown wind farm  
courtesy of Trust Power  
& Suzlon

# Wind measurement and energy yield services

## Why is it so important?

The wind measurement and analysis process is one of the most important aspects of site development, as it is the key enabler for:

- determination of wind resource and energy yield
- turbine selection
- achieving finance

Inaccurate or incomplete wind data, inappropriate data handling and inadequate data analysis can result in wind farms being:

- designed ineffectively, leading to unnecessary costs and lost opportunity for generation and revenue
- designed to non-optimum turbine specifications
- delayed and losing a competitive edge.

In summary, wind measurement and data analysis are the cornerstone of identifying and mitigating risks and for realising the potential rewards from a project.

## Benefits

Using skilled engineers we continuously retrieve and analyse data which offers the following benefits.

Key Benefit	Due to
Minimum client input	Wind Prospect's comprehensive management of the measurement programme minimises client involvement. Our team organise the mast and equipment installation, data retrieval and analysis, and energy yield assessment.
Greater data recovery	Proactive monitoring, early detection of potential failure and immediate response minimises data loss. We perform continuous data verification and equipment fault identification. Wind Prospect follows strict quality control and data storage standards.
Comprehensive understanding of wind resource	Wind data obtained from a measurement programme is correlated with long term measurements from meteorological stations near to the site. Our team surveys stations and checks the suitability of data.  Wind Prospect uses state-of-the-art software and modelling tools to carry out site analysis.

## How we can help

Wind Prospect has been developing, constructing and operating wind farms since 1988. The Group has installed and managed over 100 wind monitoring masts.

From the extensive experience we have gained in all manner of environments and conditions, we have developed effective procedures and methodologies to offer valuable services in:

- Wind monitoring campaigns
- Wind data management
- Wind resource and energy yield assessments
- General wind advice and consultancy



Photo courtesy of Angus Reid; www.angus.reid.ukgateway.net



## Our services include

### Met Masts – Installation and Maintenance

For those clients that want to focus on their core business, whilst not having to deal with a wind measurement campaign and the monitoring equipment, Wind Prospect can organise:

- Site selection and planning application for a met mast
- Installation and equipment configuration
- Equipment maintenance and inspections during measurement campaign
- Health and safety aspects

We are pleased to offer bespoke quotations, taking into account site location, equipment used and configuration required.

### Data Retrieval and Data Verification

The frequency of data retrieval will depend on the logger and its configuration. If the logger has remote access and is email-enabled, the data can be automatically received on a regular basis. The verification process will consider a number of variables, including:

- wind speed time traces for all anemometers
- wind speed correlations between various anemometers
- wind direction time traces for all wind vanes
- wind direction correlations between wind vanes
- battery time traces

Any faults or ongoing anomalies would be immediately reported to the mast contact person for remedial action. The information would be stored in a file containing consolidated verified data.

A monthly report is produced containing monitoring equipment specifications, monthly performance and overall summaries for all data during the reporting period, including wind roses, wind speeds, directions, temperatures, pressures, diurnal patterns and battery status.



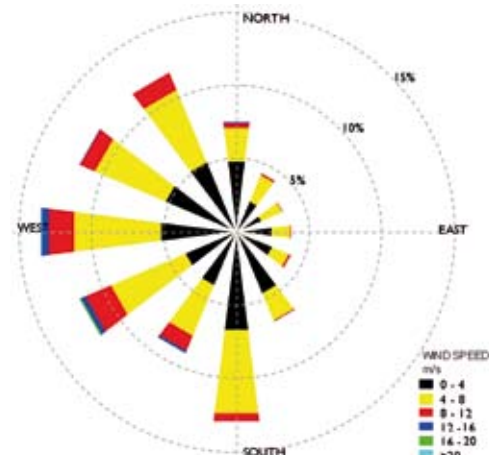
### Wind Resource Analysis and Energy Yield Assessment

Wind Prospect prepare digital terrain models using purchased elevation datasets and digitised roughness data (from aerial photographs and data collected from site). Once the basic data analysis and statistics have been carried out, we prepare:

- Correlations based on measured mast data and long term data sets.
- Long-term wind regimes for the site
- Wind shear, turbulence and extreme windspeed analysis (if data available) at the mast location

For Energy Predictions, our team provides:

- Wind flow models using WAsP and CFD
- Micrositing and energy predictions for turbines using wake models
- Assessment of losses and uncertainties and calculation of overall energy yield values



### Contact wind resource experts:

**Paul Stangroom**  
 7 Berkeley Square, Bristol, BS8 1HG, UK  
 +44 (0)117 925 7798  
 paul.stangroom@windprospect.com

[www.windprospect.com](http://www.windprospect.com)

**Adrian Oakey**  
 PO Box 389, Level 1, 20 Beach Road,  
 Christies Beach, SA, 5165 +61 (0) 8 8384 7755  
 adrian.oakey@windprospect.com.au

[www.windprospect.com.au](http://www.windprospect.com.au)

V2 (2008/09)



INVESTOR IN PEOPLE



ISO 9001  
 ISO 14001  
 OHSAS 18001  
 BUREAU VERITAS  
 Certification

