Selecting wind turbine sites

Challenge

Temporis Wind, a developer, funder and operator of single wind turbine projects, needs to provide accurate, reliable and fast site assessments to its customers. This includes confirming average wind resource assessments to enable financial proposals to landowners, and providing wind statistics to protect landowners’ warranties.

Temporis Wind needs to assess the wind resource at its development sites; enabling banks and funders to invest without having to measure on-site wind for some considerable time. Temporis Wind previously utilised less reliable databases. However, there were drawbacks of using this data since it was proven to be consistently overestimating wind speeds. To make investment decisions, a more accurate and robust method of assessing sites was required.

Solution

Virtual Met Mast™ (VMM) is a scientific model based on our advanced atmospheric weather forecast system, designed to capture and analyse wind information to generate an accurate, long-term wind climatology at a specific site and turbine hub height. VMM Plus combines wind estimates with on-site mast observations to provide revised wind statistics with higher levels of confidence.

Temporis Wind commissioned us to complete VMM reports (initially just at site screening level) for over 200 potential sites. At some sites, the nature of the land and the proximity to the coast made it harder to have high confidence in the wind resource. In these cases Temporis Wind recorded onsite wind data which, in combination with VMM wind estimates, produced a more accurate output.

Benefits

Where VMM estimated wind speeds at levels where projects would not have been financially viable, Temporis was able to immediately halt work on around 40% of its initial 200 sites. This saved the company thousands of pounds on further feasibility studies and planning application costs which can typically amount to £50,000.

Using VMM has enabled Temporis Wind to complete orders for wind turbines in 2012 from several manufacturers and saved Temporis Wind both critical time and money.

“No matter what stage of the process, you can be sure the Met Office will be playing a critical role in providing a level of certainty around the wind resource that is so important when investing in wind turbine projects.”

Ian Johnston, Chief Operating Officer
Temporis Wind