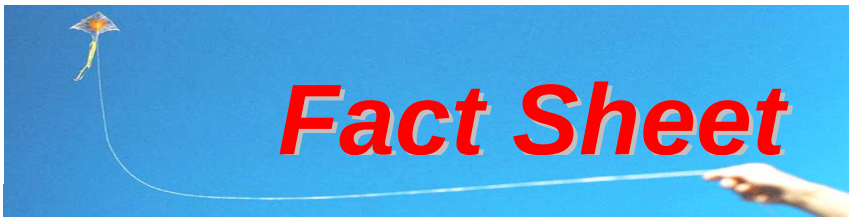


Wind Energy

People have harnessed energy from the wind for thousands of years. Today modern wind turbines are advanced technology used for renewable electricity production.

Wind turbines can be constructed and operated individually or grouped together to form a wind farm.

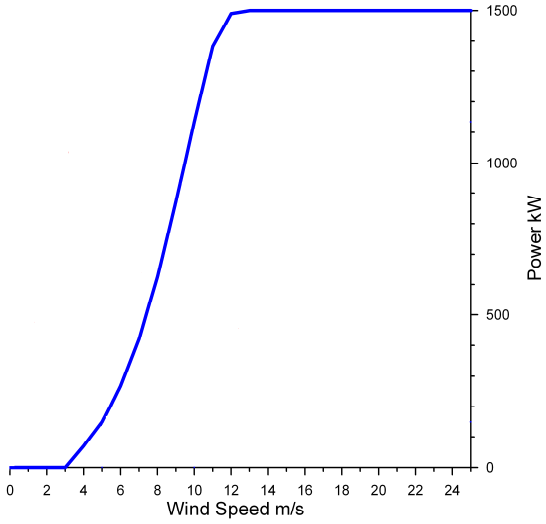
Is a site windy enough for a wind farm?

For a wind farm to operate efficiently and be commercially viable, the site requires a strong and consistent wind.

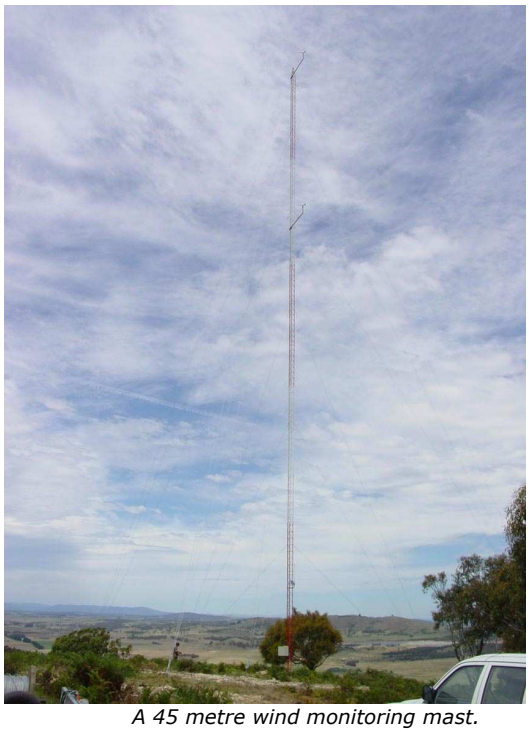
Wind monitoring is carried out to assess the nature of the wind resource. Usually monitoring occurs on sites which are considered potentially suitable for a wind farm. Monitoring towers are sometimes placed in other locations to gather information to be used in assessment of the regional, as well as local, wind regime.

Generally, a site with an average wind speed of 7 metres per second (25 km/hr) is considered a wind resource with potential for a project.

In the graph below the blue line shows an example of the electricity (kilowatts) that can be generated by a typical wind turbine at different wind speeds. As the wind speed increases so does energy production.



A flagging tree is a sign of strong winds



A 45 metre wind monitoring mast.

How is a wind assessment made?

Wind anemometry equipment is mounted on the mast to collect data on wind speed and direction. Temperature, pressure and humidity data are also collected at some masts.

The monitoring towers log this data which enables an assessment to be made of the capacity and consistency of the wind resource.

Assessment of the wind includes analysis of local wind data from monitoring masts, as well as regional information from other sources, such as the Bureau of Meteorology weather stations.

Generally data for a period of between 1 – 3 years is required depending upon the information already available

What else is important besides wind?

Other technical factors which determine suitability of a site are options for connecting to the electricity grid, ground conditions and access to the site. Environmental factors such as flora and fauna, landscape values, cultural heritage values are also important as is community feedback.

Consideration must be given to all these factors so that a wind farm meets environmental and planning needs whiles being economically viable for investors.

For more information on the above or any of Acciona Energy's projects please contact us on free call 1800 283 550.

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