

Wind Generation Systems

We provide a wind energy system that is not only highly efficient and strong enough to withstand gale force winds, but one that is quiet, compact and visually striking. Each system (2.5kW, 3kW and 3.5kW) will have an identical generator, shaft and blades, but will differ in the lengths of the spokes.

Specifications

Main structural components:

- Turbine – composed of three blades, six arms that connect the blades and the shaft, and a shaft (centre post), which connects the arms and the generator. This component converts kinetic wind energy into mechanical rotational energy.
- Generator – a low-speed direct-connected permanent magnet synchronous generator that converts the rotational mechanical energy of the turbine rotor into electric energy. It produces electricity from the rotation of the turbine rotor after it converts potential energy in the wind into electricity
- Power electronics including the inverter, controller and diversion (dump) load – these are the technologies associated with the efficient conversion, control and conditioning of electric power by static means from its available input form into the desired electrical output form. The inverter is extremely innovative, as it is tailor-made and programmed specifically for the VAWT, but can be configured to accept additional energy sources (e.g., solar, micro-hydro), creating a hybrid renewable energy system.

Other characteristics include:

- Controlled electro-mechanical brake – assembled inside the generator
- Micro-vibrations of the blades for “de-icing” effect
- The turbine top has provisions for installing a lightning rod
- Optional batteries can store or provide energy based on the consumer’s use.

For more information about our VAWT, feel free to download the specification sheet .

More Information about this system, see the article in [Renewable Energy Access](#)