FUTURENERGY

Wind Turbine Installation Keeps MS Sufferer Warm

A keen commitment to environmental matters following the birth of his grandson and a desire to ensure that his wife, an MS sufferer, is kept warm at all times particularly during periods of mains electricity failure at his rural home, has prompted Bromsgrove resident Derek Matthews to become one of the first installers of a unique new low-cost high-power wind turbine.

Launched in June 2006, the new FuturEnergy 1KW turbine is designed to overcome the drawbacks of poor response, low-power output and high-cost associated with all currently available domestic wind power systems.

Recently awarded the accolade of providing 'Most Power per Pound' in a comprehensive survey of small-scale wind turbines by the specialist renewables website www.bettergeneration.co.uk the FuturEnergy system is designed to generate real electricity from a light breeze onwards – and over 1KW in a stiff breeze (at wind speeds of 8.5 – 12 metres/sec) - and with a cost of just £695 for the basic turbine provides an average payback period of around five-years.

A consultant at the facilities services and energy management company Dalkia, Derek installed the turbine to provide a back-up power source to cover periods when the normal electricity supply to his home is cut-off during severe weather.

As a multiple sclerosis sufferer, his wife Anne, feels extreme pain when cold and uses an electric blanket every day of the year. The wind turbine together with

a compact battery bank that stores the electricity generated, ensures that power is always available to run the electric blanket, other essential appliances necessary for Anne's general comfort and the central heating system, whilst also, at other times, reducing considerably the family's daily energy consumption.

In addition to its emergency application, the turbine forms part of a comprehensive domestic renewable energy system integrating with motor driven solar water heater panels, all controlled by a sophisticated computerised building management system of Derek's own design.

Suitable for installation by non-professionals using commonly available tools and materials, the FuturEnergy turbine is mounted on a six-metre pole situated in a remote part of the Matthews' one-acre garden chosen for its unobstructed air flow. A bank of four 12-volt deep cycle batteries housed in a nearby shed stores the electricity prior to its distribution to the house as one 24-volt circuit and two 12-volt circuits.

Both 12-volt supplies are converted to standard domestic 240-volt AC (alternating current) by the use of 1,000-watt and 600-watt inverters to power electric sockets and a series of 11 and 15-watt fluorescent lamps, whilst the 24-volt DC circuit is fed to the kitchen to power a kettle and coffee maker originally designed to work in lorries.

The advanced building management system ensures that none of the electricity generated by the turbine is wasted. With priority given to maintaining the charge in the batteries, any excess electricity is used to power a series of specially modified freezers and fridges. When the wind is particularly strong and significant amounts of power are generated, the freezers are programmed to run in quick-freeze mode effectively storing the wind energy as extra cold.

Any additional surplus electricity is used to assist the solar panel in pre-heating the water feeding the hot water cylinder. As a final initiative should an excess of hot water then be produced, an alarm sounds prompting the manual diversion of the water for bathing purposes, or for use with a dishwasher and washing machine both modified to run from the hot tank only.

Inclusive of the turbine, second-hand storage batteries and inverters, mounting pole and all necessary fittings and other materials, the total

cost of the wind power system was £1019 providing an anticipated payback period, based on current electricity tariffs, of just 4.9-years.

“The turbine provides peace of mind that even when a power interruption occurs, my wife will always enjoy a pain reduced sleep in a warm bed and house,” comments Derek, “and it’s impossible to put a price on that.”

“My neighbours think the wind turbine is great; one finds it immensely relaxing to watch, whilst a second would like to install a larger one on his own property. Everyone is impressed by the turbine’s looks and its almost silent operation.”

With the turbine completed, Derek is already planning further energy saving initiatives with the ultimate aim of becoming completely energy self-sufficient by his retirement in five-years including the installation of further wind turbines, solar cells, waste heat reclamation and ground source heating.

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