

Grid Connected Solar PV, Thermal & Wind Turbine Heath & Reach in Bedfordshire



Description

A grid connected 1 kWp solar PV array, small scale 300W wind turbine and solar thermal hot water system have been installed and commissioned by Aylesbury based **Ardenham Energy Ltd** in Heath & Reach, South Bedfordshire. It is one of the first properties in the UK to include all 3 renewable technologies, and the first to source generation equipment from organisations with manufacturing facilities in the UK.

The installation was undertaken following planning approval by South Bedfordshire District Council in April 2006. The electricity generated from the PV array and wind turbine is synchronised with the grid supply and will be used to supply clean energy to the property. Excess energy will be exported to the grid for use elsewhere. The evacuated tube solar thermal system provides hot water to the cylinder within the property.

The 300W turbine (output at 11 m/s) is almost silent in operation and will generate around 300 units (kWh) of greenhouse gas free electricity each year, equivalent to about 10% of the properties electricity usage. The 1kWp PV array will generate 800 units+ per annum equivalent to 25% of the properties electricity consumption. The 2 collector array within generate about 60% of the properties hot water requirements.

- 6 no 170Wp PV Modules manufactured by Sharp (UK) in Wrexham.
- 2 no LaZer2 evacuated tube collectors and control system manufactured by Solar UK Ltd.
- 300W Stealthgen™ Turbine designed and manufactured by Eclectic Energy in Nottinghamshire.
- Ardenham Energy Ltd designed® turbine control system
- PV & Wind turbine Grid synchronising inverters.
- ac & dc control switchgear and cabling and trunking.
- Hilti injection mortar masonry anchor bolt mounting system.
- G83 Compliant electricity distribution grid interface.

Ardenham Energy Ltd is an engineering contractor certified under the UKMCS Low Carbon Buildings Scheme for grant aided projects (www.lowcarbonbuildings.org.uk). The company has extensive renewable energy engineering project experience and can provide a full service for wind systems, solar PV (electric), solar hot water systems, ground and air source heat pumps and backup power systems. These can be for domestic, governmental and commercial and non commercial buildings in the Home Counties and London region.

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