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Case study **The Garside Family**

“It’s great to be able to see where your energy is coming from.”

Peter Garside



In September 2004, The Garside family from Hertfordshire chose to power their home with an electric sunstation®.

This photovoltaic (PV) installation consisted of two arrays, covering 25m² of roof space. The sunstation® is easily adapted to almost any type of roof, taking only a day to install.

In its first year this generated 2,930 kilowatt hours (kWh or units) of clean, inflation proof electricity. According to Energy Savings Trust, the average household consumes 3,300 kWh per year. Since their sunstation® was installed the Garside family have become suppliers of electricity, consuming just 2,600 kWh a year, which is less than they produce. This has allowed them to sell their excess production back to their electricity supplier and feed it into the national grid. During the night the Garsides can still buy electricity as usual from their electricity supplier.

Mr and Mrs Garside were inspired by the RSPB to make their building more environmentally friendly. “Ideally we would like to be totally self sufficient; but like many others we realise that this is difficult and perhaps unrealistic. We like the thought that we’re placing less pressure on scarce resources though”, says Mrs Garside.

“We wanted PV because it’s a very practical solution to do our bit for the environment. A PV installation is also a very simple structure and very low maintenance. And we get more value from it than other solutions such as solar thermal.” Adding value to their home, they saw it as a financially viable solution, especially with a significant grant available from the DTI.

solarcentury advised the Garsides both on procedures for planning and grants, and the right technology solution for their building. Initially the family was advised that their home would not be able to produce the maximum amount of solar energy as it doesn't have a south-facing roof and so their sunstation® was installed with half the panels on an east-facing roof and half facing west. A 15% reduction in generated electricity was expected, but the sunstation® still provides more energy than is consumed by the family.



Their success can be attributed to a changing attitude towards energy consumption. In their first year with solar power, the Garsides used 16% less energy than previous years as they "became much more aware" of the way they use electricity and took "simple steps to economise". In 2004, before their installation, the Garsides used 3000 kwh a year, decreasing to 2,570 kwh in 2005, and 2,600 in 2006.

Mrs Garside adds: "Our lifestyle has not changed significantly since we've started to save energy. We now simply switch off our gas boiler in the summer and use the immersion heater for hot water. We

use energy saving light bulbs, switch off lights when not in the room and just think sensibly about when we need to use electricity. We also have grey water collectors to save water".

The family believe it's the sense of ownership that's changed their attitude towards energy. A display meter shows the family how much electricity is generated and the associated emissions offset. The Garsides' sunstation® has to date prevented over 2.5 tonnes of CO2 from entering the atmosphere. This is the equivalent CO2 savings of seven individuals if everyone reduced their emissions by 12.5% before 2010 as recommended by Koyoto.

"It's great to be able to see where your energy is coming from. I suppose it's just about being more aware, and taking personal responsibility instead of relying on the government to solve everything – you can take power into your own hands! We're really happy to see PV becoming a popular choice for homeowners. We just need look at Europe for inspiration - Germany has come a long way in that respect", said Mr Garside. In 2005, Germany installed over 800 MWp of PV, the equivalent of 320,000 solar roofs. The UK installed only 0.6% of this in the same year.



Technology	Solar PV
Installation Type	Pitched roof
System size (kWp)	3.80
Forecast electricity generation / year (kWh)	2,900.00
Panel area (m2)	25.00
Building integrated	No
CO2 saving / year (kg)	1,647.2
Energy produced (kWh)	5,800.00
Date of last energy reading	2006.01.01
Type of project	Residential



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