Department of Energy & Climate Change

Domestic RHI
Case study – Fast facts

Technology type:	Air source heat pump
Equipment manufacturer:	Dimplex
Equipment model:	A-class
Capacity:	16kW
Installer:	Grenergy

Sussex family warms up to new heating system

Air Source Heat Pump lowers energy bills and warms the house more efficiently

Scenario

Thirty years ago, Roy Powel converted an old barn with sweeping views of the countryside into a four bedroom house for his growing family. Located off the gas grid in West Sussex, the house was unable to use a standard gas boiler for heat and hot water. Roy decided to install a liquid petroleum gas (LPG) boiler for space heating and an AGA to heat their water. At the time, the LPG system was efficient and inexpensive, but 25 years later that was no longer the case. The boiler ran at only 65 per cent efficiency and as the price of LPG increased, so did the family's heating bills.

As a specialist in renewable heating systems, Roy had an in-depth understanding of the heating options available for his property. In 2009, he looked into installing an air source heat pump but found that the systems on the market weren't yet suitable for his property. Using technology similar to that found in a fridge, air source heat pumps (ASHP) take heat from the air and then bring it up to a higher temperature. The heat created is then pumped into radiators, under-floor heating, and can also be used to heat water. The heat pump is installed outside the house and doesn't require an indoor boiler.

Roy also researched ground source heat pumps (GSHP), which take heat from the ground and convert it for use around the home. The system requires a network of pipes to be laid underground, and it was for this reason that he decided against it.

"For years I had been interested in installing a renewable heating system to replace my old inefficient one, but the technology just wasn't up to speed," says Roy. "Over the past decade or so, renewable heating technology has developed significantly. There are more options on the market than ever before and we knew that we could potentially save money in the long run by laying out for a new system.

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Although there were other renewable options available, we felt that the ASHP was the easiest to install, the most cost effective and provided the best value for money. Overall, it was the best fit for our property."

Easy installation

It usually takes between three to four days to fit. Grenergy Ltd, in which Roy was a founding member, installs renewable technologies and in December 2013 the Grenergy team set about preparing the radiators prior to installing the heat pump on his property. Then in one day, the team disconnected the house's old heating system. The next morning they got started on hooking up the heat pump, and by the afternoon it was up and running. Their quick work meant that the family was without heat for only one night.

A network of oversize traditional and low temperature fan-assisted radiators now runs through the house. The radiators are warm to the touch throughout the day, rather than being either very hot or cold like they can be with a traditional system. The heat pump also supplies the family's hot water, which ended their AGA's days as a water heater.

"My wife and I are thrilled with our new ASHP system," says Roy. "There has been a terrific improvement in our overall comfort in the house. We are able to keep the house warmer for less money, and I am no longer concerned about keeping the house at a low temperature for fear of sky-high bills."

How I benefitted

Roy plans to apply to the Government's Renewable Heat Incentive (RHI) scheme scheduled to be launched this spring. The RHI is part of the Government's commitment to increasing the UK's renewable energy use. It provides homeowners with long-term financial support for installing renewable heating instead of a fossil fuel system. As part of the application process, homeowners must have a Green Deal Assessment carried out to gauge the property's energy efficiency.

Roy estimates that his RHI payments will come to £1,100 per year for seven years, which is a total payout of £7,700. That sum will contribute to the purchase and installation cost of the ASHP, which cost £11,000.

In addition, Roy has calculated that he will save around £1,800 a year as a result of installing the ASHP. Meanwhile, a photovoltaic system installed in the house also contributes to lowering the family's energy costs.

"The introduction of the RHI scheme has given homeowners like me the confidence to invest in a new renewable heat system," says Roy. "Knowing this went a long way to convincing us to install the ASHP system. Overall, it was less hassle with bigger rewards than we expected, and we would recommend that others in a similar situation consider upgrading to an ASHP on their property."

To find out more and apply for the Domestic RHI Renewable Heat Incentive for households and homeowners or to book a Green Deal Assessment:

- Call the Energy Saving Advice Service on **0300 123 1234** (England and Wales) or **0808 808 2282** (Scotland)
- To receive free and impartial advice visit: **www.energysavingtrust.org.uk**