



Department of Energy & Climate Change



Domestic RHI Case study – Fast facts

Technology type: Air source heat pump

Equipment manufacturer: Daikin

Equipment model: Altherma ERLQ006CAV3

Capacity: 5kW

Installer: Blue Flame (Cornwall) Ltd.

New heating system keeps rural West Cornwall homes warm

Air source heat pumps revolutionise liveability
of housing association properties

Scenario

Coastline Housing Ltd owns and manages close to 4,000 properties, which are a mix of general needs, sheltered and affordable rent, with the majority located in West Cornwall, extending to the Lizard peninsula. A significant number of the homes are in rural locations and approximately one third are off the gas grid. Coastline understands that heating can be a major strain on its tenants' budgets, particularly during the winter months, and pro-actively carries out fuel poverty surveys. Together with its partners, it keeps detailed records of the age and condition of each property's heating system.

For a number of years Coastline has embraced renewable heating technology and installed air source heat pump (ASHP) systems as budgets have allowed. In 2013, it decided to replace the heating systems in 30 individual three-bedroom properties with ASHPs. Using technology similar to that found in a fridge, ASHPs take heat from the air and then bring it up to a higher temperature. The heat is then distributed through radiators or under-floor heating, and can also be used to provide hot water. Each of the properties targeted was off the gas grid and their tenants struggling with fuel poverty.

"We need to make the best use of the resources we have and aim to help the largest number of people possible," said Ralph Retallack, Energy Efficiency Projects Manager at Coastline Housing. "The majority of these properties used oil-fired boilers, with the remainder on solid fuel systems or electric storage heaters. A number of these tenants could not afford the cost of an oil delivery and had asked Coastline to cap their supply. Instead they used portable electric heaters to warm their property, often heating only one room. This meant that they were not as comfortable as they should be, which we know affects well-being and health. As well as worrying about our tenants, we also had a strong business case for updating the heating system, to avoid problems with damp and other issues that insufficient heating can cause to the fabric of the property."

"We have found that the new ASHPs have dramatically improved our tenants' living conditions."

Ralph Retallack, Energy Efficiency Projects Manager, Coastline Housing



Getting the installation right

Coastline chose to install 5kW Daikin ASHPs, having previously installed them in other properties. It participates in a procurement group with other housing associations in the South West, which assists in making the systems more affordable. Before installation works began, Coastline upgraded the houses' wall and loft insulation where necessary, and received funding from the Government's ECO programme, which supports the installation of energy efficiency measures in low-income households and areas. Coastline then worked with installers Blue Flame to put in the new systems, in consultation with the tenants. Installation for each ASHP took around a week, but tenants did not have to move out while the work was carried out. In the properties that previously used electric storage heaters, Blue Flame installed new central heating radiator systems, whilst in the homes that ran oil-fired boilers it upgraded the size of the radiators.

Coastline started the project in October 2013 and completed the 30 properties by the end of March 2014. Tenants received instruction on how to get the most from their new system encouraging them not to turn it on and off, but rather to allow the system to control itself through the thermostat. Further advice, including home visits by an engineer are available as required to assist with the operation of the system. ASHP heating systems run at a considerably cooler temperature than fossil fuel alternatives and give off a more consistent ambient heat.

"We have found that the new ASHPs have dramatically improved our tenants' living conditions," said Ralph. "From experience, we know that it's imperative to get the installation right from the outset to avoid future problems and for the system to run most efficiently. We wanted to get the new systems installed before the depths of winter and thanks to our installers we managed to achieve this for the majority, prioritising those with capped oil supplies."

Cost savings

Coastline plans to apply for the Government's Renewable Heat Incentive (RHI), which launched spring 2014. 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 (except self-builders) must have a Green Deal Assessment carried out to measure its energy efficiency.

Ralph estimates that Coastline will receive annual payments of £900 per property for seven years. This will go a long way toward contributing to the £8,000 to £9,000 installation cost for each ASHP system. Tenants will also see reduced heating bills. The ASHP runs on electricity and Ralph estimates that the bills will come to between £65 and £130 a month depending on usage.

"The air source heat pumps have made a dramatic improvement to our tenants' living conditions," says Ralph. "The Coastline ethos is great homes, great services, great people. We are a forward-looking landlord and installing affordable and efficient heating systems is part of that. Renewable heat is good for us and good for our tenants. The Government funding is definitely a good incentive to install renewable heating, which goes some of the way to making it more affordable."

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

- Call the Energy Saving Advice Service on **0300 123 1234** (England and Wales) or Home Energy Scotland on **0808 808 2282** for free and impartial advice
- For further information and guidance documents visit:
www.ofgem.gov.uk/domestic-rhi