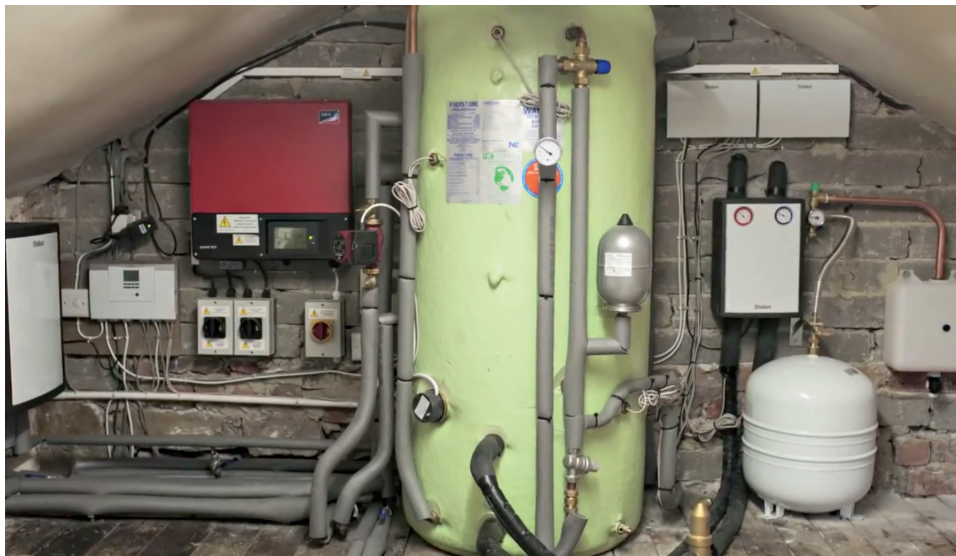


The MacArthur Project: **Derbyshire**



Building type:

Cottage

Technology used:

- High efficiency boiler ☒
- Air to water heat pump ☒
- Solar thermal ☒
- Solar PV ☒
- Intelligent Control System ☒
- Oil boiler ☒

Installer:

Renewable Incentives
www.renewableincentives.co.uk

PROJECT BACKGROUND

- Older stone-built rural property
- Current heating: oil boiler
- Objectives: To upgrade aged property with renewable heating solutions and maximise energy efficiency
- Vaillant aroTherm air to water heat pump; auroTherm solar thermal panels; Solar PV*
- Installed as a hybrid solution with existing oil boiler

Annual fuel saving

£1,612.50

Total fuel saving
(over 7 years)

£11,287

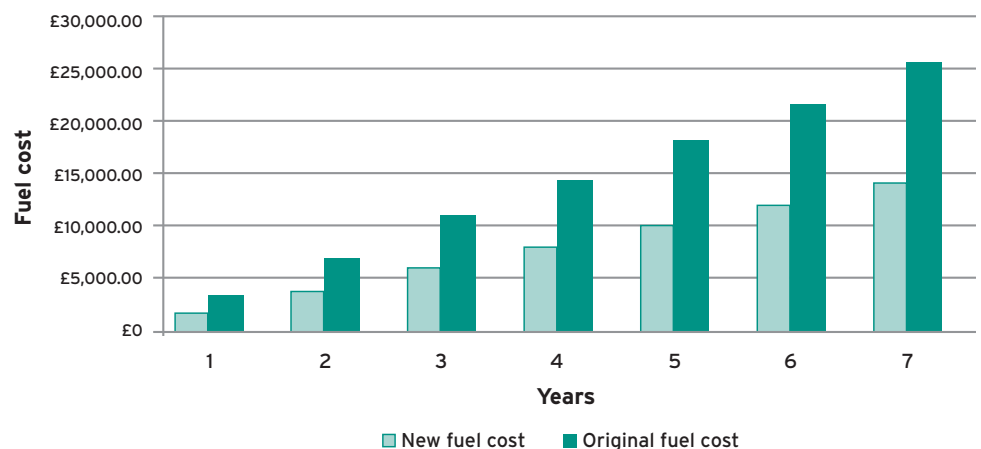
RHI cashback
(over 7 years)

£7,406

Annual carbon saving

**5 tonnes
per year**

Fuel cost over 7 years



SYSTEM SPECIFICATION

'Mixing the old and the new'

After witnessing the benefits of solar water heating systems while visiting Australia, Dr Glynn MacArthur wished to upgrade the heating performance at his rural stone-built property and make use of new renewable heating technologies for a greener and more energy efficient way of meeting his heating and hot water needs.

Local home energy specialist Renewable Incentives recommended a technology solution that would combine Dr MacArthur's existing oil boiler with modern renewable Vaillant technology. Initial surveys concluded that a single Vaillant aroTherm air to water heat pump would need to be supplemented to provide for all the home's heating and hot water demands.

A hybrid and fully integrated solution to also include solar thermal and solar PV*

technologies that would work alongside the heat pump and oil burner, and overseen by Vaillant's VRC 470 Intelligent Control System, was the perfect answer to meet Dr MacArthur's requirements. Installing the technologies would also ensure he was eligible to access revenue from the government's various incentive schemes, which have been designed to encourage the take up of renewable technologies.

The hybrid solution ensures maximum energy efficiency for the overall heating and hot water system, with the intelligent control system continually determining the most appropriate and cost-effective heat source based on a variety of co-existing variables.

In order to qualify for the Renewable Heat Incentive, upgrades had to be made to the property including additional insulation.

The MacArthur Project: **Derbyshire**

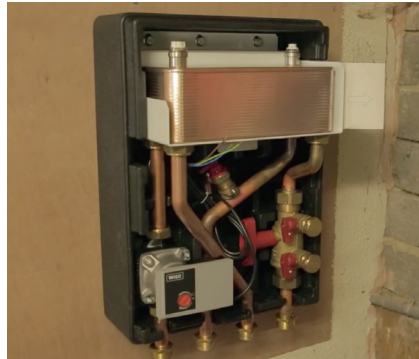
OUTCOME

The Vaillant hybrid system consisting of the oil boiler, Vaillant air to water heat pump and Vaillant solar thermal and solar PV* heat sources is delivering substantial environmental and cost benefits for Dr MacArthur.

It is projected to cut his annual oil costs by **30%**, as well as deliver an annual revenue stream of **£1,058** or **£7,406** over the next seven years thanks to the Government's domestic Renewable Heat Incentive (RHI) and Feed-In Tariff (FIT) schemes.

The efficiency of the new system will help to reduce carbon emissions by as much as five tonnes per year - the equivalent of driving 17,400 miles in a 2.0L turbo diesel car.

*Not supplied by Vaillant



WHY VAILLANT?

Richard Winter
Technical Designer, Renewable Incentives

"We chose Vaillant for this project because of the proven performance and flexibility of its renewable technology solutions, allied to

the sleek and modern design of their systems and the training and installation support they offered throughout the process. It really was a true partnership. Just as important were the parts and labour guarantees."

I was impressed with the ease with which the system could be retrofitted into my older stone-built property. The hybrid heating system with the intelligent control system and air to water heat pump at its heart has been far more responsive than I had imagined. Vaillant were recommended to me by a friend as the best for such a system and I am delighted with the results. It is certainly heating the house more efficiently and cheaply, and I now feel far more insulated against any potential oil or electricity price rises. It has provided real peace of mind as well as proving to be environmentally friendly.

Dr Glynn MacArthur, homeowner