



Renewable Heat Project with Angus Housing Association

Final Report

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Angus Housing Association worked with Warmworks to secure funding from the Scottish Government to install a range of energy-saving improvements in homes in the Kirkbank estate in Auchmithie.

The work consisted of packages of solar PV systems, air source heat pumps and battery storage technology, installed to work together in a way that was tailored to the needs of each individual tenant .

The project aimed to make fuel bills for tenants more manageable, increase the amount of energy generated and stored from renewable sources and also make homes more environmentally-friendly, cutting carbon emissions and contributing to a sustainable future.

Angus Housing Association appointed Warmworks as the Managing Agent of this project to ensure the work was carried out in a safe, professional and efficient way.

Policy context

The Scottish Government, through its Heat in Buildings strategy, has made a commitment to achieving net zero emissions by 2045, with interim targets requiring emissions reductions of 75% by 2030 and 90% by 2040.

To achieve this, it is estimated that around 50% of homes, or over one million households, will need to switch their existing heating systems to more energy efficient, low carbon alternatives by 2030.

The Energy Efficiency Standard for Social Housing (EESHS) was also introduced by the Scottish Government, which saw non-statutory targets developed in consultation with social landlords. The first EESHS milestone (EESHS1) set a target for social housing to meet EPC Band D, or a low Band C (depending on property), by 31 December 2020

A second milestone (EESHS2), which has been the main driver for this project, was introduced in 2019. EESHS2 sets targets for all social landlords to ensure that their housing stock can meet EPC Band B, or be as energy efficient as practically possible within the limits of cost, technology, and consent, by the end of December 2032.¹

While these targets will be a driver for action, we cannot ignore the fact that real people and families live in these homes, all of whom have been used to heating their homes in a certain way their whole lives. Warmworks' job, and indeed that of the wider industry, is to ensure that they are supported, well-informed and expertly guided through the transition to using renewable forms of heating to stay warm.

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¹ <https://www.gov.scot/publications/achieving-net-zero-social-housing-zero-emissions-social-housing-taskforce-report/pages/6/>

About the energy-saving improvements

The aim of this package of energy-saving improvements was to allow tenants to generate their own electricity through a solar PV system, which can then be used to help power an air source heat pump and other appliances within their home. Any surplus energy generated can typically be stored in the battery and be used later that day or at a later date.

This approach capitalises on the fact that, while all of the energy-saving improvements have their own benefits, they make the most impact when they are installed together.



An air source heat pump is a very efficient system that can use 1kWh of electricity to produce 3kWhs of heat.



A solar PV system produces energy that can either be used at the time of generation, or stored by a battery to power and heat the home during other periods of the day and night.



Along with the solar PV system generating free energy to charge the battery, energy tariffs are available that will charge the battery at cheaper rates, with the potential to save more money on energy bills.

How the process worked

Warmworks was well placed to manage the process, having built a robust supply chain with significant experience of having fitted all of the energy-saving improvements that were chosen for this project.

All tenants were supported at every stage of the process. An overview of the steps involved has been provided below:



An initial survey of the home was carried out by a Warmworks surveyor, completing an initial Energy Performance Certificate (EPC) and confirming what needed to be done



An accredited sub-contractor was appointed to install the energy-saving improvements



Warmworks carried out an independent quality inspection of the installation

The tenant received information on switching their energy tariff to make sure they were on the right one to maximise the savings on their fuel bills



Warmworks and its sub-contractor were on hand to answer any questions tenants had about their new system and how to get the best from it

An annual service visit will take place to ensure everything is continuing to work efficiently

Highlights & headlines

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households had energy-saving improvements installed, transitioning from electric storage heaters as their main source of heating over to an air source heat pump, a renewable form of heating.

Energy generation is performing extremely well; with one tenant seeing

89%

of their electricity supply coming directly from energy generated by the solar panels, which is then used or stored in the battery.

Early feedback from tenants is that some are already seeing significant energy bill savings, with one tenant reporting that her electricity costs have fallen to as little as

£7 per week

in the initial months after the installation work was completed.



Bespoke training opportunities were provided to Angus Housing Association's personnel on air source heat pumps – increasing knowledge throughout the sector.

Local supply chain was key - providing a high quality, local service ensured successful delivery of the project.

High levels of tenant & client satisfaction have been reported so far, with particular recognition given to the professional, efficient and streamlined service that was provided.

We are seeing an average SAP increase of

13 points

on each property.



Key learnings

This project was not without its challenges – the package of energy-saving improvements that was installed was complex, and involved careful coordination and consideration from a number of parties to ensure optimal delivery.



Tenant engagement

It's clear that projects of this scale and complexity will be delivered most effectively when supported by high levels of tenant engagement.

Before the project commenced, Warmworks and Angus Housing Association held information events at the local Village Hall to provide more details about the project and answer questions from tenants.

A consistent onsite site presence throughout the installation phase was useful to address any concerns as they arose, and also provided the opportunity for tenants to ask additional questions directly to the sub-contractor.

Furthermore, Angus Housing Association had the ability to make a void property available to receive the first installation – this then became a 'show home' for tenants to visit and see how everything looked once it had been installed. Initial tenant feedback has highlighted this as an example of best practice and it will be incorporated into future projects (where possible) as a result.

Managing tenant expectations

Managing expectations with tenants was a key part of the process, ensuring they understood what was being installed and why, and how it all worked. While part of this has been covered above under tenant engagement, the latter element – how it all worked – was driven in part by the requirements of the Microgeneration Certification Scheme (MCS).

MCS defines, maintains and improves quality by certifying low-carbon energy technologies and contractors.¹ As part of this, Warmworks' sub-contractors are required to provide clear documentation and ensure that it is understood by tenants, both before the installation and after the work has been completed. While this can often raise a lot of questions, it is a very useful way to identify wider support needs that, if left unaddressed, would be a barrier to carrying out the works.

1 <https://mcs-certified.com/>

A consistent onsite site presence throughout the installation served useful to address any concerns as they arose and also provided the opportunity for tenants to ask additional questions.

High-quality sub-contractors

As part of our commitment to quality, Warmworks manages a robust supply chain of sub-contractors across the country who help us provide a first-class service to our customers.

For this project, McInnes Group (McInnes) was selected to carry out the work under this project. The team from McInnes worked hard to ensure that tenants not only received professional and high-quality workmanship, but also went above and beyond to make sure tenants felt supported throughout the installation process. This often involved staying onsite late at night to answer questions, or dedicating time helping people prepare their home for the installation.

This level of support was instrumental in ensuring that tenants felt comfortable in going ahead with the work. It will continue to form a key part of our service offering as we go forward.

Distribution Network Operators

When installing a heat pump, contractors are typically required to get permission from the relevant Distribution Network Operator (DNO), who manage the electricity network, before connecting it to the grid. This is to make sure that the network can support any additional load requirements that may arise once the heat pump has been installed.

Scottish & Southern Energy Networks (SSEN) was the DNO responsible for the network in the area the project was carried out. As Managing Agent, Warmworks worked closely with SSEN during the mobilisation phase of the project to make sure that the parameters were understood and to reduce any potential delays in securing approval to connect. This approach went a long way in ensuring the project was delivered as efficiently as possible.



Customer stories

The measure of success of projects like these will always be the impact they have on the lives of people across Scotland; people who are struggling to stay warm and pay their fuel bills. Some of the stories from this project are included below.

Name

Mrs C

Location

Auchmithie, Arbroath

Date of installation

March 2022

Energy-saving improvements installed

Air source heat pump, battery storage technology, solar PV system

For more information about the Renewable Heat Project with Angus Housing Association, visit our website: warmworks.co.uk/our-work/renewable-heat-project-with-angus-housing-association/

Mrs C, was selected to have a package of energy-saving improvements installed in her home, including an air source heat pump, battery storage technology and a solar PV system. Mrs C was fed up living with electric storage heaters and was desperate to find a solution.

‘To be honest with you, it was very appealing and I did my research on it too. There was no reason for me not to go ahead nor a reason for me to say no.’

The first step in the process was for Warmworks to carry out a survey of Mrs C’s home to confirm it was suitable to receive these energy-saving improvements.

‘The survey was really quick and easy. They had a look at everything they needed to and I was able to ask them questions about what was being installed. I felt this was quite good as instead of telling me what was going to happen, they actually involved me too, which I appreciated.’

The surveyor confirmed that Mrs C’s home was suitable to receive the energy-saving improvements and she was delighted that she was able to take part in the project.

Warmworks then appointed McInnes Group (McInnes) as the sub-contractor who would carry out the work. The

team from McInnes got in touch with Mrs C to arrange a technical survey to discuss the installation in greater detail.

‘This was quick and easy too! The technical surveyor answered all my questions and went over everything I wanted to know in good detail.’

They gave me information on the preparation work that was involved and a plan to manage it all. There was a storage unit provided for me to put some stuff in as well, which was just opposite my house.’

Once the technical survey was completed, Warmworks advised Mrs C to contact Scarf, a charity that provides energy efficiency advice and services to households and businesses across Scotland, to ensure she was on the best energy tariff to suit the energy-saving improvements that were about to be installed.

After a short while, the installation began and the team from McInnes worked hard to ensure that the energy-saving improvements were installed as efficiently as possible.

‘Everything went well. They did the air source heat pump first, then the panels and the battery, which I was pleased with.’

The installation team were professional and did everything when they said they were going to.’

Once the installation was completed, a Warmworks inspector visited Mrs C’s home to ensure everything was installed correctly and to the highest standards.

‘This was great. They checked everything and made sure it was working as it should and also explained how it all worked, which was also really good.’

When asked about the impact of the energy-saving improvements that were installed, Mrs C said:

‘It’s absolutely life changing! I can’t even explain to you how much better it is compared to what I had before. The timers are great and when the heating comes on, I can feel the house heat up no problem.’

I am currently saving £150 a month, which has made a huge difference to me and my quality of life.’

Speaking about her overall experience of the project, Mrs C said:

‘My life is so much better now, I can’t even describe it to you.’

‘I thought it was done really well to be honest. There has been a huge difference in my bills. I pay much less now and I have not even changed my tariff or anything yet.’

Definitely go for it, it has made a huge difference.

Mr S
Auchmithie, Arbroath

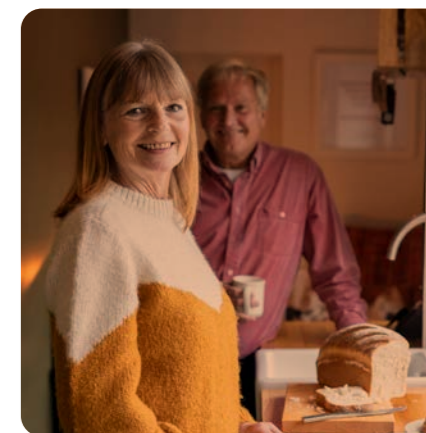


‘I never used my last heating system (electric storage heaters). There was one in the hall that I put on during the winter but on the whole, it was rarely used. To be able to put my heating on now is amazing, and will make a great difference.’

Mrs L
Auchmithie, Arbroath

‘I had no problems with the installation at all – they were in and out in a few days. Everyone was very professional, no complaints there and I didn’t really have any cleaning up to do afterwards.’

Mr F
Auchmithie, Arbroath



Summary

In summary, the results of this project are extremely encouraging. Tenants have been able to transition from relying on an old, inefficient heating system to an innovative, energy-efficient and renewable alternative that has been proven to save money on fuel bills and reduce the impact on the environment.

The process of installing this package of energy-saving improvements is not without its challenges, but it has been shown to be a readily available, innovative and tangible solution to helping social landlords meet their EEESH2 targets, while at the same time, reducing costs for tenants.

While there is more work to be done in terms of increasing the understanding of these technologies amongst the consumer base, as well as further work to ensure that the industry can keep pace with the demands of the policy agenda. This project has demonstrated that it can be done, and done well, with the right balance of tenacity, care and professionalism.

We are past the point of inaction now in respect of climate targets and tackling fuel poverty. This project acts as further evidence to support the case that it is possible to address both issues simultaneously, whilst providing a service that works for everyone - housing associations, tenants and the industry as a whole.



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