



Case Study

Eden Housing Association



Action for Warm Homes



Introduction

Eden Housing Association (EHA) is a small independent provider of affordable homes with a rural focus. It was established in 1997 following the voluntary transfer of housing stock from Eden District Council, and operates primarily across North Cumbria. EHA owns or manages approximately 2,000 homes for affordable rent or sale.

EHA secured Category 2 funding through Round 3 of the WHF, and worked closely with the evaluation across its lifespan. Questionnaires were distributed to EHA's beneficiaries in the 2021 and 2022 waves of fieldwork, and interviews were undertaken with residents who had received installations. In addition, indoor environmental monitoring equipment was installed in a small number of beneficiary homes, to measure the temperature and humidity levels pre- and post-intervention.

What were the aims and objectives?

EHA's WHF project stemmed from conversations among board members, about how the housing association could more effectively improve its housing stock, to make it more affordable for tenants and better aligned with the Net Zero agenda. EHA had some pre-existing knowledge and awareness of how fuel poverty was affecting tenants, particularly from a previous stock report that had highlighted rural challenges associated with solid fuel heating and inefficient storage heaters. However, EHA had little prior experience or track record in delivering fuel poverty measures to its tenants and housing stock; it had worked with a heat pump manufacturer, Daikin, to develop its thinking and proposal to the WHF. Eventually, EHA bid for funding to undertake 100 air source heat pump installations through Category 2 – a target that was subsequently revised downwards due to challenges related to the Covid-19 pandemic.

Who did it involve?

The role of an external partner – the heat pump manufacturer Daikin – was critical in supporting EHA with its initial bid development and proposal. EHA's contact with Daikin resulted from a wider engagement regarding Net Zero and improving social housing. Through Daikin's knowledge and experience of working with social landlords to develop strategies for decarbonising its housing stock, EHA's bid took shape and was successful. EHA's delivery staff positively described the

development of this partnership, without which the project may not have been viable.

Beyond this, EHA's delivery staff emphasised the importance of internal working relationships, particularly between the affordable warmth and finance teams, for delivering the project. As this was a new endeavour in the hitherto unknown decarbonisation arena, it was challenging to figure out exactly how to manage and deliver a scheme such as their Category 2 project, but it resulted in a major success.

How was it funded?

Aside from the funds contributed by the WHF, EHA match-funded half of the installation costs for each household through its own capital budgets. In addition, the now discontinued Renewable Heat Incentive (RHI) was described as an important part of the initial business case; it helped project staff to persuade senior executives that the case for investment was strong and that the returns would be adequate.

What were the impacts on households?

Data from the evaluation shows that:

- Before heat pump installation, 95% of EHA's questionnaire respondents couldn't easily keep their whole homes warm. Afterwards, 95% of respondents said they now could.

- 95% of EHA's questionnaire respondents reported that the temperature in their home is better now than it was before.
- 90% of EHA's questionnaire respondents said that their heating system's ease of use, their control over it, and how well their house retains the heat, are better now than previously.
- Before the intervention, 71% of EHA's questionnaire respondents said they couldn't keep warm at home, and it affected their physical health. Post-intervention, 62% of respondents said their physical health is now better than pre-installation.
- 100% of EHA's questionnaire respondents were satisfied overall with the service they received.
- The average running cost per household fell from £2,374 to £1,665 after intervention.
- CO2 emissions (kg/yr) dropped from an average of 4,018 kg/yr per household to an average of 1,088 kg/yr: a reduction of 73%.

Who did it help?

A representative example of those who were helped by EHA's project are Marc and Kayleigh, who live in a small, mid-terraced bungalow not far from Carlisle. The property was an EPC band E. As part of EHA's WHF project, they received an air source heat pump and, a couple of months before that, loft insulation in the roof. Previously, as Marc explained, they had storage heaters, only one of which *"was any good, the one in the lounge. The rest of the property was always cold [...] The kitchen, we never used; the hallway, occasionally; and the other bedroom, never; and the bathroom, never, because of the cost."* Marc and Kayleigh had some of the evaluation's indoor temperature monitors inside their home, which confirmed the picture Marc painted: in an average day, the living room was heated to an average of 23.8°C, while the main bedroom was 19.8°C. These were the only two rooms they heated, and while the other rooms in the home were not monitored, it is safe to assume that they would not have exceeded, and were probably lower than, the main bedroom's temperature.

Marc and Kayleigh also had other issues with their storage heaters. They were very difficult to afford, which was the main reason for restricting their usage to the two heaters in the main bedroom and the

lounge. Energy modelling data shows that the annual running cost for their home pre-intervention was £2,505, which – as they are retired people on a fixed income – was unaffordable. As Marc said, *"also you have got to bear in mind that you cannot just switch a storage heater on. You have to put it on the day before for it to charge up overnight, and then it gives off the heat the following day. So if you go into a room that is particularly cold, you cannot switch that storage heater on until the following day."* This resulted in the accumulation of mould and damp in their other rooms, which resulted in Marc periodically having to throw away clothes that went mouldy. *"You could smell the damp in the bathroom and in the small bedroom,"* he added. Worst of all, the cold in the home was contributing to Kayleigh's ill-health, making her develop chest infections and worsening her pre-existing respiratory condition.

Marc described the difference made by the air source heat pump and insulation as remarkable. *"The property is warm. It doesn't matter which room you go into [...] because we are normally used to walking out of the heating into a freezing cold room, so obviously the difference is that the full property is warm."* While the average temperature across a given day in the lounge has not substantially changed, the main bedroom is much warmer than it was pre-intervention, heated to 22.4°C instead of just below 20°C. The mould, condensation and damp issues have evaporated, and the modelled running costs of their heat pump are significantly lower than before – a decrease of nearly £1,000, compared to before their intervention. *"It is a major saving as far as we are concerned,"* said Marc, *"because we are retired people, we are on a fixed income, and obviously it is a major saving on what we were paying out."* They are paying less money for a property which is significantly warmer, to the extent they have stopped having to cut back on food and other essentials in order to feed their storage heaters. Best of all, Kayleigh's health has improved. *"Particularly, her physical health is a lot better,"* Marc said. *"She doesn't get the chest problems that she had and she is a lot better now."*

Marc was also complimentary about the quality of their installation, and the support they received during and after it took place. *"I couldn't fault them at all,"* Marc said of the installers, *"they did a brilliant job, no mess whatsoever."* Vitally, they were supported by EHA staff members to switch to a more appropriate electricity tariff for their heat pump. As Marc explained,

“We were told about tariffs and everything, well, because we are on an Economy 7 tariff because of the old storage heaters, but we were more concerned then with the daily rate because obviously the air source heat pump operates mainly during the day, so the night-time tariff isn't much good to you. [EHA] advised us on all that, and we did get a tariff that was cheaper during the day. We changed suppliers, so that suits us down to the ground.”

The overall outcome for Marc and Kayleigh has been a warmer, happier, healthier home. As Marc summarised, *“we are delighted with it.”* Their story shows the positive impacts of installing air source heat pumps and insulation for both health and thermal comfort, and how providing support with the installation and afterwards is vital to ensure an intervention has a good outcome.

What were the main enablers of success?

In addition to the key role played by Daikin, EHA's approach to targeting and eligibility criteria supported the successful delivery of the project. At the outset, EHA produced a piece of housing stock analysis, and focused on properties where the primary heating type was storage heaters. From this point, tenants were sent a letter making them aware of the scheme and inviting them to take part. The EPC of the property – although recognised as an imperfect measure by EHA delivery staff – was an important qualifier for the selection of households, in an approach that was described as ensuring that tenants could have warmer homes while

simultaneously improving EHA's housing stock. For some properties that did not fit – for example, those that were ineligible due to being in EPC band D – EHA used a fuel poverty calculation tool developed by the Centre for Sustainable Energy in Bristol. For the vast majority, the high running costs of inefficient storage heaters ensured their eligibility through this method. The two-pronged approach of using EPC and the fuel poverty calculator helped EHA to direct its funding to those most in need of support.

What are the lessons we can learn?

- Funding organisations with little to no track record of successfully undertaking small projects can kickstart much greater fuel poverty-related delivery and ambitions. Future fuel poverty and energy efficiency programmes should strike a balance between supporting organisations that can deliver quickly and at pace, and helping those that need to build capacity to deliver now and in the future.
- Supporting recipients of air source heat pumps with tariff switching is vital, to ensure they are not left running their new electric system all day on an expensive Economy 7 tariff.
- For organisations looking to develop fuel poverty projects, but who have limited prior experience, working with a knowledgeable and skilled external partner can help enormously with bid development, proposal and delivery.

What is the project doing next?

Delivering its WHF project has been the first step in a much longer journey for EHA. Even before the project was completed, EHA delivery staff were beginning to examine the possibility of undertaking further projects focused on fuel poverty and affordable housing. The WHF project enabled them to design and refine a delivery model, pilot it among a relatively small number of their properties, and demonstrate to senior executives that investing in fuel poverty produced multiple co-benefits for tenants and EHA alike. At the time of writing, EHA was working with a larger consortium to apply for further funds through the UK Government's Social Housing Decarbonisation Fund – which might have been impossible had the WHF not supported EHA's first venture into the decarbonisation and fuel poverty arena.