

HES Homecare pilot 2017-19 learning summary

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This document summarises key learning from the HES Homecare pilot project 2017-19 in Moray and Annandale and Eskdale, delivered through Home Energy Scotland and managed by Energy Saving Trust. Learning over the course of the two-year pilot was documented and case studies compiled as a resource for project staff and to embed this learning within the design of any future mainstreamed service. An evaluation was commissioned by Scottish Government from University of Edinburgh and is published as a separate document on Scottish Government's website:

<https://www.gov.scot/publications/evaluation-hes-homecare-pilot/pages/1/>

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Context

Following a [recommendation](#) from the Scottish Rural Fuel Poverty Task Force, the pilot set out to engage health and social care professionals to refer rural households where someone in the home has a long-term physical or mental health condition. They would be supported using an [Energycarer](#) approach: person-centred face-to-face advice and support from Home Energy Scotland to achieve affordable warmth tailored to their need.

HES Homecare clients were identified as vulnerable households because someone in the household had a long term illness or disability – we did not include those who might be defined as vulnerable only through being aged 60 or over. HES Homecare clients were not necessarily in fuel poverty.

The Scottish definition of fuel poverty at the time of the pilot was:

A household is in fuel poverty if, in order to maintain a satisfactory heating regime, it would be required to spend more than 10% of its income on all household fuel use. If over 20% of income is required, then this is termed as being in extreme fuel poverty.

There are two satisfactory heating regimes recognised within that fuel poverty definition: standard and enhanced.

Standard - an adequate standard of warmth for most households is 21°C in the living room and 18°C in other rooms for a period of 9 hours in every 24 (or 16 in 24 over the weekend).

Enhanced - households where someone is aged 60 or older or suffers from a long term illness or disability are considered vulnerable and are assumed to require an "enhanced" heating regime. A higher temperature of 23°C in the living room and 18°C in other rooms is required for 16 hours in every 24.

Impartial energy advice was provided to every household and included advice on heating, insulation, draught proofing and ventilation and referral to partners for benefits check and energy tariff check, with ongoing support from the Energycarer to access the support. Of the households supported through the pilot 81% are owner-occupied, 18% privately rented and 2% social housing tenants.

An intervention fund was provided to support improvements to the home where no other funding was available and the householder was unable to afford to self-fund. Access to intervention funding was based on an assessment of whether the household was in fuel poverty and their ability to self-fund or qualify for the Home Energy Scotland interest-free loan. Funding limits per household were applied and further developed over the course of the pilot.

An assessment of fuel poverty was carried out using modelled energy costs in Energy Saving Trust's bespoke Dynamic Engine tool. The tool is based on the RdSAP assessment used for Energy Performance Certificates with added functionality that allows information about how the householder uses the heating to be incorporated into the calculation of the energy used and for alternative scenarios to be modelled (heating fuel, heat emitters, proportion of home that is heated, heating hours and temperature). The tool was originally developed to inform Home Energy Scotland's home renewables advice so that householders can make an informed choice of renewable energy system compared to traditional system, or compare renewable energy systems to each other on cost and CO₂ emissions. Dynamic Engine is not used to lodge EPCs on the EPC register, as this is not a service that Home Energy Scotland offers.

Separate from the Homecare pilot, Home Energy Scotland had an existing home visit service for vulnerable households through Community Liaison Officers, which did not include casework or advocacy. It typically offered one home visit to each household and focussed on those who struggle to engage with Home Energy Scotland over the phone. Where there is local energy advice provision offering home visits the Home Energy Scotland service does not displace or duplicate that service. Home Energy Scotland instead refers or signposts the household to receive a home visit from that other service. Home Energy Scotland works in partnership with the service provider to ensure householders are referred for government-funded assistance as appropriate.

Energycarers were existing Home Energy Scotland specialists trained and experienced in providing in-home advice. Processes and safeguards were already in place to support them so they were able to begin visits immediately and utilise Home Energy Scotland's relationship with Warmworks to support householders through Warmer Homes Scotland.

Summary of support and home improvements through HES Homecare pilot:

Support households received	Number of households	
HES Homecare service – received advice	189	12 declined home visit
HES Homecare service – face to face advice	177	April 2017-March 2019
Home improvements (breakdown below)	95	April 2019-July 2019 to include completion after end of pilot
<i>Home improvements through Warmer Homes Scotland</i>	65	<i>Heating, insulation, secondary glazing, doors, enabling measures</i>
<i>Home improvements funded by HES Homecare intervention fund managed by Warmworks</i>	26	<i>Heating, insulation, secondary glazing, doors, enabling measures</i>
<i>Home improvements funded by HES Homecare intervention fund managed by Care and Repair</i>	23	<i>Roof/gutter/window/door repairs, dampness and mould reduction works, draughtproofing, enabling measures</i>
<i>Low cost items directly provided by the Energycarer</i>	18	<i>Electric heater, electric blanket, dehumidifier, chimney balloon, reflective radiator panel</i>
Households received advice and support (no home improvements)	94	

Enabling measures are physical interventions that make it possible for heating or insulation to be installed, such as lifting and replacing floor coverings, de-cluttering rooms, temporary accommodation and joinery to accommodate pipes.

Summary of key learning

Vulnerable householders

1. From customer feedback and observation, the flexible and person-centred approach by Energycarers seemed to be effective in establishing trust and working to a pace the householder felt they could cope with.
2. Having the Energycarer present at survey, install and inspection of energy-saving home improvements and small repairs gave the householder confidence and ensured that any misunderstandings were cleared up promptly.
3. Householders were sometimes unable to retain information from one occasion to another, or to recall what had been agreed. Some had a recognised mental health condition, memory loss, or an illness or medication that means they tire quickly. This was a big factor in the low number of questionnaires collected for evaluation purposes.
4. Introducing and liaising with other parties supported immediate feedback and progress in comparison to referral or signposting where the outcome is not known until a later date and may never be known unless reported by the householder.

Energycarers liaised with energy suppliers to correct billing errors and address energy tariff issues for households where the Energycarer felt that the householder was likely to become confused about which organisation was doing what if they were referred or signposted for support. In these cases the Energycarer managed all of the energy related interactions.

The value of this approach can be seen, for example, where there were changes of service provision and of personnel in organisations that we would otherwise have referred or signposted a household to. In these situations there would have been a risk of the householder breaking contact with the organisation if we had referred them. For example:

- When REAP's fuel billing advocacy service in Moray experienced a brief gap in funding in summer 2018.
 - Where there were changes of personnel at Cunninghame Housing Association's fuel poverty project in Dumfries and Galloway.
5. We recognise the need for:
 - Comprehensive training on mental health awareness and mental health first aid to know what to say/do in a situation with a client who is distressed.
 - A process for Energycarers to be provided support (on-site, confidential, face-to-face) from their employer for their wellbeing and positive mental health.
 - Self-care (in context of clients passing away) because it can become difficult for Energycarers to cope with clients passing away and providing support to remaining members of the household. This could become overwhelming when several clients pass away within a short timeframe and appropriate support must be available to the Energycarer.
 - A triage process to ensure that when vulnerable people come back for support and advice repeatedly they receive appropriate support.

Adequate warmth

The Scottish Government's fuel poverty definition at the time of the pilot includes a description of adequate warmth:

Standard - an adequate standard of warmth for most households is 21°C in the living room and 18°C in other rooms for a period of 9 hours in every 24 (or 16 in 24 over the weekend).

Enhanced - households where someone is aged 60 or older or suffers from a long term illness or disability are considered vulnerable and are assumed to require an "enhanced" heating regime. A higher temperature of 23°C in the living room and 18°C in other rooms is required for 16 hours in every 24.

The HES Homecare client households all fall into the category for which an 'enhanced' heating regime is more appropriate.

6. The Energycarers identified from discussion with householders that many households that received HES Homecare support were under-heated. The Energycarers reported that the temperatures in the 13 homes monitored in the evaluation sample using temperature sensors were fairly typical of HES Homecare clients as a whole.

Of the 13 homes monitored for the evaluation using temperature sensors:

- Four showed temperatures rarely above 15°C in the main living area, the warmest area in all homes monitored:
 - One living room was below 12°C through November-January with a minimum 5.4°C, one peak of 17.2°C (on Christmas day) and then typically 11-15°C until April.
 - One home averaged 8.1°C in the living room with a minimum of 1.5°C and maximum 17.3°C. In February the typical temperature in the living room was 7°C with peaks of 12°C and it did not reach 16°C until late March.
 - One home averaged 13.3°C in the bedroom and 15.5°C in the living room: typically 14-16°C.
 - One kitchen averaged 13.3°C with minimum 2°C and peaks of 22°C in September-December but reached a maximum of 15°C on only 3 days during January- February.
 - Three more seldom achieved 21°C and averaged 16°C or below in the living room.
 - Four often achieved 15-22°C in the living room, averaging 17-19°C.
 - Two homes often achieved 21-25°C in the living room, averaging 20°C or more.
7. Householders typically did not even expect to achieve temperatures as high as 18-21°C and not for as long as nine hours per day – in many cases we advised to increase the use of heating to achieve a healthy/comfortable temperature and reduce condensation dampness (rather than reduce heating temperature and duration for energy efficiency or cost saving).
 8. For those householders who were under-heating their home, cost of heating fuel was the main factor, followed by unsuitable or inefficient heating system provision (solid fuel fires, old storage heating, on-peak electric heating) particularly in privately rented accommodation.
 9. We set out to achieve affordable warmth tailored to the individual household: in many cases this was not achievable and the best we could do was target warmth where it is most useful - this

meant advising the householder to under-heat their home compared to the ‘standard’ regime (turn off radiators in spare bedrooms, dining rooms) and to focus on heating the person rather than the whole home – electric blankets were provided to two householders and offered to another; one client who is bed-bound was using a coal fire, electric heaters and an electric blanket and was not comfortably warm.

Use of sensors to monitor temperature and relative humidity

We used TinyTag temperature and relative humidity sensors to monitor approximately 30 homes in the pilot to:

- Support the evaluation (13 homes).
- Inform advice to householders on managing moisture.
- Gather evidence for the need to improve the home heating insulation and ventilation.
- Verify that target temperatures (and humidity) were achieved after intervention.

This provided some evidence that the homes monitored were under-heated.

10. We recommend the use of sensors for these purposes, but also recognise that it could be frustrating for clients to have them in place yet not have any improvements made to their home. Energycarers felt that it was fairly easy to interpret the data and highlighted that this offers the potential to show a landlord that a home is cold or damp despite the householder using the heating and ventilation and so can help encourage the landlord to improve the energy performance of their property.

Fuel poverty and calculating affordable warmth

As a broad measure of fuel poverty we modelled the energy cost to heat homes to a ‘standard’ heating regime (using Energy Saving Trust’s ‘Dynamic Engine’ tool based on RdSAP) and then worked out what % this was of total household income. Where this was >10% we assessed the household to be in fuel poverty and where >20% extreme fuel poverty. In the few cases where this was <10% we recalculated allowing for housing cost to more closely reflect the revised Scottish Government definition of fuel poverty proposed in the Fuel Poverty (Targets, Definition and Strategy)(Scotland) Bill in 2018.

11. While we were able to improve comfort and affordability for households through HES Homecare support, we were not always able to fully lift households out of fuel poverty, especially if they were in extreme fuel poverty when we first met them.
12. Clients were willing to share information about their household income and expenditure in the context of benefits checks, grant and loan eligibility. Using a ‘band’ of income made it easier to ask for this information – i.e. <£10k/£10-16k/>£16k.
13. HES Homecare clients’ household annual income ranged between £3.8k and £21k, typically around £10-£13k. Where we were considering use of the intervention fund we analysed the household’s fuel costs and energy needs in more detail. For these households who were in the typical income range, we found that a ‘standard’ heating regime would cost 8-15% of the **total household income** and around 40% of disposable income after housing and other essential costs. In a few extreme cases we found households that would need to spend 40-50% of total household income to heat the home to the ‘standard’ heating regime.

14. An 'energy diary' tool to log meter readings and what heating and appliances were used would enable a link to be made between how the household is using energy and the impact of that use on comfort and cost.
15. Energycarers found it helpful to have a tool that allowed occupancy inputs and allowed flexible modelling of energy use and cost rather than being limited by a tool that had fixed assumptions about how the heating is used. Energycarers required training to make best use of the tool's potential.

Funding improvements to homes

Energycarers provided information and advice to householders to help find installers and obtain quotes where the work was not grant funded.

16. The HEEPS Equity Loan accessed via Care and Repair was not available in the HES Homecare pilot areas but was available in other areas of Scotland as a pilot. If in future both are available, Energycarers should work closely with Care and Repair to help householders access the HEEPS Equity Loan.
17. We were not able to access [Scheme of Assistance](#) grant funding for our clients for repairs. In Moray the fund can offer up to 75% of the cost of repair but in 2018-19 was exhausted by December. In Dumfries and Galloway Scheme of Assistance grant was available only for adaptations for disabilities.
18. It was helpful to have access to funding to help householders with small repairs to roofs windows and doors and rising damp that were affecting the households' ability to keep their home warm/preventing energy efficiency measures from being installed. Care and Repair were ideally placed to manage funding for this purpose, where they had capacity to do so, as they had local knowledge and either a local procurement framework or used Local Authority Trusted Traders.

Integration with Warmer Homes Scotland and Home Energy Scotland loan

Eight households had previously applied for home energy efficiency grant support – Warmer Homes Scotland or its precursors - but had dropped out of this process because they were unable to:

- Organise the home to allow heating or insulation work to take place (de-cluttering, lifting floor-coverings).
- Afford a contribution to the cost (required for more expensive improvements).
- Communicate effectively with surveyors, contractors and office staff.
- Cope with the process at all – change, strangers, responsibility and confidence.

One more household was supported by an Energycarer to co-ordinate calls and visits to resolve complications after heating was installed through Warmer Homes Scotland. The heating had been installed without support from an Energycarer.

19. Extra support and advice helped six of these eight households that had previously applied to complete that journey and have energy saving home improvements installed. Two households did not complete: one was offered funding for alternative insulation not available through Warmer Homes Scotland, the other was not resolved because the private landlord disengaged from correspondence with both the householder and the Energycarer.
20. Close working between Energycarers and Warmworks was extremely valuable and is vital to the success of the Energycarer service. Communication processes were improved over the course of the pilot leaving a positive legacy for the interaction between Home Energy Scotland and Warmworks. It was important that the Energycarers did not raise householders' expectations of what might be available under Warmer Homes Scotland.

It was useful for the Energycarers to:

- Have (limited) access to the Warmer Homes Scotland database to check on progress.
 - Be present with the householder at the Warmer Homes Scotland survey to ask questions about the improvements offered.
 - Develop a better understanding of what home improvements are offered under this scheme, under what circumstances, particularly with internal wall insulation and heating for private sector tenants.
 - Discourage any assumption that a householder would be unable to afford the customer contribution, which potentially restricted the measures offered under Warmer Homes Scotland (as client contributions could be met by the intervention fund).
 - Be able to advise the householder on the pros and cons of heating choice, taking into account how the home is used and heated based on the Energycarer's home assessment, before the offer is made so they have time to consider. This advice complemented the advice on heating options provided by Warmworks.
 - Coordinate with Warmworks and organise for a fuel supply to be in place ready for the heating installation by Warmworks, e.g. HES Homecare helped organise an LPG tank installation and supply contract for one household to facilitate their Warmer Homes Scotland heating system installation. At this time Warmworks did not arrange LPG connections under Warmer Homes Scotland; instead the householder was advised to arrange a fuel supply contract with their choice of supplier and arrange for the tank and fuel. HES Homecare supported the householder with this by identifying local suppliers, comparing prices and being present for tank site survey if they felt they needed this. Arranging and funding the new oil tanks and asbestos removal became part of the Warmer Homes Scotland service during the time of the pilot: before that change was introduced the HES Homecare intervention fund was used to pay for asbestos removal, which was arranged by Warmworks to enable the installation of central heating through Warmer Homes Scotland.
 - Advise on use of heating controls to reinforce the Warmer Homes Scotland installer and inspector advice to ensure the householder has taken this on board.
21. Warmer Homes Scotland Regional Customer Service Officers (RCSO) are particularly helpful for vulnerable customers and are able to:
- Arrange new mains gas connections and enabling support, e.g. cleaners, removals, accommodation.
 - Coordinate support well because they have full understanding of each client's case.

- Work closely with Energycarers so that the RCSO takes responsibility to coordinate the Warmer Homes Scotland support while the Energycarer manages wider advice and support.
22. Occasionally clients did not meet all the eligibility criteria for Warmer Homes Scotland and we utilised the appeals process to set out the specific exceptional circumstances of the client. Some of the rules such as the residency requirement are there to protect vulnerable tenants and where we have demonstrated clients meet all the other eligibility criteria and access to the scheme is in their best interest, applications have been reinstated. It was very helpful for Energycarers to have the opportunity to make a case for exceptions to Warmer Homes Scotland criteria.
23. In supporting clients to explore the Home Energy Scotland Loan we observed households with a low income that were theoretically able to meet the loan repayments (based on available disposable income after essential living costs) but were under-heating their home to keep those costs down. There is no mechanism in the loan affordability assessment to check that the self-declared outgoings and disposable income are sufficient to heat the home adequately. Energy Saving Trust's 'Dynamic Engine' tool could support this.

Intervention fund

We used funds provided by Scottish Government and SSEN, assessed on a case-by-case basis, to pay for:

- Energy saving home improvements where those were not available to the householder through Warmer Homes Scotland, or where the householder was not eligible for or could not afford the Home Energy Scotland interest-free loan.
 - The 'customer contribution' to the cost of measures installed through Warmer Homes Scotland where that contribution was the barrier to the install going ahead.
 - Replacement of inadequate and expensive heating (electric panel heaters or very old storage heaters replaced with new high heat retention storage heaters) where those were not available to the householder through Warmer Homes Scotland, or where the householder was not eligible for or could not afford the Home Energy Scotland interest-free loan.
 - Someone to lift floor-coverings to allow the heating installation and to replace them afterward.
 - Overnight accommodation while heating was installed.
 - 'Emergency' electric heaters where the home heating was broken or inadequate.
 - Reinstating a shower taken out of use as a result of the installation of a high-pressure boiler.
 - Installing an electric shower to take advantage of an off-peak electricity tariff and minimise hot water consumption where there was no shower before.
24. It was useful to have an intervention fund for use where repairs or improvements were necessary or highly recommended and where no other funding was available to or affordable for the householder, or where this enabled the householder to take up Warmer Homes Scotland support. ECO funding was claimed where possible.
25. Contracts with Warmworks and with Care and Repair were essential to make use of their procurement processes, quality assurance and contractor management.



Private sector tenants and landlords

Of the households supported by HES Homecare 18% were tenants of a private landlord (81% were owner-occupied and 2% social housing tenants).

26. Sensitive handling of the relationship with the landlord can be productive in gaining agreement to carry out work on the home, with the householder's consent and full participation in the conversation. (We note that there are legal protections in place through the tribunal service to ensure heating systems are safe and in working order.)
27. It helped to have close working and knowledge transfer between the Energycarers, who provided support to tenants and the Home Energy Scotland specialist advisors who provided advice to private sector landlords.
28. We had some success in making the case to the landlord to improve their property by referencing the forthcoming EPC minimum standards [legislation](#). Where the current EPC rating is very poor it may not be possible to achieve that minimum standard.
29. Heating provision that meets both the tolerable standard and repairing standard can be inadequate to heat the home and prohibitively expensive to use, e.g. on-peak electric panel heaters. This potentially leaves vulnerable householders unable to afford to heat their homes adequately, yet ineligible for a more affordable heating system through Warmer Homes Scotland. The upcoming changes to the repairing standard won't address this but regulation of the private rented sector should, as replacing an old heating system with a more efficient type can be one of the easiest and most cost effective ways of raising the SAP score of a property. HES Homecare attempted to support five tenants through Warmer Homes Scotland and three tenants using the intervention fund, all of whom were struggling to afford to heat their homes adequately despite their homes meeting both the tolerable standard and repairing standard. In each of these cases installing central heating would have lifted the EPC band to E, achieving the initial energy efficiency standard that private rented homes need to meet by 31 March 2022.
30. Knowledge of the tolerable standard and repairing standard is essential in providing accurate advice to tenants. Where an Energycarer observes that a property does not meet one of these standards they must also understand what action can be taken by the householder and the potential consequences to the landlord and security of tenancy. There are different kinds of tenancies - e.g. crofting, property owned by a family member, shared equity - to which the standards apply differently and which bring different challenges.

Damp

The pilot did not actively seek out damp homes, however where advice and intervention to tackle dampness could potentially improve the health of the householder and contribute to affordable warmth this support was provided.

Dampness in the home has a negative impact on energy performance: a damp wall conducts heat more readily from the interior to the exterior than a dry wall.

Dampness in the home can prevent insulation from being recommended:

- Saturated cavity insulation transfers heat from the interior more rapidly than an unfilled cavity.
- Wall insulation is not recommended where there is dampness in the home.
- Loft insulation is not recommended where there is dampness in the unheated loft space.

Dampness in the home can lead to mould. Mould appears where there is condensation dampness which is moisture condensing from the air onto a cold surface. An external wall that is wet within its structure (e.g. from a water leak from the roof or gutter or damaged render) conducts heat from the inside of the building to the outside of the building, creating a cold area on the inside of the building that then attracts condensation. Dampness from disrepair can contribute to cold and mould within the home. The negative impact on physical and mental health of living in a mouldy home has been well documented.

In assessing potential affordable warmth improvements to the building, Home Energy Scotland Homecare applied the following hierarchy:

1. Ensure the building is wind and watertight and not in disrepair that affects the household's ability to stay warm.
2. Minimise energy demand through insulation.
3. Ensure adequate efficient heating provision and ventilation to maintain the building fabric and to provide a comfortable living temperature, while minimising energy cost through the choice of heating fuel, system, supplier and tariff.
4. Minimise energy cost through the efficient use of heating.

HES Homecare advised on behaviour to mitigate the risk of condensation dampness resulting from under-heating, including advice on ventilation and management of moisture within the home. Because identifying and advising on the treatment of dampness and condensation has been a significant element of HES Homecare, provision of training on this topic is important.

Of the homes supported by HES Homecare, the following situations of dampness were identified:

- Approximately 10 homes had a roof or gutter leak.
- Two homes had suspected rising damp.
- Three homes had saturated cavity wall insulation from water entering the cavity as a result of damaged render/mortar or a roof leak. One of these had extensive black mould.
- Two homes had extreme condensation and black mould in uninsulated flat-roofed extensions that housed their kitchen and bathroom and which had no mechanical ventilation (one also had a roof leak).
- One home had water blowing in around the door causing damp to the doorframe and wall.
- Two further homes had condensation but no evident water leak – this condensation was attributed to under-heating and inadequate ventilation (no extractor fans).

There was no grant funding available to address this other than HES Homecare intervention fund.

To address dampness the intervention fund was used to support 14 households:

- Humidistat extractor fans installed in three homes badly affected by condensation and extensive black mould, in one of which humidity and temperature was monitored using sensors.
- Cleaning of mould from walls and ceilings in three homes.
- Electric dehumidifiers to five homes.

- Repair of external water leaks in eight homes.
- Extraction of saturated insulation from cavity walls to re-insulate once dry and repair of water leaks in three homes.

We did not support roof repairs in homes where there was a risk that the repair could become larger in scale than the project could help with – for example Care and Repair reported that, when surveyed, one home was found to have badly rusted slate nails so replacing one or two slates could easily disturb other slates. There was no grant funding available for larger scale roof repair.

In relation to the failed cavity wall insulation and whether this was covered by a Cavity Insulation Guarantee Agency (CIGA) guarantee, we believe the cavity wall failures occurred within the timeframe of the usual guarantee provision, i.e. within 25 years, however no CIGA guarantee was registered so these households could not seek support through CIGA. We understand that if they were registered, CIGA would support remedial works including cavity wall insulation removal free of charge for any failure due to the installation, survey or material (through the original installer if still in business or otherwise through another contractor). Failure due to other reasons such as lack of maintenance or occupant behaviour would not be covered – we believe that two of these three households would not have been able to secure support through CIGA if they had been registered because of the disrepair that had allowed water into the cavity.

31. There is a funding gap for dampness remediation measures that do not generate a SAP improvement. Yet these measures may be needed to help a householder achieve affordable warmth.

Because saturated cavity wall insulation was preventing the affected householders achieving affordable warmth, HES Homecare intervention fund was used to fund extraction of this insulation for homes where there was no CIGA guarantee (this is not offered under Warmer Homes Scotland as an enabling measure for replacement cavity wall insulation). The cost of extraction was £800-£1200 per home and the repair to the render/mortar £200-£500.

There was no grant funding for humidistat extractor fans, even in cases where the presence of condensation dampness was preventing wall or loft insulation installation, other than the HES Homecare intervention fund. The cost of installing humidistat extractor fans to kitchen and bathroom was approximately £500 per home. The cost of removal of black mould from surfaces was £165-£200 per home.

It is not possible to model the additional energy cost to heat the home where the fabric of the building is damp and where the U-value of the material when damp is not known. The rate of heat loss depends on how damp the wall fabric is. This is analogous to a down jacket: the thermal performance can be rated when the jacket is dry and functioning normally but when the jacket becomes wet it does not keep the heat in; how much it fails to keep the heat in depends on how wet the down is. Ultimately if the down is very wet it will make the wearer lose heat more quickly than if they were wearing no jacket.

The U-value for a typical inter-war cavity wall building would be 1.6 W/m²K unfilled to 0.5 W/m²K filled. The U-value of saturated cavity insulation could be higher (less insulating) than 1.6 W/m²K. EPC software rates the thermal performance of building elements based on building regulations at the time of install and on the assumption that the installation is not in a state of disrepair. It is not possible to model

the additional energy cost with compromised double glazed windows – they may be double glazed but have blown seals and rotten frames.

Disrepair of double-glazed windows

HES Homecare used the intervention fund to repair or replace double-glazed windows in four homes during the first year of the pilot. In one home this was one window where the glass was broken and had been boarded up. In the other three the frames were ill-fitting, warped or rotten and could not be repaired or draught-proofed. There was no other grant funding available for this.

Recommended improvements that were not completed

A number of households that had energy saving improvements or repairs recommended by HES Homecare Energycarers did not go on to install those measures for a variety of individual reasons as illustrated by the examples below.

For those households eligible for Warmer Homes Scotland, the reasons for not progressing with a recommendation were:

- Householder was unable to cope with organising removal of clutter.
- Private sector landlord refused permission for replacement doors unless they could approve the specification of the doors in advance.
- Private sector landlord refused to pay for installation of LPG tank (£1500) and firewall.
- Private sector landlord communication breakdown, landlord permission not given in two cases.

For those households not eligible for Warmer Homes Scotland, the reasons for not progressing with a recommendation were:

- Householder eligible for Home Energy Scotland loan but did not feel financially secure enough to take this up.
- Cost of recommended measures exceeds intervention fund guideline for per-household funding limit (room-in-roof insulation) and exceeds customers' means.
- Homecare could not pay for a heating replacement as the householder was the tenant of family member and we were advised by Scottish Government that the owner should be responsible for funding replacement heating as a repair (it was later installed through use of small inheritance received).
- Awaiting confirmation from Social Work that no social housing will be offered (owner occupier).
- Awaiting rehousing to social housing (private tenant).
- Householder taken into residential care before measures could be installed.
- No longer able to contact client.
- Letting agent unable to secure the landlord permission required for internal wall insulation.
- Householder moved into sheltered accommodation shortly after measures offered.
- Householder passed away.

In some cases recommended repairs were beyond the scope of HES Homecare, including:

- Extensive roof repair.

- Repair to plaster on the wall caused by pre-existing dampness - no measurable SAP improvement, no longer damp, however exposed wall brickwork will create a colder area on the wall which increases the risk of condensation on this colder surface.

Working with health and social care to identify and refer householders

The pilot aimed to engage health and social care professionals to identify and refer vulnerable householders to Home Energy Scotland for support. At meetings and briefings leaflets for referrers and for householders were provided. Referral cards, posters and access to the Home Energy Scotland referral portal were offered.

Home Energy Scotland activity to engage health and social care in pilot areas to make referrals:

Annandale and Eskdale

- Meeting with Health Improvement Annandale & Eskdale - part of the Local Health Partnership - with NHS and social care leads.
- Energycarer was provided use of desk space at Sonas in Annan Hospital and at Moffat Hub (health and social care bases).
- Presentation/meeting with Annan social services and Care at Home team leaders.
- Service presented at one Health and Social Care Locality Celebration summer 2017, case studies presented spring 2018 to a large audience of frontline service providers.
- Briefing and ongoing contact with Community Link Workers, Annan One Team, Moffat One Team, Lockerbie District Nurses.
- Briefing to GP practice managers, Safe and Healthy Partnership (SHAP), Visibility's See Hear project, Visibility Scotland service users.
- Project advertised on NHS staff intranet The Beacon during winter months.
- Articles in Dumfries and Galloway NHS core briefing.

Moray

- Briefings provided to Access Care team for Education and Community Care, Community Wellbeing Development Team (older people), District Nursing Moray, Health Visiting and School Nursing Mental Health Development Workers team, local Health and Care forum, The Moray Council.
- Visits to/meetings with practice managers at Aberlour Health Centre, Ardach Health Centre, Dufftown Medical Practice, Elgin Community Surgery, Fochabers Medical Practice, Keith Medical Group Moray Coast Medical Practice in Lossiemouth, Seafield Medical Centre in Buckie – referral cards provided.
- At a Grampian Self-Management Network in Elgin we met the team leader of the Community Link worker team in Moray and provided referral cards and leaflets. We made several approaches to offer a briefing however the team was not able to accommodate because there were many other organisations also keen to meet with them.
- Home Energy Scotland advisors were available and proactively engaging patients at a series of flu jab clinics across Moray.

However, of the referrals to HES Homecare relatively few came from health and social care professionals.

Households supported were referred to or heard about Homecare:

7% through channels facilitated by NHS.

6% referred by Care and Repair.

11% referred by the Local Authority (3.5% from social work)

21% found out about HES Homecare through their support organisations - day centres, lunch clubs, charities.

27% found out about HES Homecare through other sources including word of mouth.

29% were previous contacts who were actively contacted by Home Energy Scotland to offer Homecare support, or re-contacted Home Energy Scotland themselves over the course of the project and were offered Homecare support.

32. We recognise that health and social care professionals find it difficult to keep track of services that come and go so we presented HES Homecare as part of Home Energy Scotland which is well-established as a trusted impartial government-funded service.
33. Care at Home staff told us they do not have a work mobile phone to use the Home Energy Scotland referral portal and they wanted a quick and easy low-tech way to refer householders so we produced freepost referral cards and distributed these along with posters.
34. Despite a considerable investment of time and effort HES Homecare did not manage to engage as broad a range of health and social care professionals as had been hoped. This echoes the experience of Home Energy Scotland advice centres more generally – it takes time and repeated engagements to build effective referral partnerships. This is particularly the case in health and social care where patients and service users have more urgent needs which take priority.
35. In one of the pilot areas a champion in the health and social care partnership who is committed and well-networked with in-home services and the community more generally was extremely proactive in making introductions and creating opportunities to promote the service. It would be extremely useful to have such a champion in every health and social care locality.
36. Opportunities to present 'good news stories' case studies of clients were fruitful, e.g. at the Locality Celebration in one area and at a lunch club.
37. There were some very fruitful HES Homecare referral partnerships outwith health and social care as a result of Energycarers and Home Energy Scotland colleagues' partnership and outreach work:

Annandale and Eskdale

- Advice stall at Moffat Care Fair led to contact with Annandale Transport Initiative and Annandale Bed and Bath Service.
- Briefing and referral cards and posters provided to Alzheimer Scotland, Cunninghame Housing Association Fuel Poverty Project, Dumfries and Galloway Advocacy Service, Dumfries and Galloway Carers, Eastriggs Green Room, Lockerbie handyperson service,

Marie Curie, RSABI, Scottish Land and Estates, SSAFA forces help, The Hub in Dumfries.

- Outreach to Kate's Kitchen (drop-in support facility and café), Moffat Friday club (lunch club), Langholm Day Centre
- Posters provided to community transport bus drivers.
- Partnership with Care and Repair Dumfries and Galloway.

Moray

- CLAN Cancer Support users and separately, CLAN volunteers group.
- The Oaks Palliative Day Unit – referral cards, staff training provided to staff who carry out home visits; a series of meetings for patients to hear about the service and invited to self-refer.
- Posters and referral cards provided to advice agencies, CAB, food bank, library, mobile library, Moray Handyperson service.
- Partnership with Care and Repair Moray
- Briefing to and ongoing contact with Warmer Moray network - members include Grampian Housing Association, Moray Housing Partnership, Osprey Housing, REAP (Rural Environmental Action Project) and The Moray Council. Feedback from this group led to the extension of the pilot area to include all of Moray rather than only the Health and Social Care Partnership area of Moray East as planned.

38. Based on what householders told us about how they heard about Home Energy Scotland, local press advertising, editorial and targeted Facebook advertising did not generate enquiries from households, although they may have contributed to raising awareness and trust.

Annandale and Eskdale

- Advertorial in January and February 2018 editions of Dumfries and Galloway Life magazine; advertisement in Annandale Observer, Annandale Herald, Moffat news.
- Promotion through Facebook advertising targeted to carers and to demographic likely to be carers of aging parents.

Moray

- Advertisement in three editions of Press and Journal Moray edition, advertisement in Northern Scot, Banffshire Journal, Forres Gazette.
- Promotion through Facebook advertising targeted to carers and to demographic likely to be carers of aging parents.

Working with Care and Repair

Care and Repair are well-networked and in contact with the target client group. As partners in the HES Homecare pilot they identified and made referrals to HES Homecare and provided local procurement and management of small repairs and enabling work.

39. There was potential to add value by combining the housing repair grant managed by The Moray Council with HES Homecare intervention fund to offer 100% funding to vulnerable householders who would not otherwise take up the housing repair grant. In practice, the housing repair grant was exhausted before the HES Homecare household was ready to take this up.

40. Care and Repair did not have the capacity to take on additional work but were keen to be involved in the pilot. In Dumfries and Galloway the structure and staff were flexible enough to provide additional staff time for some of the pilot period, which required additional funding. In Moray additional staff time was not available. With greater resources, Care and Repair could perform an even more valuable role in supporting householders to select contractors, get quotes and apply for grant funding for small repairs and energy saving improvements.

Capturing the benefit – case studies, feedback and evaluation

41. The benefits to each householder are complex, personal and often hard to quantify.
42. We were unable to gather enough evaluation questionnaires to inform a statistically robust quantitative analysis – Energycarers and Community Liaison Officers fed back that the questionnaire was long, seemed repetitive and they felt it was unrealistic to ask very vulnerable householders to participate.
43. Because of the nature of the client group, the time taken to complete an evaluation survey interview was longer than had been anticipated.
44. Households that participated were selected by their Energycarer or Community Liaison Officer as being able to cope with the interview, so the responses represent the most able households visited.
45. Of the 13 households that completed before and after surveys, eight households did not report changes that we know were made in their home, e.g. new oil central heating. Because of this we are not confident that householders accurately reported changes in their wellbeing or home comfort.
46. The case studies captured whether the household was in fuel poverty before or after receiving support, whether their home was too cold or too warm, and whether this was due to behaviour, heating system/fuel or insulation. These considerations and temperature and humidity data collected during the pilot could be used to analyse individual cases.
47. It was useful to have the same Energycarer working with households and with referral partners, although sometimes challenging to prioritise between the two. We did not try separating the two functions but we did draw on the wider Home Energy Scotland teams to support with partnership building to allow Energycarers to prioritise casework. This flexibility among the teams was useful.

Local delivery as part of a national advice network

48. HES Homecare was delivered through Home Energy Scotland. Home Energy Scotland is delivered through a network of five regional advice centres that engage with local services and community organisations. This local delivery of a national service, which includes specialist expertise, allowed HES Homecare to benefit from both the local relationships and the strengths of the national infrastructure. Some examples of how these benefits were realised in the HES Homecare pilot are set out below.



Local relationships

- Local energy advice provider [REAP](#) (Rural Environmental Action Project) in Moray provides fuel billing advice and advocacy. When REAP experienced a funding gap in 2018 HES Homecare was able to support householders with advice temporarily while Home Energy Scotland was supporting REAP to secure further funding by providing evidence of the value of the REAP service to householders in the area.
- The Home Energy Scotland partnership with the new Cunninghame Housing Association Fuel Poverty Project in Dumfries and Galloway led to several referrals to HES Homecare from this project and vice versa. The Energycarer introduced the Cunninghame Housing Association project staff to local organisations and maintained contact with them through a period of staff changes to ensure their new staff were made aware of the HES Homecare service.
- Because there was a dedicated HES Homecare Energycarer in the locality, they were able to build strong relationships with local influencers. This opened doors helping the project reach the most vulnerable households in the area. For example, the relationship between the Energycarer and the health and social care partnership 'champion' in Annandale and Eskdale.
- A strong relationship between Care and Repair based in The Moray Council and Home Energy Scotland increased referrals to HES Homecare.

As part of a broader national advice service:

- When one Energycarer moved on, Home Energy Scotland was able to immediately allocate another experienced and trained member of staff to HES Homecare from the wider Home Energy Scotland team to ensure there was no gap in service provision.
- Cover could be arranged for holidays or other absence.
- HES Homecare Energycarers found it useful to draw on expertise from the wider Home Energy Scotland specialist team regarding specific renewable technology solutions for hard-to-treat homes and with providing advice to private sector landlords.
- HES Homecare benefitted from access to pre-existing Home Energy Scotland infrastructure, including IT systems, training framework, insurances and processes.

Cost of delivering the service

49. The time spent per household including multiple visits and travel means the cost of delivering the service is high relative to a phone-based advice service or a one-visit service.
50. Intervention funding was valuable in enabling householders to take action at £500-£5000 per household.
51. The intervention fund on its own would not have been sufficient to deliver the improvements that HES Homecare achieved. The intensive support was just as valuable and resulted in:
 - Householders completing the Warmer Homes Scotland process where they had previously been unable to (some of them multiple times), as detailed previously.
 - A long-term dampness problem being addressed.
 - Improvements to private rented property that would otherwise not have been made.



Conclusion

Scottish Government advised that any roll-out of the Energycarer service throughout Scotland in 2019-20 would not include an intervention fund.

In our view, the HES Homecare service even without an intervention fund is valuable.

An Energycarer service should:

- Focus Energycarer support on the most vulnerable households.
- Consider capacity (number of households supported) alongside quality/intensity of service.
- Provide practical and emotional support:
 - To install improvements whether grant funded or self-funded.
 - To help households liaise with energy suppliers, including advocacy if needed.
- Establish a relationship of trust through taking the time to follow up casework and visit more than once if necessary – householders were more willing to take advice about supplier/tariff switching because of trust built up through an ongoing relationship.
- Monitor whether households are in fuel poverty before and after support.
- Maintain and expand a network of organisations offering further support, e.g. mental health, social services, legal advice, CAB, befriending, grant bodies.