**Heat Pumps in Domestic Cumbrian Properties:**

**Householder views and experiences**

January 2021

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Glossary

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| **Term** | **Definition** |
| Air source heat pump | Uses warmth from the outside air for both heating and hot water in homes |
| Air to water source heat pump | Air source heat pump which transfers heat to water through wet central heating |
| Air to air source heat pump | This type of air source heat pump does not provide hot water – it blows warm air into the home |
| Ground source heat pump | Uses heat extracted from the ground to heat homes |
| Water source heat pump | Uses heat extracted from water to heat homes |
| Green Homes Grant | This grant covers two thirds of the costs of energy efficient measures up to the value of £5,000. If someone within the house receives certain benefits, up to 100% of the cost up to £10,000 can be covered |
| Domestic Renewable Heat Incentive (RHI) | This scheme provides quarterly payments over 7 years based on how much green energy will be produced each year from the system installed |

Introduction

The use of heat pumps as a means of heating homes has increased considerably in the last decade, encouraged by financial incentives such as the Domestic Renewable Heat Incentive (DRHI) and in October 2020, the Green Homes Grant.

The experiences of those living in homes where heat pumps have been installed ranges from excellent to disastrous, so this piece of research aims to do 3 things:

* To compare the experiences of those in Cumbria who already have a heat pump installed, and to understand what made these installations successful or unsuccessful.
* To understand the reasons why some householders have chosen not to install a heat pump in their home.
* To provide useful information for those who are considering installing a heat pump in their home.

Data was collected though 134 questionnaire and 17 interviews. Questionnaires were promoted though CAfS newsletter and LinkedIn and were undertaken on SmartSurvey.

Interviews were split into 3 categories to focus on the different participants’ views of heat pumps. This included looking at those who have heat pumps installed, those who found heat pumps were not suitable for them and those who wish to install a heat pump.

Summary of Findings

The views collected in this research were all from householders with a varying range of knowledge and experience of heat pumps. The research highlighted the wide range of experiences from very positive to very negative.

Some householders identified the building fabric (high levels of insulation, air tightness and properly controlled ventilation) as an important “partner” to the heat pump installation.

Many of those who took part in the research believed that seeking professional, independent advice (not from a company trying to sell a product) should be the first step in considering a heat pump.

They pointed out that while there is a cost to this advice, it could reduce the risk of an unsuccessful installation which would be much more costly.

Some suggested that a whole house assessment of the property was necessary (i.e. looking at what it takes to heat the house generally and at the coldest times of year, improvements to the building and correctly sizing the heat pump required).

Some respondents suggested that a proper diagnosis would identify those houses that were not currently suitable for a heat pump installation (or at least, not without considerable investment in the building fabric). In these cases, alternative home improvement options could be identified.

Householders felt that there needs to be further education and qualifications for those installing heat pumps, to ensure consistently high standards of installation. Although these installers are TrustMark approved, there seems to be a lack of knowledge regarding when ***not*** to install a heat pump, how to size a heat pump correctly, and how to fix these systems if they break.

Some householders felt that the increase in demand due to government grants has meant that jobs are not finished to the standardrequired to keep homes adequately warm all year round.

Householders identified a need for better awareness and understanding of heat pumps among home-owners. They feel that government grants give people the ‘green light’ indicating that heat pumps are a good technology, without highlighting the pitfalls or the things that should be understood first.

The unsuccessful installations can result in a new heating system that does not work at all or works but is too small to heat the building concerned. This is where those householders have realised that it is critically important to get the right level of independent advice prior to getting a heat pump installed.

Questionnaires:

**Question 1- In which district of Cumbria do you live?**

**Question 2- What is your existing heating system?**

**Question 3- If you have a heat pump installed: What type? When was it installed?  What was the approximate cost of installation? How effective do you think it is in heating your home?  What are your thoughts on the running costs of it?**

* Air source, £12,000. Not effective at all and wasted money, temperature is just about liveable
* Air source, £8,000. Very effective as house is near Passivhaus standards which is virtually airtight. Heating now costs a fraction of the price.
* Ground source, £20,000. Works excellent.
* Had one in a previous rented property. Reduced bills and flat was far warmer.
* Air source, £27,000 including piping, boiler, triple glazing and underfloor heating on two floors. Works effectively.

**Question 4- If you do NOT have a heat pump installed, to what extent does your current system meet your heating requirements?**

**Question 5- Have you ever considered or would consider installing a heat pump for your home and what type would this be? Why?**

* Air Source, Ground Source and Water Source all considered
* Wish to reduce household energy bills and reduce reliance on non-renewable energy
* More consideration and professional advice needed to make this decision

**Question 6- If you are considering or would consider a heat pump, which type are you most likely to choose?**

**Question 7- If yes, what would you be willing (or anticipate?) to spend on heat pump systems?**

**Question 8- Other than your own experience, if you know of anyone who installed a heat pump in Cumbria, please tell us about it briefly – for example, the type of pump, where in Cumbria, and how successful has it been?**

* Very briefly mentioned that heat pumps work more efficiently in more insulated, airtight properties.
* Heat pumps work better when paired up with solar panels as they reduce non-renewable energy consumption to power the electricity.
* Can be difficult to fix problems with heat pumps- found to have ‘teething’ issues when setting up the new systems.

**Question 9- What do you believe are the top three most important benefits of heat pumps? (Please Choose 3 Only)**

**Question 10- What do you believe are the top three limitations of heat pumps (especially in Cumbria)? (Please Choose 3 Only)**

**Question 11- Are you aware of grants/schemes available for heat pumps?**

**Question 12- Do you believe that using grants and incorporating heat pumps will help reduce fuel poverty within Cumbria?**

Interviewees said that….

* Heat pumps should be installed into social housing and more support for landlords and tenants with private rental.
* Should consider other primary energy saving measures before heat pumps such as insulation, glazing and draughtproofing.
* Need more skilled installers (more investment in training). Many contractors have done a poor job and left the property less efficient than it was to start with- increasing energy bills and fuel poverty.
* More schemes that do not need upfront costs or payments that those of a lower income can afford (those not installed to full cover of installation).

**Question 13- What do you believe can be done further to help make heat pumps more mainstream within domestic heating systems (especially in Cumbria)?**

Interviewees suggested….

* Provide more educational sources which are factual and non-biased.
* Provide case studies, tours and real data which people can compare to their own property.
* More free/impartial advice
* Work on current house efficiency such as improvement to insulation, airtightness, glazing, underfloor heating before jumping to get a heat pump.
* Provide more education and qualifications (as government grants/schemes) for installers to be properly trained to install heat pumps and to have a good knowledge of them.
* More grants and schemes that are easy and accessible to everyone.

Interviews:

**Interview 1- Interview for those who have heat pumps installed:**

Interviewees said that….

* Significant work may need to be carried out prior (look at other grants that may be available) to ensure heat pump works as efficiently as possible.
* Get a good installer. This can be though looking at recommendations and getting as many quotes as possible before making the final decision on your installer.
* Having a heat pump is very different to using central heating as the temperature is lower and consistent rather than intense heat a few hours each day.
* Once a heat pump is set to the chosen temperature, it should not be fiddled with as this will disturb it and cause problems.
* More generous grants for those who cannot make up front payment.
* Take independent advice before installing a heat pump (acts as an investment so heat pump runs as efficiently as possible).
* There is no point installing a heat pump if the house is not suitable. In this case, alternative measures should be taken to make the property more energy efficient.
* More information should be promoted on social media with factual, professional information.

**Interview 2- Interview for those who have considered a heat pump but it wasn’t suitable for their home:**

Interviewees said that….

* There need to be significant improvements to insulation levels before installing a heat pump, but if house is already sufficiently well insulated, go for it.
* Concern for diseases such as legionella with lower temperatures.
* Need to have better information regarding heat pumps online with less gaps. This information needs to be easy to understand.

**Interview 3- Interview for those who are considering a heat pump:**

Interviewees said that….

* There is a specific concern as to what will happen in the future with regards to non-renewable supplies and increase in costs.
* There will be a reduction in carbon emissions – it is about doing the right thing and moving forward in a more sustainable way.
* To reduce fuel poverty and add value to the property.
* Should have better networking within Cumbria to connect with those who have had experience of a heat pump, to be able to give advice.
* To have more content on the television to give access to information who may not have internet and cannot get out the house much.
* Have more free, available academic literature.
* Grants should be easier to access and simple to use.
* Need for more skilled installers.

Credits

* Jessica Scott
* Jenny Lyon
* Andrew Northcott
* Tina Holt
* Rick Squires

References

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