Department of Energy & Climate Change

Process Evaluation of the Warm Front Scheme

Prepared by Ipsos MORI and University College London (UCL) for the Department of Energy and Climate Change

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Glossary of key terms

Advisory stakeholder – includes members of the Fuel Poverty Advisory Group, members of the Delivery Advisory Board and quality assurance organisations.

Beneficiary – a person or household who received measures under the scheme.

Carillion Energy Services (CES) – the scheme manager. Carillion completed its takeover of Eaga, which had formerly managed the scheme, in April 2011.

Carbon Emission Reduction Target (CERT) – required certain gas and electricity suppliers to achieve targets for reducing carbon emissions within domestic properties. The scheme ran between 1 April 2008 and 31 December 2012 and followed the Energy Efficiency Commitment (EEC) 2005-2008. CERT

The Community Energy Saving Programme (CESP) – DECC set an overall carbon emissions reduction target of 19.25 million tonnes of carbon dioxide. This was to be met through requiring gas and electricity suppliers and electricity generators to deliver energy saving measures to domestic consumers in specific low income areas of Britain. CESP came into force on 1 September 2009 and the obligation period ran from 1 October 2009 to 31 December 2012. CESP was created as part of the government's Home Energy Saving Programme.

Compact Florescent Lightbulbs (CFLs) – commonly known as 'energy saving light bulbs.'

Delivery Advisory Board (DAB) – established by the scheme manager in 2009/10 to provide an independent challenge and a source of advice to the Warm Front Scheme. Membership included representatives from consumer and charitable organisations, active over the issue of fuel poverty in the UK, alongside DECC. The group met quarterly.

E-bid –a blind bidding process designed to maximise competition between installers and to drive down the price of installations under the scheme.

Fuel poverty – The Government plans to adopt a new definition of fuel poverty: a household is fuel poor if they have required fuel costs that are above average (the national median level); and, were they to spend their required fuel costs they would be left with a residual income below the official poverty line (Low Income High Cost indicator). For the purposes of this evaluation, however, the definition employed in the course of the Warm Front scheme is used – a household was considered to be fuel poor if it would need to spend at least 10% of its income in order to heat the house to an acceptable level of warmth.

Fuel Poverty Advisory Group (FPAG) – an advisory non-departmental public body which advises on the effectiveness of policies aimed at reducing fuel poverty, and encourages co-ordination across organisations working to reduce fuel poverty.

Installers – Installers and installation companies which worked to install Warm Front measures.

Networkers / Networking teams – the Warm Front Network Team worked with key stakeholders to support the generation of referrals for the scheme and enable access to some of the most vulnerable of Warm Front's beneficiaries.

Policy stakeholder – member of the DECC team.

Referral – for the purpose of this report, the term ‘referral’ is used to indicate an application which came to the scheme manager through a third party organisation, rather than directly from the applicant themselves.

Referral network stakeholder – third party organisations working to generate referrals for Warm Front, including charities and local authority.

SAP rating - Government’s tool for assessing the energy performance of dwellings. The higher the SAP number the better the energy efficiency performance of a dwelling.

Scheme applicant – anyone who made an application to the Warm Front scheme, whether successful or unsuccessful.

Scheme management stakeholder – members of the CES management team and other CES staff.

Stakeholder – anyone involved in the scheme who was not a scheme applicant.

Successful applicant, unsuccessful on second application – Applicants who received some measures from Warm Front, but then reapplied and did not receive measures on their subsequent application.

Successful applicants – those who applied to Warm Front and received measures.

Supply chain stakeholder – manufacturers, suppliers of materials, those involved in aftercare, and others involved in the supply chain.

Unsuccessful applicants – those who applied to Warm Front but never received measures.

Vulnerable households – households containing older people, children and long-term sick and disabled people.

1. Executive summary

1.1. Background

For over 10 years, the Warm Front scheme was the primary tool through which Government sought to improve the energy efficiency of the homes of private tenure households in or at risk of fuel poverty[1] in England. Beginning in 2000, and closing in 2012/13, Warm Front provided energy efficient heating and insulation measures to households in receipt of certain benefits. Properties also had to be poorly insulated and/or not have a working central heating system to be eligible under the scheme.

Ipsos MORI and University College London (UCL) conducted an independent process evaluation of the scheme's operation. The evaluation focused on the period in which the scheme was managed by a single contractor, between 2005 and the scheme's close. This evaluation was commissioned to explore strengths and weaknesses of scheme processes, in the following areas:

- Effectiveness of management and delivery;
- Value for money in comparison with the general market;
- Any benefits or negative impacts on the supply chain; and
- The extent to which the scheme met customers' expectations.

1.2. Methodology

The evaluation comprised of both primary qualitative research, and secondary quantitative research. Qualitative research was conducted between 16th September 2013 and 10th January 2014, and included:

- 40 in-depth interviews with key delivery and advisory stakeholders, including:
    - Members of the DECC team;
    - Key scheme management team members, from Carillion Energy Services (CES);
    - Advisory stakeholders, including Delivery Advisory Board and quality assurance;
    - Supply chain stakeholders, including installers, manufacturers and suppliers of materials.
- 35 in-depth interviews with both successful and unsuccessful applicants to the scheme.

UCL worked with CES and DECC to obtain secondary data for analysis, including:

- Scheme management data;
- Scheme administration data; and
- Financial data.

This report synthesises findings from the two research strands.

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[1] The Government plans to adopt a new definition of fuel poverty: a household is fuel poor if they have required fuel costs that are above average (the national median level); and, were they to spend their required fuel costs they would be left with a residual income below the official poverty line (Low Income High Cost indicator). For the purposes of this evaluation, however, the definition employed in the course of the Warm Front scheme is used – a household was considered to be fuel poor if it would need to spend at least 10% of its income in order to heat the house to an acceptable level of warmth.

1.3. Management of the scheme

Management of the scheme by a single national organisation

Between 2005 and 2013, Warm Front was managed by Carillion Energy Services (CES), formerly known as Eaga. Most stakeholders, including those involved in policy, management and the supply chain, were supportive of the decision to have a single organisation acting as the scheme manager. They felt it promoted consistent external messaging to stakeholders and the wider market and also assisted effective internal communication.

A few local delivery stakeholders debated the advantages offered by a number of more locally based managers. They felt a scheme set up in this way would have better connection to the specific target audience and offer greater flexibility in providing energy efficiency measures and timescales that were tailored to particular needs. On balance, however, it was the national scale and consistency achieved by Warm Front which was felt to have made the scheme unique.

Management of the external supply chain and wider stakeholders

CES had a specific team of staff set-up to communicate directly with the installers working under Warm Front. This installer management team were praised by many supply chain stakeholders for their effective and knowledgeable communication. However, their positive feedback on the clarity and timeliness of this communication was not always shared by advisory stakeholders. Some stakeholders from local authority, the third sector and advisory bodies felt the messaging they received around the scheme was unclear and received at short notice.

Management of the scheme closure

Warm Front closed to new applicants on 19th January 2013. Policy and scheme management stakeholders were positive about the planning process for closing the scheme as they felt they achieved clear timelines, good collaboration and strong project management. These stakeholders, as well as those in the supply chain, were also positive about some adjustments made to the scheme design in 2013 which were felt to have contributed to a smooth and efficient wind-down of the scheme. These included the widening of the eligibility criteria to broadly match those used for ECO Affordable Warmth, the switch back to directly allocating work to installers, and the splitting of the initial surveys between different teams

There were concerns voiced by a range of stakeholders, however, that following the closure announcement the scheme management teams were cut too quickly. The challenges this created were apparently exacerbated by an underestimation of the number of applications that would be received in the final few months of the scheme.

Quality assurance of the scheme

The management and delivery of Warm Front was governed by a range of quality assurance processes, ranging from checks on the eligibility of applicants to requirements placed on installers for particular health and safety certifications, and to inspections on installations. Throughout the lifetime of the scheme, Warm Front was formally audited to ensure these processes were being followed. This evaluation found general agreement across the breadth of stakeholders and householders involved that the scheme's quality assurance processes were effective. These processes were not reported to have negatively impacted either installers or householders. However, some advisory and supply chain stakeholders were concerned about the change in inspection regime from 100% of gas and oil heating installations to 10%. This change was made in 2011 due to wider changes to the scheme. Their main concern was that this change may mean initial installation defects were not detected until the annual service visit.

Interaction of Warm Front with other actors and policies

Two key bodies working with the Warm Front scheme management and policy team were the Delivery Advisory Board (DAB) and Fuel Poverty Advisory Group (FPAG). The DAB was established by CES specifically to advise on Warm Front while the FPAG is a formal group that advises government on its progress in meeting fuel poverty targets. Overall, most stakeholders agreed that the involvement of these groups was a strength of Warm Front. They offered assistance understanding the target audience, spreading communications to a wider range of interested stakeholders and linking in to other initiatives. Stakeholders from these groups felt the scheme could have benefited further from their involvement if they had been given greater remit to feed into key decisions around the scheme's design.

Many stakeholders, from across the various groups interviewed, agreed that Warm Front had benefited from interactions with local authority and other schemes running in parallel such as Carbon Emission Reduction Target (CERT)[2] and the Department of Health flu vaccination programme.

1.4. Value for money

While the remit of this evaluation did not extend to a full cost benefit analysis of Warm Front, it did explore stakeholders' perceptions of the value for money of the scheme. Stakeholders' views were fairly mixed with most able to point to elements of the scheme which they felt worked in favour of it achieving value for money. However, many also identified other aspects of the scheme's design which they felt had worked against this.

Many stakeholders, including those involved in policy, management and supply, felt the centralised control held by the single scheme manager contributed to value for money. They felt this was achieved due to the economies of scale allowing Warm Front materials to be bought at a lower price than if purchased on the open market. However, a more locally managed scheme may have yielded lower labour and travel costs according to some installers and local authority.

Some stakeholders admitted that installations could have been completed more cheaply than the prices paid through Warm Front (particularly when work was directly allocated to installers). However, most of these stakeholders believed value for money had still been achieved due to the high quality and after care standards offered to successful applicants.

E-bid and value for money

In 2010 DECC introduced the e-bid system (it started to be phased in from November 2009). In contrast to the previous system of directly allocating work to installers, e-bid was a closed bidding process. Installers were able to see the available jobs on a shared portal and could bid for the work they wished to complete. The contracts were awarded to the lowest bid although the price of this was not revealed to the participating bidders. Policy and scheme management stakeholders explained that the e-bid process was introduced with the aim of improving value for money by bringing in market competition.

Nearly all stakeholders agreed e-bid was successful in reducing prices paid (with reports of price falls between 30-60%). However, some had suggestions for ways in which the process could have been improved, for example, by opening up the bidding process to enable a price signal to be sent to the market, and having a floor price to prevent very low bids being submitted. The value of these improvements was particularly stressed by installers who often reported that the e-bid system encouraged the submission of very low bids which forced some supply chain organisations out of the scheme.

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[2] Further information about CERT can be found here: http://webarchive.nationalarchives.gov.uk/20121217150421/www.decc.gov.uk/en/content/cms/funding/funding_ops/cert/cert.aspx

Effectively targeting fuel poor households

Another aspect of the scheme which stakeholders debated in relation to value for money was the targeting of households living in fuel poverty. The scheme's eligibility criteria were based on a requirement for applicants to be in receipt of certain household benefit payments. It was recognised by many stakeholders that using receipt of benefit payments as a proxy fuel poverty was challenging.

Policy stakeholders explained that the eligibility criteria changed during the lifetime of the scheme as they attempted to improve this targeting. Some felt that the initial eligibility criteria (which included recipients of Disability Living Allowance) were too broad as they had the impression that some recipients may have been able to finance the measures themselves. This view was also shared by the NAO's 2009 assessment of Warm Front[3]. These stakeholders felt this counted against the value for money delivered by the scheme as the funds may not have been helping those in greatest need. The eligibility criteria were subsequently narrowed substantially in 2011, including the removal of DLA as a qualifying benefit and the introduction of SAP ratings as a qualifying criterion.

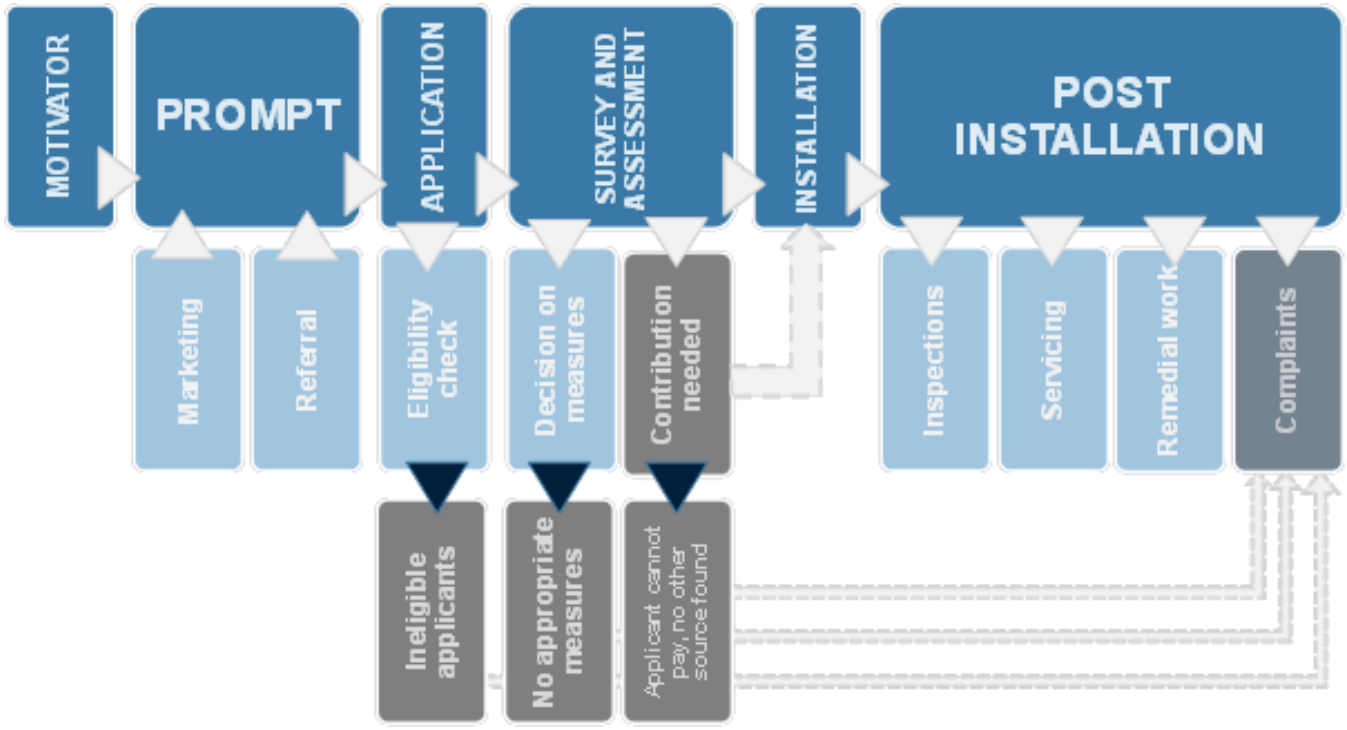
However, some stakeholders, including from the policy and management teams, felt the criteria became too strict. They observed an adverse effect of fewer households being supported by the scheme as it became difficult to identify those meeting the stricter eligibility criteria. Many stakeholders, particularly from advisory groups, felt this demonstrated that the scheme's resources were not being maximised or used to best effect.

3 http://www.nao.org.uk/report/the-warm-front-scheme/

1.5. Customer Journeys

The process diagram below summarises the customer journey, from the motivation for their application to Warm Front, through to experiences post installation.

Figure 1 - Customer journey map - Warm Front



Application

Customers generally sought help from Warm Front because they were cold in their homes, or at risk of being cold in the near future. Many said that they would be unable to finance a solution to this problem themselves. The scheme used receipt of certain benefits as a proxy measure to identify households in fuel poverty, and it was generally agreed by stakeholders that this was a necessary, though imperfect, approach.

Householders heard of the scheme through a number of channels and sources. The system through which third party organisations worked to generate ‘referrals’ to the scheme was felt to be a key strength of the scheme. Referral organisations were supported by scheme management run ‘networking teams’ which were again seen as a strength of the scheme. There was regional variation in the extent to which the scheme was promoted by third parties, but nationally, there was agreement among stakeholders that the referral system helped Warm Front to reach some of its most needy customers. Though most customers reported finding the application process straightforward, stakeholders reported that the referrals system helped and guided those who were more likely to struggle, for example those with low literacy or English as a second language.

Application decision and installation

The period between application and survey was similarly smooth for some, though others experienced frustration due to lack of communication about their application, which exacerbated their concern during their wait.

Decisions on what, if any, measures would be installed in a property were generally clearly communicated to customers. In the vast majority of cases, the Warm Front scheme covered the

full cost of measures installed, without a contribution being made by the customer or a third party.

Householders were generally satisfied with the installation process and the quality of their installation, and were grateful to have received measures they could not otherwise have afforded. There was some indication that, despite explanations from installers, some householders had not fully grasped the operation of their new heating systems, and that they were not, therefore, using the new systems to best effect.

Post installation

Satisfied customers of Warm Front often spoke of the speed and smoothness of the end-to-end process, which suggests that highlighted concerns of stakeholders about long waiting times and issues with installation were not an issue for the majority. Installed measures often came as a great relief for Warm Front customers, addressing long term worries about heating and warmth, and improving comfort for many, and health and happiness for a few.

Though most installations and measures were trouble-free, a substantial minority of customers had experienced some problems with their installation. Some had taken steps to get these problems resolved by the scheme manager, and had mixed success in doing so. Others, however had saved in order to finance their own solution, or simply lived with the problems or issues they had. Other complaints were due to changes to the eligibility criteria, poor communication or failure to manage customers' expectations of the scheme.

1.6. The impact and legacy of Warm Front

Impact on households

Overall 1.5 million households were assisted by the Warm Front scheme from 2005 to 2013. Analysis of the scheme's administrative data shows that of these, approximately 922,000 properties received at least one major measure.[4] On average two measures were installed per household, excluding compact fluorescent light bulbs (CFLs). This quantitative analysis also shows that while in 2005 two thirds of successful applicants lived in "hard-to-treat"[5] properties, this proportion was as high as 80% in 2012/2013.

Almost all stakeholders spoke in very positive terms about the overall impact of the scheme. They mostly held this view because of the large number of households it managed to help, many of whom stakeholders felt would not have been able to access support otherwise, or who lived in "hard to treat" properties. The sheer scale of the provision of measures to such households was seen as a key success of Warm Front.

Impact on the supply chain

There were mixed views on the impact of Warm Front on the supply chain. While for many, Warm Front was a minor part of their overall income, such was scale of jobs available through the scheme that some installer organisations, in particular, reported experiencing exponential growth in their turnover and workforces. Many of those who were small prior to entering the scheme, and who used the scheme to grow in this way, then became very dependent on Warm Front and struggled when the scheme contracted. Larger installers felt they were better placed to deal with this, and in many cases the market was consolidated as the smaller firms went bankrupt or were bought by larger firms.

[4] Major measures are all energy efficiency measures (i.e. loft and cavity wall insulation, heat system replacements (e.g. boilers) and draughtproofing. The measure excludes compact florescent light bulbs.

[5] Homes with solid walls; those built pre-1929; those without a loft cavity; and those not on the gas network were classed as hard-to-treat under Warm Front.

2. Introduction

2.1. Background to this research

Fuel poverty

The UK Fuel Poverty Strategy, published in November 2001, set out the Government's policies for ensuring that in England by 2016, as far as reasonably practicable, people do not live in fuel poverty. The Strategy included a suite of policies to target the three main factors that influence fuel poverty:

- Household energy efficiency;
- Fuel prices; and
- Household income.

The Hills Fuel Poverty Review, published in 2012, showed the significance of poor energy efficiency in driving both the extent and depth of fuel poverty. Following this review, the government will be adopting a new definition of fuel poverty, which uses a low income, high cost indicator: households will be considered fuel poor it they have required fuel costs that are above average (the national median level); and, were they to spend their required fuel costs they would be left with a residual income below the official poverty line. During the term of the Warm Front scheme, a household was considered fuel poor if it would need to spend at least 10% of its income in order to heat the house to an acceptable level. This is the definition used for the purpose of this report.

The Hills Review sets out the case that improving the energy efficiency of the homes of the fuel poor is usually the most cost-effective and sustainable approach to alleviating the problem.

The Warm Front Scheme

For over 10 years, the Warm Front scheme was the primary tool through which Government sought to improve the energy efficiency of the homes of private tenure households in England in, or at risk of, fuel poverty.

Warm Front began in 2000, as a successor to the Home Energy Efficiency Scheme. The last year of the scheme's operation was 2012/13, with completion of work undertaken in 2013/14. The scheme underwent a number of changes during that time, both in terms of funding and in terms of eligibility for the scheme.

The main aims of the Warm Front Scheme were:

- To ensure that the most vulnerable households in England need no longer risk ill health due to a cold, damp home;
- To improve household energy efficiency in vulnerable households and therefore reduce greenhouse gas emissions;
- To reach owner occupiers and those living in the private rented sector; and
- To alleviate fuel poverty.

The scheme operated across England.[6] It provided a range of energy efficient heating and insulation measures to private tenure households in receipt of certain income related benefits. From April 2011, households also had to be living in properties that were poorly insulated and/or did not have a working central heating system (identified by a SAP rating[7] of 63 or below). Grant

[6] There are separate schemes in the devolved nations.

ceilings changed at various points in the scheme. At their peak, eligible households were entitled to grants of up to £3,500 (or £6,000 where an oil heating system or renewable technology was recommended).

DECC (and its predecessor Defra) contracted out the scheme administration from the inception of the scheme. Since 2005 the delivery model involved management of the scheme by a single contractor. This contractor was originally Eaga, which was then taken over by Carillion, becoming Carillion Energy Services (CES).[8] The scheme manager was responsible for:

- A central applications service and call centre;
- Marketing of the scheme, including through referrals from third parties;
- Managing the supply chain of both surveyors and installers;
- Customer complaints service; and
- Aftercare service for gas boilers installed.

The performance of the scheme was monitored and assessed through:

- Key performance indicators for CES's administration of the scheme;
- Governance arrangements including regular meetings with a Delivery Advisory Board;
- Annual reports produced by the scheme administrator;
- Quality assurance reports by independent assessors;
- National Audit Office reviews; and
- A number of external evaluations conducted in 2006[9][10] 2008[11] and 2009[12], which focused on the positive health impacts of the scheme.

As the scheme came to an end, DECC worked closely with the scheme manager to advise and inform the exit planning, and to arrange transfer of data gathered from CES to DECC. It is in the context of the scheme's close-out that this final process evaluation has been conducted.

In commissioning a final process evaluation of the scheme, DECC sought to record the processes that served the scheme well and those that may have hindered further success. In doing so, it is hoped that lessons can be learned to inform the delivery of future energy efficiency schemes targeting the fuel poor – including the Energy Company Obligation.[13]

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[7] The Standard Assessment Procedure (SAP) is the methodology used by the Government to assess and compare the energy and environmental performance of dwellings. Its purpose is to provide accurate and reliable assessments of dwelling energy performances that are needed to underpin energy and environmental policy initiatives.

[8] The Scheme Manager refers to the organisation that was originally Eaga, and which became CES.

[9] Gilbertson, J., Stevens, M., Stiell, B., Thorogood, N., (2006). Home is where the hearth is: grant recipients' views of England's home energy efficiency scheme (Warm Front). Soc. Sci. Med. 63, 946–56.

[10] Oreszczyn, T., Hong, S.H., Ridley, I., Wilkinson, P., (2006). Determinants of winter indoor temperatures in low income households in England. Energy Build. 38, 245–252.
Hong, S.H., Oreszczyn, T., Ridley, I., (2006). The impact of energy efficient refurbishment on the space heating fuel consumption in English dwellings. Energy Build. 38, 1171–1181.

[11] Green, G. and Gilbertson, J. (2008). Warm Front, Better Health. Health impact evaluation of the Warm Front Scheme.

[12] Hong, S.H., Gilbertson, J., Oreszczyn, T., Green, G., Ridley, I., (2009). A field study of thermal comfort in low-income dwellings in England before and after energy efficient refurbishment. Build. Environ. 44, 1228–1236.

[13] The ECO (Energy Company Obligation), launched in 2013, is an obligation that the Government has placed on energy suppliers to reduce the UK's energy consumption and support those living in fuel poverty by requiring energy suppliers to provide households with energy efficiency improvements. There are three obligations: the Affordable Warmth Obligation; Carbon Savings Obligation; and the Carbon Saving Communities Obligation. The Affordable Warmth Obligation is most akin to Warm Front, offering, as it does, heating and insulation improvements for low-income and vulnerable households in private tenure.

2.2. Research objectives

Ipsos MORI and University College London (UCL) were commissioned to conduct an independent process evaluation of the Warm Front scheme. This final process evaluation, at the culmination of the scheme, was commissioned to explore strengths and weaknesses in the following areas:

- How effectively Warm Front has been managed and delivered;
- The extent to which the scheme has offered value for money in comparison with the general market;
- Whether the scheme has created any benefits or had any negative impacts on the supply chain; and
- The extent to which the scheme met customers' expectations.

A set of research questions was laid out by DECC, and these questions were explored through a combination of quantitative and qualitative research methods. The evaluation focused on scheme delivery from June 2005 until the scheme's close, up to and including the aftercare provision into 2014. The full list of evaluation objectives stated in the brief are mapped against the relevant element of the evaluation methodology in section 9, the appendices.

2.3. Overview of methodology

At the start of the evaluation Ipsos MORI and UCL met with the Warm Front policy team to establish the scope of the evaluation and agree the approach. The evaluation approach comprised of two strands: qualitative research and quantitative analysis of existing datasets.

Ipsos MORI conducted the qualitative research, between 16th September 2013 and 10th January 2014. This research included:

- 40 in-depth interviews with key policy and scheme management representatives as well as stakeholders from advisory bodies and across the supply chain; and
- 35 in-depth interviews with applicants to the Warm Front scheme.

A further breakdown of the types of 'stakeholders' interviewed for the research is provided in Table 1 below.

UCL conducted the quantitative analysis. They worked with CES and DECC to obtain secondary data for the analysis which included:

- Scheme management data;
- Scheme administration data; and
- Financial data.

Throughout the evaluation, the Ipsos MORI and UCL teams met weekly to discuss progress, review any risks to delivery, and to exchange emerging findings. The synthesis of findings from the two strands of research was an ongoing process rather than a one-off event, and questions arising from each strand were used to challenge and inform the other. Two formal analysis workshops were also held, when the Ipsos MORI and UCL teams explored emerging findings from each strand in greater depth.

Part way through the project, an interim briefing workshop was held with the DECC policy team, Ipsos MORI, UCL, and representatives of the ECO programme. This workshop acted as a sense check for the research team. It also gave DECC the opportunity to challenge emerging findings and to contribute to the research team's understanding, from their own experience of the scheme. This final report brings together the findings of the two strands of the evaluation.

2.4. Challenges and limitations to this evaluation

It was expected that one of the key challenges in this evaluation would be the limited time available to obtain data from the scheme manager, and talk to key personnel at CES as teams were closed and the scheme wound down. Ipsos MORI visited CES early on to interview key members of staff, while UCL liaised closely with both CES and DECC to obtain scheme management data.

Despite this close liaison, there were difficulties, particularly in obtaining scheme management data. Delays meant that the CES team members with relevant expertise had sometimes left, and so were not available to answer the research team's questions about the data.

Whilst efforts were made by CES to assist UCL in their understanding of the data, there were a number of variables and codes in the datasets that CES were unable to provide full definitions for. There were also a number of reporting errors in the data, in particular, of dates and times, which meant that a small amount of data had to be excluded.

During the course of the Warm Front scheme, a great deal of literature about the scheme, including annual reports, legislative documents, and quality assurance reports and audits were produced. It was not within the scope of this evaluation to conduct an in-depth review of this literature. Changes to the scheme and dates of these changes are therefore presented as they were reported by stakeholders interviewed. Given the length of the scheme, and inevitable changes to the teams involved in delivery of the scheme, it is possible that not all of the dates or changes reported by stakeholders are accurate.

2.5. Presentations of findings

Qualitative data

The term 'stakeholders' is used to refer to anyone interviewed for this evaluation other than scheme applicants. Some stakeholders are relatively niche in their role in the scheme, and in order to help protect anonymity, stakeholders contributing to the research have been grouped, and are identified according to their overarching group. The constituents of these groups are laid out in Table 1. There were some slight changes to the numbers of interviews planned over the course of the project, and these are reflected in the 'Interviews achieved' and the 'interviews planned' columns of the table. Plans to interview a number of installers who had not been involved with Warm Front proved unachievable because of the long timescale of the scheme, staff turnover and transfer within organisations, and the lack of available data on installers who had and had not been involved.

Table 1 - Stakeholder groups and numbers of interviews

Interviewee group		Interviews achieved	Interviews planned
Stakeholders	Description		
Policy stakeholder	▪ DECC team	4	4
Referral network stakeholder	▪ Third party organisations working to generate referrals for Warm Front, including charities and Local authority.	5	4
Advisory stakeholder	▪ Members of the Fuel Poverty Advisory Group ▪ Members of the Delivery Advisory Board ▪ Quality assurance	7	7
Scheme management stakeholder	▪ CES management team CES staff	7	6

Supply chain stakeholder	▪ Manufacturers ▪ Suppliers of materials ▪ Aftercare ▪ Other supply chain	5	6
	▪ Installers involved in delivery	12	8
	▪ Installers not involved in Warm Front	0	5
Total		**40**	**40**
Householders	Description		
Unsuccessful applicants	▪ Those who applied to Warm Front but never received measures[14]	3	5
Successful applicant, unsuccessful on second application	▪ Applicants who received some measures from Warm Front, but then reapplied and did not receive measures on their latest application.	4	
Successful applicants	▪ Those who applied to Warm front and received measures	28	30
Total		**35**	**35**

When quotes are used or views attributed in this report, the interviewee group is referenced. In the case of applicants the attribution also details the region in which they live, their age[15], and, if they were successful, the type of measures installed in their home.

Quantitative data

The scheme operator provided Warm Front data for the period covering 2005 to 2013. The data comprised information on the following:

- Measures provided by installers;
- Households that applied to the scheme, including:
  - Measures they received; and
  - Cost of measures.
- Surveys conducted;
- Inspections of measures conducted;
- Whether the dwellings were defined as 'hard-to-treat' or 'hard-to-reach;'
- Data on complaints made to the scheme around a host of issues.

A number of testable research hypotheses were developed to address the research questions posed by DECC. These questions (provided in the Appendices) were centred on gaining an understanding of the management of the scheme, of value for money, the customer journey, and additional benefits/ dis-benefits of the scheme.

The quantitative analysis uses disaggregated data on installers, households and measures installed. For the most part, analysis is descriptive in nature, providing figures to examine trends and impacts from the scheme. For further details on the datasets and quantitative analysis see the Appendices.

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[14] Applicants to Warm Front could be classed as 'unsuccessful' for a number of reasons. The customer journey map in Figure 1 shows a number of different points at which an applicant to the scheme could 'drop out' of the process. These include initial ineligibility for the scheme, no appropriate measures being identified at survey, and an additional contribution being needed to finance measures but funds not being available. Other reasons for unsuccessful applications included the scheme having closed at the point of application, and in one case, an apparent failure in communication between the applicant and the scheme which led to approved measures never being installed.

[15] The applicant's age at interview, rather than at application or at the point of installation, is shown. This is in part because some applicants made multiple applications to the scheme.

3. Strengths and weaknesses of the management of the Warm Front scheme

This section discusses key features of the management of the Warm Front scheme. It explores stakeholders' views on the effectiveness of having a single scheme manager, the management of the external supply chain and the scheme's quality assurance processes. The section concludes by considering the interaction of the scheme with other policies and initiatives on energy efficiency.

Key findings

- From 2000 to 2005 Warm Front was managed by two different organisations. However, from 2005 the contract for managing the scheme was awarded to a single organisation. Most stakeholders, including those involved in policy, management and the supply chain, felt the move to a single scheme manager was positive. They felt it allowed more effective communication both internally and externally and offered value for money through the central control of material specifications and pricing.
- The scheme management stakeholders felt their teams were well integrated and that this had been facilitated through effective communication and information systems. However, some policy stakeholders felt the information gathered throughout the lifetime of the scheme could have been analysed more effectively on an ongoing basis. They felt this would have helped to ensure that decisions made about the Warm Front scheme (for instance, about when to stop accepting applications or to wind-down marketing activity) were firmly grounded in evidence-based planning.
- Nearly all policy and scheme management stakeholders agreed that the processes put in place to bring the scheme to a close were effective. However, in 2013 as the scheme was brought to a close, some felt the scheme management teams were cut too quickly. The challenges this created were apparently exacerbated by an underestimation of the number of applications that would be received in the last few months. Some advisory, referral network and supply chain stakeholders were less positive about the decision to end the scheme and also the timeliness of this being communicated to them.
- The scheme management organisation had a specific team of staff set-up to communicate directly with the installers working under Warm Front. This installer management team were praised by many supply chain stakeholders for their effective and knowledgeable communication. However, many installers were less positive about some key changes made to the scheme, such as the introduction of a closed bidding system (e-bid) to allocate work to installers and the transition to an in-house survey team.
- There was general agreement across the breadth of stakeholders and householders involved in this evaluation that the scheme's quality assurance processes were effective. These processes were not reported to have negatively impacted either installers or householders. However, some advisory and supply chain stakeholders were concerned about the change in inspection regime from 100% of gas and oil heating installations to 10% in 2011.
- Policy, scheme management and advisory stakeholders agreed that the management and delivery of Warm Front had benefited from the assistance of the Delivery Advisory

Board and Fuel Poverty Advisory Group. Stakeholders from these groups felt, however, that the scheme could have benefited further from their involvement if they had been given greater remit to feed into key decisions around the scheme's design.

- Many stakeholders, from across the various groups interviewed, agreed that Warm Front had benefited from interactions with local authority and other schemes running in parallel such as Carbon Emission Reduction Target (CERT)[16] and the Department of Health flu vaccination programme.

3.1. Effectiveness of a single scheme manager

From 2005 the Warm Front scheme was managed by a single organisation, Carillion Energy Services (CES), formerly known as Eaga. Prior to this, between 2000 and 2005, the scheme was managed by two organisations. This evaluation explored stakeholders' opinions about the effectiveness of these different models and their preferences for the management of any future scheme.

Overall, most stakeholders, including those involved in policy, management and delivery, felt the move to a single scheme manager was positive. Indeed, some felt the effectiveness of having one central organisation managing the programme was a key learning to take forward to future schemes.

First and foremost, this was because they felt it helped ensure consistent communication across the full range of teams and organisations involved in delivering the scheme. Many stakeholders felt it was pivotal to the success and smooth running of the scheme that effective communication was achieved internally across the range of management teams, with the DECC policy team, and also more broadly with supply chain organisations and networking teams. Many felt a single scheme manager approach helped to achieve this.

> ***"As the whole scheme was delivered from one site it helped as you could just walk around to the other teams to speak to them."***
>
> **Scheme management stakeholder**

Many stakeholders, particularly from the policy and management teams, also felt the central control of material specification and pricing offered by having a single scheme manager was beneficial. As well as simplifying the management of the scheme, these policy and scheme management stakeholders reported it offered economies of scale helping achieve value for money (see section 4 for a more detailed discussion of value for money under Warm Front).

The stakeholders interviewed for this evaluation had not been involved in the Warm Front scheme in its early years. They could not therefore make a comparative assessment of management processes under two organisations pre-2005 and under a single organisation post-2005. However, a few stakeholders could see the potential advantages offered by having multiple scheme managers. They felt it may be advantageous, particularly at the start of a scheme, to help generate ideas for the best approach, to share learning and to provide a certain element of competition. The culmination of which they felt could lead to improvements in scheme management.

[16] Further information about CERT can be found here: http://webarchive.nationalarchives.gov.uk/20121217150421/www.decc.gov.uk/en/content/cms/funding/funding_ops/cert/cert.aspx

> ***"Inevitably if you are carrying out a similar role to somebody else…and you learn about some sensible way of doing you think that you can do that…informal competition."***

Advisory stakeholder

However, on balance these stakeholders tended to agree that ultimately scheme management is likely to be more effective if controlled by a single organisation. It was felt that the wider body of knowledge and ideas could be achieved through collaboration with other expert groups. Indeed, the management and delivery of Warm Front was assisted by two advisory bodies – the Delivery Advisory Board and the Fuel Poverty Advisory Group. The involvement of these two groups is discussed in section 3.6.1.

> ***"If you have one contract it's then how can you bring a wider body of knowledge and experience to the table so I don't think it's vital to have multiple contracts to manage something to bring that influence in."***

Policy stakeholder

Among a few policy and local delivery stakeholders there was debate about the advantages offered by a single organisation managing a scheme nationally compared with a number of more locally based managers. One advantage offered by the latter may be better connections to the target audience for a scheme. That said, the networking teams organised through the single manager for Warm Front were considered very successful and one of the key strengths of the scheme (see section 5.4 for further discussion of networking and generation of referrals).

A few policy and local delivery stakeholders also felt multiple local schemes would offer greater flexibility in providing measures and timescales tailored to particular needs. One example was given of a third sector organisation using government funding to deliver measures in a flexible way when they came across people in need. There were different views about whether a locally delivered scheme such as this would deliver better or worse value for money compared with a centrally delivered scheme however (see section 4 for further discussion of the elements of Warm Front working for and against value for money).

3.2. Alignment of operational functions

Many stakeholders reported that the scheme manager had well integrated teams working effectively together. They attributed this to good communications and a shared understanding of processes and systems. This was the view from both inside and outside CES. Internal stakeholders described effective cascading of information and shared access to full information about Warm Front applicants, while external stakeholders had the impression the scheme management teams were joined up based on their dealings with them.

> ***"The whole of the customer journey is captured on that system so from the point of application through to the point where the installation is made and through the aftercare and through any contacts that they make with the contact centre; either whilst their application is in process or any complaints that they make thereafter. So all of that information is held on a customer record on that system and various teams have all got access to that system so at any point in time anybody within any of the teams can go in and find out where that customer is."***

Scheme management stakeholder

One concern raised by a policy stakeholder was whether sufficiently detailed information was being collected and analysed by the scheme management organisation. For instance, detailed information and analysis on the number of applications in-house, their current status, the average grant spend per application, the average wait times and so on. They felt that if information such as this was being collected that it was not being shared as effectively as possible within the scheme management organisation or with the policy team. It was felt by this stakeholder that the scheme manager could have used the information available through the various teams to conduct more sophisticated analysis on progress, the financial performance of the scheme and any likely future risks. This would have helped ensure key decisions about the scheme were based on as full and detailed evidence as possible, which was not always felt to be the case, particularly between 2005 and 2010. Following the budget cuts in 2010, the DECC policy and finance teams reported becoming more demanding in their need for detailed information, and also more closely involved in the analysis of this, although it was felt this should have been the role of the scheme manager.

3.3. Perceptions of the exit planning process

The Warm Front scheme closed to new applicants on 19th January 2013. Policy and scheme management stakeholders were positive about the exit planning process. However, some supply chain, advisory and local delivery stakeholders criticised the communication of this decision and the handling of this period of the scheme.

Policy and scheme management stakeholders reported that clear timelines, good collaboration and communication and strong project management had led to an effective exit planning process.

> ***"When the scheme was running…. we'd had the monthly operations meetings…There'd be day to day contact, but it would be more ad hoc. Whereas since January [2013] we've had a teleconference twice a week, talking about the actions that need to be done, the delivery figures…how many installations are still to be done on the system…how many surveys ….."***

Policy stakeholder

Policy and scheme management stakeholders reported that during the final scheme year in 2012/2013 some processes were also adjusted with the aim of enabling the programme to close down as smoothly as possible. The changes which they reported had helped facilitate the scheme closure were:

- **A widening of the eligibility criteria**: from September 2012 the Warm Front eligibility criteria were brought in line with the ECO Affordable Warmth criteria. This was felt to have assisted a smooth transition from one scheme to the other.
- **The direct allocation of installer work**: the closed bidding system for allocating work to installers (the e-bid system) was stopped in February 2013 so that work could instead be directly allocated on the basis of installers' capacity and location. Policy, scheme management and supply chain stakeholders agreed that this helped ensure installations were assigned, and completed, as efficiently as possible.

> ***"One of the reasons it went so well towards the end, they finally stopped e-bidding and just issued the work… so everyone knew what they were doing."***

Supply chain stakeholder

- **The splitting of the survey stage**: previously a single in-home survey had been conducted following an application which covered both eligibility checks and a technical assessment of the property. In the final months of the scheme, this was split into two separate surveys so that eligibility checks could be completed more quickly with the technical assessment coming later if required.

These changes were felt to have led to a more efficient and effective period for the scheme, with the learning from previous years also brought together.

Some supply chain stakeholders shared the view that Warm Front had been closed down effectively, and indeed communicated well. One felt it had been clear since the last election the scheme would close which had enabled them to plan for the closure over a number of years, while another felt fully notified.

> ***"They've wound it down really smartly…they kept everyone involved and as the work was getting less they notified people, told us what it exactly was, what we was going to do, what we wouldn't be doing, when that could be finished."***

Supply chain stakeholder

However, some stakeholders were more critical of communications around the exit process. For example, those involved in the Delivery Advisory Board (DAB) and Fuel Poverty Advisory Group (FPAG) felt they were only notified about this decision very late in the process (further discussion of the views of the DAB and FPAG members can be found in section 3.6.1).

> ***"There was no hint of this [the scheme closure] to us. Absolutely no hint at all from officials that this was even being considered, it was handed to us as a fait accompli."***

Advisory stakeholder

It was reported that some third sector organisations were continuing to issue leaflets about Warm Front despite the scheme having closed. Stakeholders recognised that without the network teams in place it was difficult to manage communications around the scheme closure. The impact of this has been continuing applications and queries but with no teams in place to deal with them. Many stakeholders, including those in the policy and management teams, felt that the surge of applications once the scheme closure had been announced should have been better anticipated. With 18,000 customers still left to process at the start of 2013 there was an impression from some policy and advisory stakeholders that the scheme management team was cut *"too quick and too deep"*.

> ***"There was a huge demand before the scheme closed... I mean it's not surprising now, but at the time it was unexpected that we'd get so many."***

Policy stakeholder

Policy and management stakeholders reported that another challenge faced in the last months of the scheme was securing sufficient capacity in the supply chain. It was felt that by 2013 many supply chain organisations had already started focusing on ECO, and were unwilling to ramp up capacity to work on Warm Front given the scheme was coming to an end.

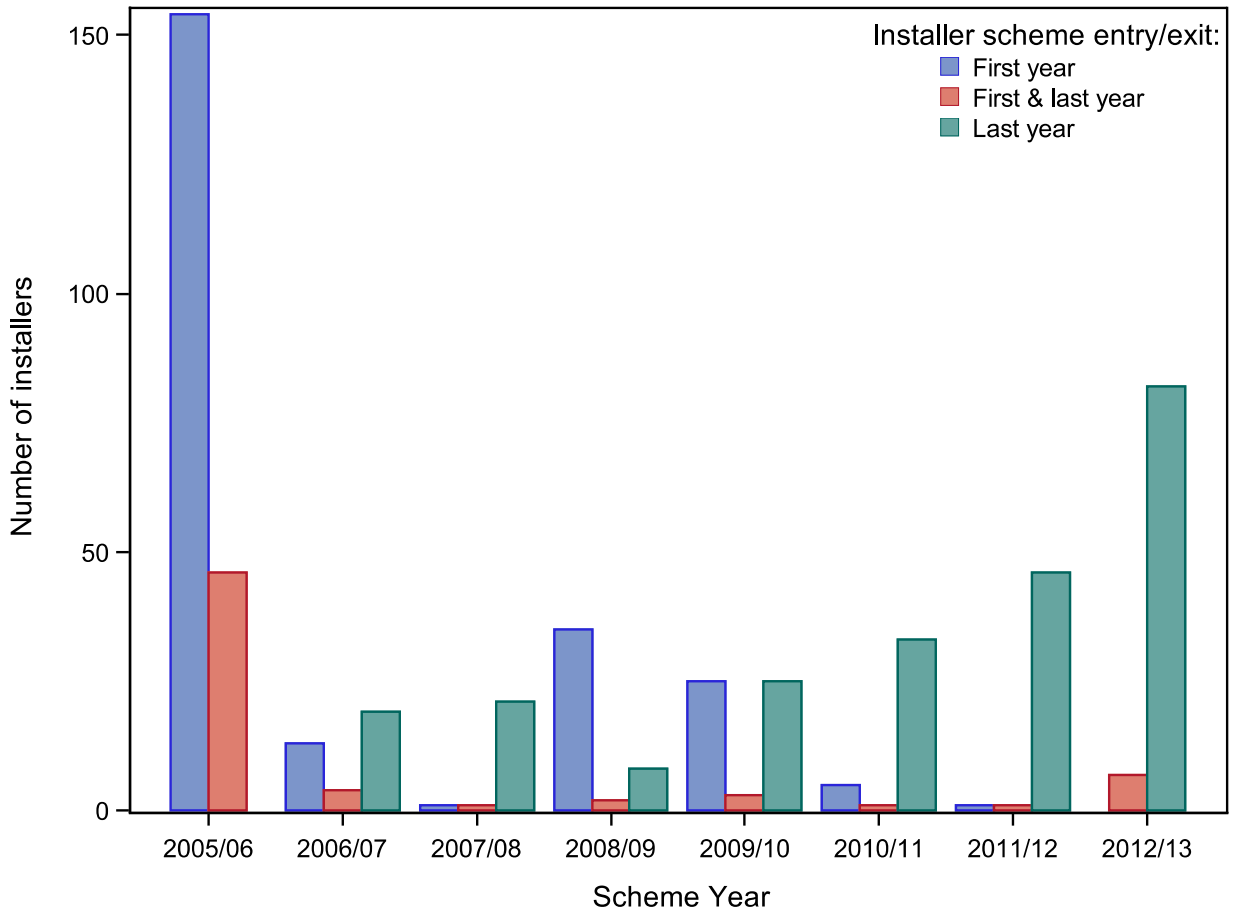
> ***"In the exit planning the installers have already started to drift off and get involved in other work, and we have been struggling a little bit to get***

them to engage and to undertake the work during this last period really… 'because I think they're trying to get involved in ECO and Green Deal and, …they just don't really care that much about Warm Front anymore."

Policy stakeholder

Using installer level data provided by CES, Figure 2 below shows the frequency of installers entering and leaving the scheme for each scheme year. The blue bars show the number of installers that have entered the scheme for the first time in that year. The red bars show the number of installers that both entered and left the scheme within that year. Finally, the green bars show the number of installers leaving the scheme in that year. This shows that while the majority of installers are shown to be with the scheme throughout, an increasing number were leaving the scheme from 2009/10 and until the final year of the scheme in 2012/13. In addition to the change of focus to work on ECO, the introduction of e-bid had a significant impact on the supply chain. This is discussed in further detail in section 4.2.2.

Figure 2 - Installers entering and leaving the scheme, by scheme year



3.4. Management of external supply chain

The installer management team at CES was generally praised by supply chain stakeholders. This team was described by many of these stakeholders as professional, responsive and knowledgeable. The systems and processes put in place to communicate with the supply chain were identified as a particular strength of the scheme.

> ***"The communication to installers was good as the CES team were approachable and understood what contractors needed."***
>
> **Supply chain stakeholder – medium to large installer**

> ***"We've had such a good relationship I think, with the contractors, and again, very open and honest with them as well…there was very much of sense of we're all in it together."***
>
> **Scheme management stakeholder**

The following elements were highlighted as particularly positive:

- The **central information portal** used to update installers on allocated work and also to provide messaging around the scheme criteria: installers found this to be a good immediate source of information and updates and other stakeholders valued its ability to ensure consistent messaging across the supply chain.

> ***"I think the installation process they put in place with the portal system was very good, in fact it's as good as any I've ever used in the industry. It was set up really well and was easy to manage and provided good level of information."***
>
> **Supply chain stakeholder – installer**

- The **regular performance reports** sent to installers: installers welcomed receiving key statistics about their own performance relative to others, for instance around the number of installations, their customer satisfaction scores, the status of complaints and so on.

> ***"It was a big learning cycle, everything was fed back in and nothing was sort of hidden."***
>
> **Scheme management stakeholder**

- **Installer roadshows held around the UK**: installers and scheme management stakeholders felt these events were useful and ensured consistent messages were shared. However, a few installers recommended that they could have been smaller events as apparently there could be up to 500 attendees which limited the opportunity for individual questions.

Despite these positive elements, some installers felt the management of scheme funds and the volume of work coming through was less good. These stakeholders reported the challenges they faced predicting their work load and estimating the number of staff required.

> ***"The one thing that used to annoy me used to be, six months you were absolutely crazy, and for six months it was quiet. That was the only bugbear I ever found…for three full months, you were absolutely***

rammed, throwing thousands of jobs at you, but then it slowed down to the case where you've got to put your guys on one, two days a week."

Supply chain stakeholder – medium to large installer

The switch from direct allocation of work to the e-bid system of winning work (phased in from November 2009) accentuated this issue as installers reported they found it difficult to estimate the volume of work they may be awarded. Further discussion of the e-bid system is included in section 4.2.2.

In addition to the introduction of e-bid, there were also a number of other changes made to the scheme which led the relationship between CES and supply chain organisations to suffer:

- **The move to bring the survey team in-house within the scheme manager organisation**: an in-house team at CES took over the technical survey visits. Many installers were not positive about this change as they felt it resulted in additional delays for the householders and wasted time and costs for the scheme and their own organisations. They explained that these impacts arose because installers would arrive at a property for the installation visit only to find an incorrect specification for materials had been given by the CES in-house team. Many installers reported instances of arriving at an installation to find the wrong size boiler or incorrect parts had been specified.

  "The surveyors were hopeless and the specification information provided was not satisfactory or accurate. We had to do a technical survey prior to the install ourselves. Otherwise we'd find ourselves sending out engineers with products that didn't fit, like a boiler not the right size for the space."

Supply chain stakeholder – small installer

- **Using in-house installation teams**: CES also had in-house installation teams at some points during the scheme. Policy stakeholders reported that a limit was set on the amount of work given to these installers and they were sometimes only eligible as a "last resort". However, a few installers still felt this was inappropriate given CES were also ultimately responsible for quality assuring installation work.

  "Eaga become an installer and instead of just policing it, so there was a big difference in the scheme then. I think, in my opinion that should never been allowed to have happened that you've got two hats on, they should have carried on policing it …and it was really good ...when concentrated solely on policing the scheme and making sure it was delivered fairly and properly to everyone."

Supply chain stakeholder (18)

Another element to the management of the external supply chain was the use of an installer bond. Scheme management stakeholders explained that the bond was designed to ensure the scheme could still cover remedial work and other liabilities in a property if the company who installed it had gone out of business. As part of the evaluation, installers and the scheme manager were asked their opinion of the bond. It would have been interesting to explore whether the bond deterred any supply chain organisations from participating however, installers not involved in Warm Front did not form part of this evaluation.

Most installers did not query the initial need for the bond, however, some felt the value of the bond should have been reduced when e-bid led to a lower volume of work for each installer.

> ***"When we first did that [signed up to installer bond] it wasn't that bad…but the way the scheme was set up at the end, I had to go through all the tendering process, we had to put a bond in place, we had to set up 24/7 call outs, we had to put the paperwork in place, do all this work, get all the insurances, all our health and safety and wasn't guaranteed one single job and that for me was the downfall of the scheme. And we kept saying that, you can't possibly expect everyone to do this and at the end of it what you get is a chance to bid, because that's all it was; no guarantee of work and no guarantee of price."***
>
> **Supply chain stakeholder**

A few stakeholders suggested alternative ways of designing this insurance policy for the scheme manager. One insulation installer believed the bond should have been lower for insulation than for heating. He felt less was likely to go wrong and therefore a much lower chance that the bond monies would end up being used. Another said that a more common approach under other schemes was for the scheme manager to retain a certain value of the work undertaken.

Section 8.4 discusses in more detail the impact of Warm Front on the supply chain, including how these organisations handled changing demand under the scheme.

3.5. Quality assurance of scheme and customer journey

Throughout the lifetime of the scheme, Warm Front was formally audited and this kept an annual record that appropriate quality assurance processes were being followed.

During this evaluation the focus therefore was to understand how various stakeholder groups felt about the quality assurance processes, their experiences of what these involved, and what the impact of these processes had been on them.

Overall, the experience of the quality assurance elements of Warm Front has been positive. Stakeholders generally felt these had been necessary, as well as effective. There was little evidence to suggest any negative impacts on any groups of stakeholders, or indeed the applicants themselves.

This section goes on to discuss the quality assurance processes and checks for confirming applicant eligibility, and then for assessing the quality of installations.

Quality assurance checks and processes for confirming applicant eligibility

Applicant eligibility was confirmed through a number of checking stages. The stages included questions asked at the time of the initial application, document checks within the home and sometimes a review of documents posted. Most stakeholders agreed these multiple stages of quality assurance were effective. No stakeholders recalled the eligibility checks uncovering evidence of any fraudulent applications being made.

There was no negative feedback about these checks and processes from either installers or applicants. They were not felt to be either burdensome or intrusive.

A suggestion made by a few stakeholders to improve the checks undertaken on eligibility was to use Department of Work and Pensions (DWP) data as a final cross check of the benefit payments being received by an applicant. However, it is understood that access to these

records was not possible for the Warm Front delivery team but that DECC has subsequently made progress on this for future schemes.

> ***"I think it was as effective as it could be. The only way it could potentially have been improved would be by having some sort of access to DWP's records and say this customer at this address has told us that they're in receipt of benefit x, can you confirm that's the case."***

Scheme management stakeholder

Quality assurance checks and processes for installers

To become an approved installer under Warm Front a range of checks and certifications were required. Most installers felt these were fairly standard requirements and although the product specification and customer service level agreements were fairly strict these were recognised to be good practice.

> ***"It was pretty straightforward and it was quite easy compared to some of the ones we get involved in. We thought it was a fair process…the prequalification information that they required was pretty standard stuff, there was nothing too untoward about it and it was done in an easy to understand, quite a straightforward manner really."***

Supply chain stakeholder – installer

Generally the checks and processes on installations were felt to be effective by policy and management stakeholders. However, some did share concerns that the change to the inspection regime part way through the scheme may have had a negative impact on the customer service offered.

Checks and processes to ensure installations met the required standards were reported to have been built into a number of different elements of the scheme. For example, scheme management stakeholders explained that audits were conducted on a percentage of the total installations but the allocation of audits was flexible to take into account customer complaints or any safety issues connected to another installation by the same organisation. In the initial years of the scheme installation jobs were directly allocated to installers by the scheme manager. The allocations were said to be based not just on capacity for work but also customer satisfaction ratings and the quality ratings from previous inspections and audits.

> ***"If they were at a lower percentage we would bring them in and put them on an action plan if we needed to. The action plan could be anything from we'll inspect every job for the next month or so, we'll put out health and safety people in and do onsite visits to make sure you're doing everything as you should. Or it could be we would put them on a full hold and give them no more work until that action plan had been achieved."***

Scheme management stakeholder

One stakeholder questioned the expertise of the inspection teams, although, this was not a widespread point of view.

A range of stakeholders from policy and scheme management teams and from advisory and local organisations raised concerns about the possible implications of the change to the inspection regime in 2010/2011. Prior to this 100% of gas and oil heating installations were inspected shortly after the initial installation visit. However, this was changed to 10% as part of

contract changes following the agreement of a reduced budget in 2010. Stakeholders were concerned that the impact of this may have been that initial installation defects were not detected until the annual service visit. In some cases, a range of stakeholders acknowledged that this could mean that initial installation defects were found after an installer had ceased trading, or once warranty cover had expired. Scheme management stakeholders explained that this led to problems as there was then no contract with CES to have the repairs made, or for this to be done at agreed rates. A few local authority stakeholders reported receiving calls from customers about issues such as this and in some cases they reported that the local authority would fund the repairs.

For a discussion of householder experiences of post-installation checks, as well as the complaints process, see Section 7.

Another challenge for managing the quality assurance processes and checks, especially in the early years of the scheme, was the largely paper-based system used by CES. A few installer and scheme management stakeholders recommended that smart phones or PDAs be used in future schemes as these assist with consistent data transfers and keeping on top of things in periods of high demand.

3.6. Interaction of Warm Front with other actors and policies

The management and delivery of Warm Front did not operate in a vacuum and it involved collaboration with a range of external bodies and organisations, as well as interaction with other policies and schemes. This section goes on to consider the interaction of the scheme management team with the Delivery Advisory Board and Fuel Poverty Advisory Group as well as local authority and other energy efficiency policies.

3.6.1. Delivery Advisory Board and Fuel Poverty Advisory Group

Two key bodies working with the scheme management and policy team were the Delivery Advisory Board (DAB) and the Fuel Poverty Advisory Group (FPAG). The DAB was established by CES specifically to advise on Warm Front while the FPAG is a formal group that advises government on its progress in meeting fuel poverty targets.

Overall, most stakeholders agreed that the involvement of these groups was a strength of Warm Front. They offered assistance understanding the target audience, spreading communications to a wider range of interested stakeholders and linking in to other initiatives. It was felt, both by the policy and management teams as well as the advisory bodies themselves, that the correct range of organisations were represented across these groups. A few stakeholders mentioned that a delivery organisation (that is, an installer organisation) could have been a valuable addition to this body.

However, a few stakeholders involved in the DAB and FPAG did have suggestions for ways in which the management of these groups, and their input into Warm Front, could have been improved. Their recommendations were as follows:

- **Insisting upon an independent chair**: the DAB was chaired by CES which a few stakeholders felt was inappropriate.
- **Greater involvement in the scheme design**: a few stakeholders would have welcomed the remit of the advisory groups being broadened to enable greater involvement in decisions around the design of the scheme. Their experience of working with CES and DECC on the Warm Front scheme was that their ability to help steer or challenge key decisions was very limited. For example, around the decision to close the scheme. While this type of role was not intended to be part of the remit awarded to these bodies, it is something the advisory stakeholders would have welcomed.

"I think any future schemes would benefit from perhaps having a broader governance and structure, and involving perhaps some non-execs that we had under the board. Where we had a level of scrutiny, we could look at the KPIs that had been set in a bit more detail and steer and challenge a little bit more. We got high level updates on the KPIs into the delivery group, but there was no real scrutiny of that."

Advisory stakeholder

- **Ensuring the full range of evidence was made available to make decisions**: a few stakeholders voiced frustration about not always having the information available about the progress of the scheme, or the spending, that they felt was required to provide constructive advice. One DAB stakeholder felt this was a consequence of CES acting as chair and perhaps filtering the information passed on. It should be noted that this is in the opinion of the stakeholder and does not necessarily reflect the practice of the CES team.

3.6.2. Local authority

The involvement of local authority with Warm Front varied depending on the emphasis placed on the scheme in different areas. Section 5.4 discusses in more detail the role local authority, as well as other locally based organisations, played in assisting with marketing and generating referrals for the scheme.

Local authority stakeholders felt the communication they received about the scheme from the scheme management organisation could have been clearer. In particular, these stakeholders felt this could have been improved when significant changes were made to the scheme, such as to eligibility criteria or closures to applications. The loss of networking teams in 2011 was reported to have added an additional strain to the communication between locally based organisations and the scheme manager.

"When designing programmes DECC should include local authorities more as we deal with local residents every day and we are not involved as much as we should be."

Referral network stakeholder (local authority)

3.6.3. Other schemes and policies

The main scheme interacting with Warm Front was an obligation on energy companies called Carbon Emissions Reduction Target (CERT). The two programmes had overlapping objectives to some extent given the aim of CERT was to improve the energy efficiency of homes, with targets placed on Priority and Super Priority groups[17] which included households at risk of fuel poverty.

The relationship between the two schemes was described as "win-win" by many stakeholders. Warm Front was felt to benefit as a greater proportion of the scheme's budget could be directed at heating system replacements as insulation was being installed via CERT. To the advantage of CERT, Warm Front helped generate leads for installation of insulation which assisted energy companies in meeting their obligations.

[17] Further information about CERT can be found here: http://webarchive.nationalarchives.gov.uk/20121217150421/www.decc.gov.uk/en/content/cms/funding/funding_ops/cert/cert.aspx

Warm Front did also benefit from a range of other schemes operating in a similar time period. For instance, the Department of Health flu vaccination programme helped generate referrals to the scheme.

Although the Community Energy Savings Programme (CESP) also targeted assistance at those living in fuel poverty, there was little overlap with Warm Front as CESP operated in very localised areas and tended to focus on social housing tenants and more expensive measures such as solid wall insulation.

4. Perceptions of the value for money achieved by the Warm Front scheme

This section presents stakeholders' views of the value for money of the Warm Front scheme. Since this report is of a process evaluation, rather than an impact evaluation, this section does not seek to quantitatively assess the scheme's value for money. Instead it synthesises stakeholders' views on the elements of the scheme that they felt either helped or hindered Warm Front to achieve value for money. It focuses particularly on the positive and negative aspects of the e-bid system as this was brought in by DECC to help address value for money.

Key findings

- Most stakeholders agreed that the scheme was successful in achieving its objectives, but views on value for money were mixed.
- A variety of stakeholders believed that the central control of the scheme by a single manager offered value for money due to economies of scale. However, a more locally managed scheme may have yielded lower labour and travel costs according to some installers and local authority.
- Some stakeholders admitted that installations could have been completed more cheaply than the prices paid through Warm Front (particularly when work was directly allocated). However, in their view value for money was still achieved due to the high quality and after care standards offered to applicants.
- Nearly all stakeholders agreed that the e-bid system helped to reduce installation costs significantly. However, it was also acknowledged by many to have had a variety of knock on effects on the market due to the extent of the price fall.
- Many stakeholders understood the challenges of setting eligibility criteria to specifically target those living in fuel poverty. While most felt the scheme had achieved this as far as was possible, some felt that sharing data with other government departments would have enabled more accurate targeting.

4.1. Centralised control of national scheme

Many stakeholders, including those involved in policy, management and supply, felt the centralised control held by the single scheme manager contributed to value for money. However, a few argued the merits of a more localised scheme.

Value for money achieved through central control of materials

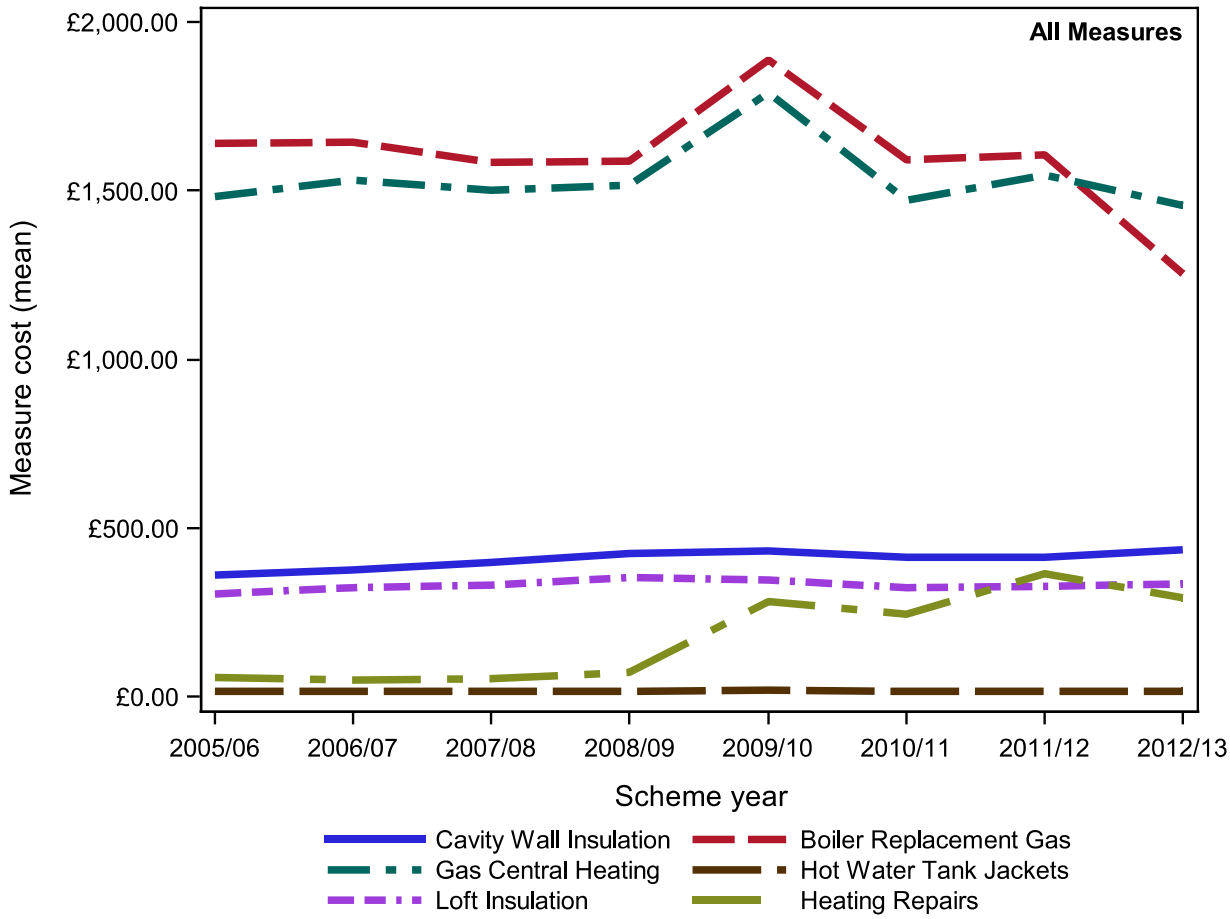
The scheme management organisation explained that they had central control over the material specification offered under Warm Front and the agreed pricing of these materials. Many stakeholders recognised the economies of scale offered by this approach. It was reported by policy, management and supply chain stakeholders that these materials were bought at a lower price than if purchased on the open market.

"Nobody [got] a better price than Warm Front because it was taxpayers' money."

Supply chain stakeholder

Using household level data, Figure 4 below shows the average cost of the installed measures over the scheme period. This data is presented in further detail in the appendices. Measure costs are for actual measures installed including parts and labour (and not any service or administration, therefore not reflecting installers genuine costs). It shows that cavity wall insulation and loft insulation were largely constant over the course of the scheme. The cost of gas boiler replacement and gas central heating were also very consistent, with only £200 difference between the cost of these different types of measures throughout most of the scheme. This could imply that boilers comprised the majority of heating system replacement costs. The cost of providing a new gas supply saw more variation over the scheme period with a collapse in the cost (and the installation rate) at the beginning of 2010; it is not clear why this was the case, though it does coincide with the start of the e-bid process.

Figure 3 – mean cost of measures by scheme year



Merits of a localised scheme for offering value for money

Some policy, supply chain and advisory stakeholders felt a more locally based scheme may have offered greater value for money. They felt a national, uniform price paid per installation failed to reflect differences in product and labour costs. They reported that this worked both ways: installers in London felt constrained by prices that made it difficult for them to be competitive, whilst in other regions a few installers and local delivery organisations believed prices would have been lower if set independently.

> ***"One of the challenges was operating in the London area where costs are much higher than in the North of England."***

Supply chain stakeholder – small installer

> ***"I don't know, who set the original pricings up there I don't know, maybe it was London weighted."***

Supply chain stakeholder – medium to large installer

A few stakeholders from local authority and the third sector also questioned why applicants were unable to look for cheaper, local quotes from known installers. They believed this would have saved money compared with the national rates. This was felt to pose a particular problem in cases where the grant maximum would not cover the cost of a whole house approach. Some felt the use of cheaper, local labour could have offered more to such households.

The scheme management team reported that Warm Front installations were generally allocated to installers local to the clients. The only exceptions to this would be if a particular area had low capacity from its local installer base or if a certain set of skills was required. However, a variety of stakeholders reported that some installers had to travel large distances to fulfil jobs. One installer from the North explained a situation where they and an installer from the East Midlands were allocated each other's areas, but were unable to swap. This led some stakeholders to argue that a more locally based scheme would have offered better value for money.

> ***"Allocation of work was not sensible. Sometimes given very, very small draught proofing jobs which were a 100 mile journey to fulfil contract which was very inefficient."***

Supply chain stakeholder – installer

4.2. Allocation of installations

4.2.1. Perceptions of the direct allocation approach

The process for allocating work to installers changed during the lifetime of the scheme. Initially, work was directly allocated to installers via an online portal. The allocation process was reported by scheme managers to have been based on the installer's capacity as well as their quality rating (taking into account inspection results and customer complaints). Installers generally spoke very highly of this system. It provided them with a large number of jobs, good lead times allowing them to plan ahead and what they considered to be good prices. A range of stakeholders pointed out that from a value for money perspective, this system was sub-optimal. This view was held because prices were fixed with no scope for price competition. Some installers said the prices they received under the direct allocation system were above the market rate.

> ***"It was slightly overpriced, but only slightly, about 10%. You pay, I was paid too much basically."***

Supply chain stakeholder – medium to large installer

Several installers and also policy stakeholders were keen to stress, however, the high standards and accreditations required of installers, the installations and the aftercare process. They felt a simple comparison of market rates for installations would not take into account the differences in the level of quality or customer service offered. For these stakeholders, whilst they admitted Warm Front did not necessarily install measures at the lowest *price*, they believed it still offered good *value* because of these standards.

> ***"It got criticised a lot. I remember watching Watchdog and they were saying, oh, this scheme's a rip off, saying that, oh, this job cost £2,200, and a guy down the road says he can do it for £1,500. But it had a standard, and if you got a standard at a certain level to deal with all the problems, there's a rate for doing that. You can't do it for nothing."***

Supply chain stakeholder – medium to large installer

> ***"There was always criticism in that, white van man could do it cheaper but you'll always get that, you know, one has to do install within building regulations, one has to do quality inspections and maintain a certain standard. That is not always the case with the white van man."***

Supply chain stakeholder

4.2.2. Perceived impacts on the value for money achieved by the scheme through the introduction of the e-bid system for allocating work

In 2010 DECC introduced the e-bid system (it started to be phased in from November 2009). In contrast to the previous system of directly allocating work to installers, e-bid was a closed bidding process. Installers were able to see the available jobs on a shared portal and could bid for the work they wished to complete. The contracts were awarded to the lowest bid although the price of this was not revealed to the participating bidders. Policy and scheme management stakeholders explained that the e-bid process was introduced with the aim of improving value for money by bringing in market competition. Whilst nearly all stakeholders agreed it was successful in terms of reducing prices paid, some had suggestions for ways in which the process could have been improved.

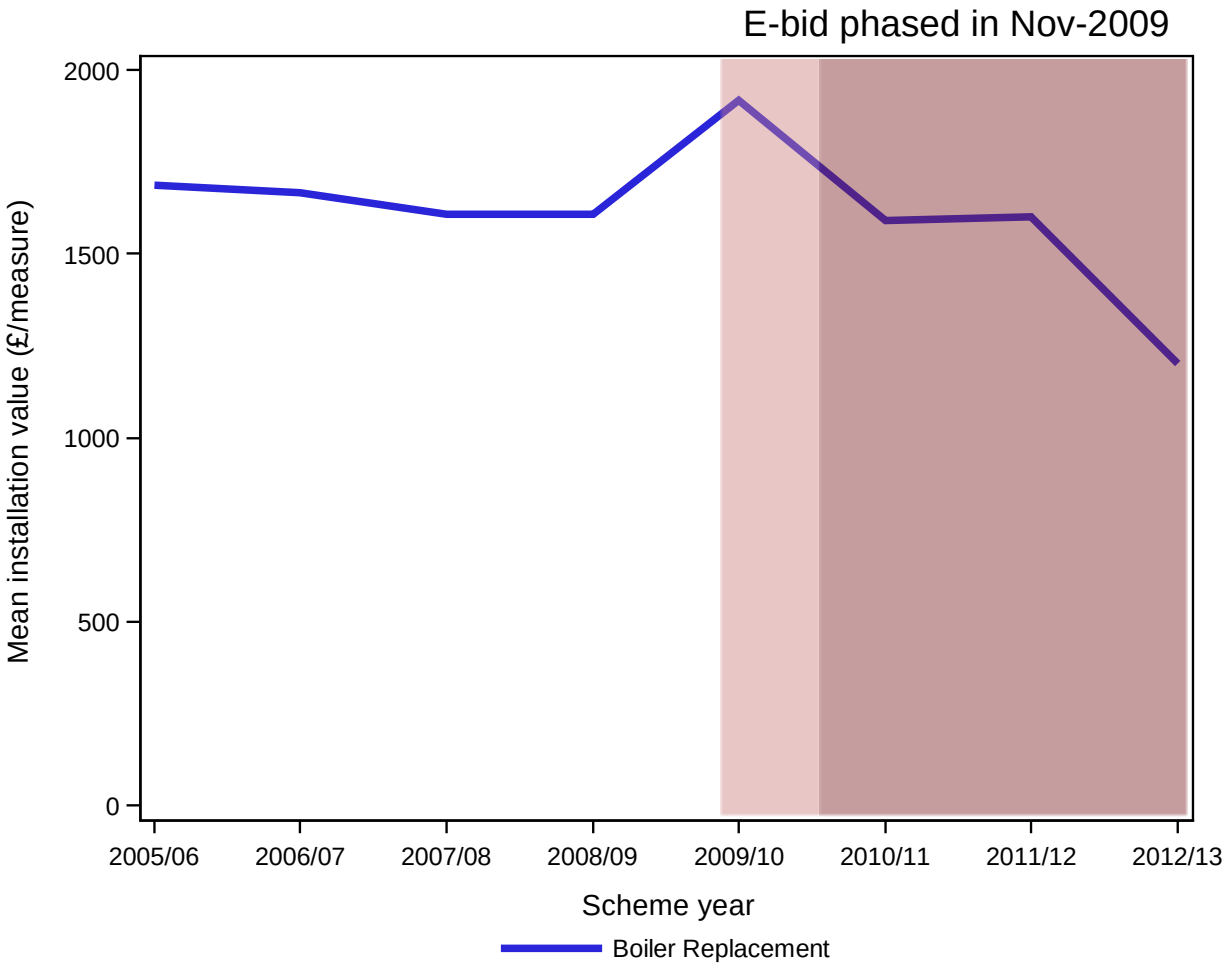
Stakeholders were nearly unanimous that e-bid achieved its primary goal in reducing prices paid per installation thus improving value for money. Views of the scale of the price fall varied, but all installers felt that it was substantial.

> ***"Before e-bid the price per job was much higher. After e-bid the value of jobs went down by 40-50%."***

Supply chain stakeholder – installer

Analysis of scheme data showing the average installation cost for a boiler replacement is presented in Figure 5 below which shows that the price fell significantly under e-bid. Scheme data analysis also shows that the direct allocation period had the most consistency of costs, with more variation occurring during the e-bid period (see Figure 4 above)

Figure 5 – Average installation value for boiler replacements



4.2.3. Suggested changes to the e-bid system

Although many agreed e-bid was very successful in reducing prices, some stakeholders did have suggestions for how the system may have been improved. The following improvements were felt to be necessary as many installers reported that the e-bid system encouraged the submission of very low bids which forced some supply chain organisations out of the scheme. When very low bids were submitted under the Warm Front e-bid system, many installers hypothesised that this must have been either at no profit to the winning organisation or reflected a change in the level of quality and/or customer service delivered.

- Firstly, a floor price was suggested by a few installers. They believed this would have prevented very low bids being submitted.
- Secondly, a few installers recommended retaining an element of direct allocation alongside a bidding system for the majority of the scheme's work.
- Some stakeholders were of the understanding that the initial intention had been for e-bid to allocate two thirds of Warm Front installations, with the remainder being directly allocated as before. However, they assumed that the savings observed under e-bid were so substantial that the policy and scheme management team decided to use the system for allocating all jobs. A few installers suggested a mix of the two systems would still

have saved money, but provided installers with some of the security and longer lead times which they valued under the previous system.

- Some installers also proposed that whilst e-bid could be used in order to get a breadth of quotes, and drive down prices compared with direct allocation, the system could be improved by not necessarily picking the cheapest bid by default. They thought it would be better to judge the price alongside other criteria, such as customer service and installation quality. However, policy and scheme management stakeholders did stress that installers still had to meet quality standards in order to be eligible to bid.
- Finally, a policy stakeholder felt it was a mistake to have closed bids. While the intention was to bring free market competition, the sealed bids meant that losing bidders were unaware of the winning bid. This lack of price signal was considered problematic for encouraging installers to remain working with Warm Front.

> ***"It was a completely closed bid so no one found out who won which I suppose is fair enough on commercial grounds but no one found out what the winning price was either so it was a real information constraint. No one could tell if their bid was anywhere near competitive or whether they would ever have won that bid and so I can understand someone going well I cannot tell whether I am competitive or not in this market."***

Policy stakeholder

4.2.4. Challenges experienced by the supply chain under the e-bid system

Impact on profitability for the supply chain

Some installers spoke of their challenges remaining profitable under Warm Front following the introduction of e-bid. Some reported that their companies continued working under the scheme but at much lower prices, which in some cases proved unsustainable for their bottom lines. Others reported that their companies had to dramatically downsize. However, it is worth noting that this comparison was made against the peak size they achieved at the height of the Warm Front scheme, rather than against the size of their organisation pre-Warm Front. Other companies did not believe they could deliver at the prices that e-bid was offering, and so either ceased trading or significantly reduced their involvement in the scheme.

There were no reports from stakeholders of prices rising once they had reached what they perceived to be an unsustainable level.

> ***"E-bid was a recipe for disaster, because it's just who's the most desperate? The rates were coming in so low you couldn't deliver the job if you had any overheads at all. And the concept that Eaga/CES had at the time is that these people bidding stupid prices would give up after a period of time. Well we know people just keep going."***

Supply chain stakeholder – medium to large installer

The extent to which installers remained involved in the scheme after e-bid appeared to depend to a large extent on the size of the organisation. According to larger installers, Warm Front represented a smaller percentage of their turnover. These installers said this allowed them to more easily diversify away from the scheme and still remain profitable through other sources of income. By contrast, smaller installers frequently said they were dependent on Warm Front. A few reported that their entire turnover came from the scheme.

Potential impact on quality of installations and customer service

There was a widespread belief among installers, although unsubstantiated by firm evidence, that corners must have been cut and quality standards lowered, in order to fulfil installations at the tendered prices.

> ***"After e-bid those who could not deliver high standards were going in lower which meant higher quality organisations could not compete."***

Supply chain stakeholder – installer

Some installers suggested that the more cosmetic elements of installations were no longer prioritised so that the level of customer service was reduced.

> ***"I know some of the installers were actually not making any money on the work they were doing under e-bid and the only other way sometimes that you can reduce your costs is to reduce the scope: all the extra bits, basically doing a neat, nice, neat job, clipping the pipe work back, pulling it so it's not exposed in certain areas, some of those things go out the window to a degree if you're working on a price."***

Supply chain stakeholder

The timing of these changes to the allocation system was highlighted as being problematic by several installers and a range of other stakeholders. E-bid was introduced at a similar time to a reduction in the inspection rate from 100% of gas and oil heating installations to 10% (which in itself also helped reduce the costs of delivery the scheme, due to lower inspection costs). A range of different stakeholders were therefore concerned that if corners were being cut, this was happening at a time when any fall in quality was less likely to be captured by inspections.

Workload and lead times

Another problem identified by installers was the difference the e-bid system made to lead times and managing workload. Under direct allocation installers said they could see the work that was available on the portal, generally with around two weeks lead time, enabling them to pick up the number of jobs they were capable of fulfilling. Under e-bid installers said they did not know how much, if any work, they would win and bids that were successful tended to have much shorter lead times than previously. Installers who remained heavily involved in the scheme explained the implication of this was that they either had to risk having engineers standing idle, or not having capacity for work that did come in via e-bid. Those who had reduced or ended their involvement were of course less affected by this as their engineers worked on other revenue streams instead.

4.3. Eligibility criteria

4.3.1. Perceptions of the success of targeting those living in fuel poverty

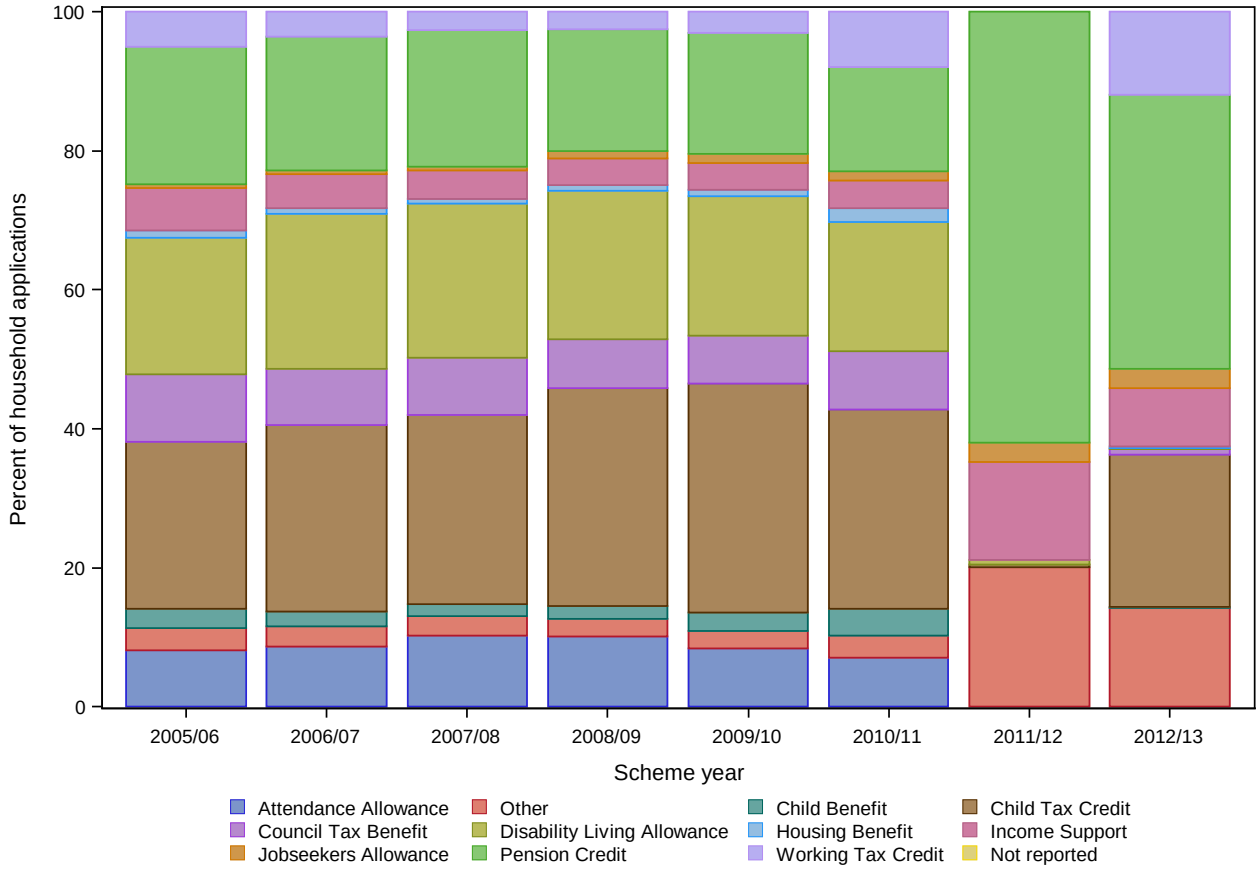
To successfully apply to Warm Front householders had to meet a set of eligibility criteria[18]. The purpose was to try to target households living in fuel poverty. The eligibility criteria were based on a requirement for applicants to be in receipt of certain household benefit payments. It was recognised by many stakeholders that using benefit payments as a proxy for identifying the fuel poor was challenging. Policy stakeholders explained that the eligibility criteria changed during the lifetime of the scheme as they attempted to improve this targeting. Details of the eligibility criteria are set out in the Introduction section.

[18] Changes to the eligibility criteria are presented in section 9.4

In the early years of the scheme, one of the qualifying benefits was Disability Living Allowance (DLA), or Attendance Allowance for those over pensionable age. However, many stakeholders considered DLA and Attendance Allowance criteria to be too broad, and had the impression that some recipients of DLA or Attendance Allowance may have been able to finance the measures themselves. This view was also shared by the NAO's 2009 assessment of Warm Front[19]. These stakeholders felt this counted against the value for money delivered by the scheme as the funds may not have been helping those in greatest need.

The eligibility criteria were subsequently narrowed substantially in 2011, including the removal of DLA and Attendance Allowance as qualifying benefits and the introduction of SAP ratings as a qualifying criterion. Figure 6 below clearly shows the change in the profile of scheme beneficiaries following the eligibility criteria change in 2011. It shows in 2011 and 2012 Pension Credit recipients became the major beneficiaries of the scheme. However, it is likely that many people claiming these other benefits were also claimants of DLA or Attendance Allowance. The swing towards pension credit should therefore be treated with caution. The more mixed profile shown for 2013 is a result of the eligibility criteria being widened again during the final months of the scheme.

Figure 6 – Qualifying benefit of Warm Front beneficiaries across the different years of the scheme



Other includes all benefit types with <1% of total scheme applications; comprises 3.3% of scheme total
Note that households can be in receipt of multiple benefits

However, some stakeholders, including from the policy and management teams, felt the criteria became too strict. They observed an adverse effect of fewer households being supported by the

[19]http://www.nao.org.uk/report/the-warm-front-scheme/

scheme as it became difficult to identify those meeting the stricter eligibility criteria. A range of stakeholders felt the challenge of identifying eligible applicants was exacerbated by the disbanding of local networking and referral teams at a similar time as well as a halt on scheme marketing. Around this time underspend started to be reported for Warm Front for the first time. Many stakeholders, particularly from advisory groups, felt this demonstrated that the scheme's resources were not being maximised or used to best effect.

While many stakeholders were sympathetic to the challenges of identifying the target audience for Warm Front, several questioned why DECC was unable to obtain benefits data from the Department for Work and Pensions (DWP). They felt this would have improved value for money in two ways: firstly, these stakeholders believed marketing costs would have been lower, meaning the same number of people could be helped for less. In addition, they thought a greater number of households living in fuel poverty would have benefited.

> ***"I don't know how much of their budget was spent on finding people to insulate, purely because you're not allowed to have the data of who is claiming those benefits… So they must have spent I don't know what of their budget trying to find people and there's a list over there, which on the left hand the government is trying to find people to help, and on the right hand it knows who they are, that's just a world gone nuts."***

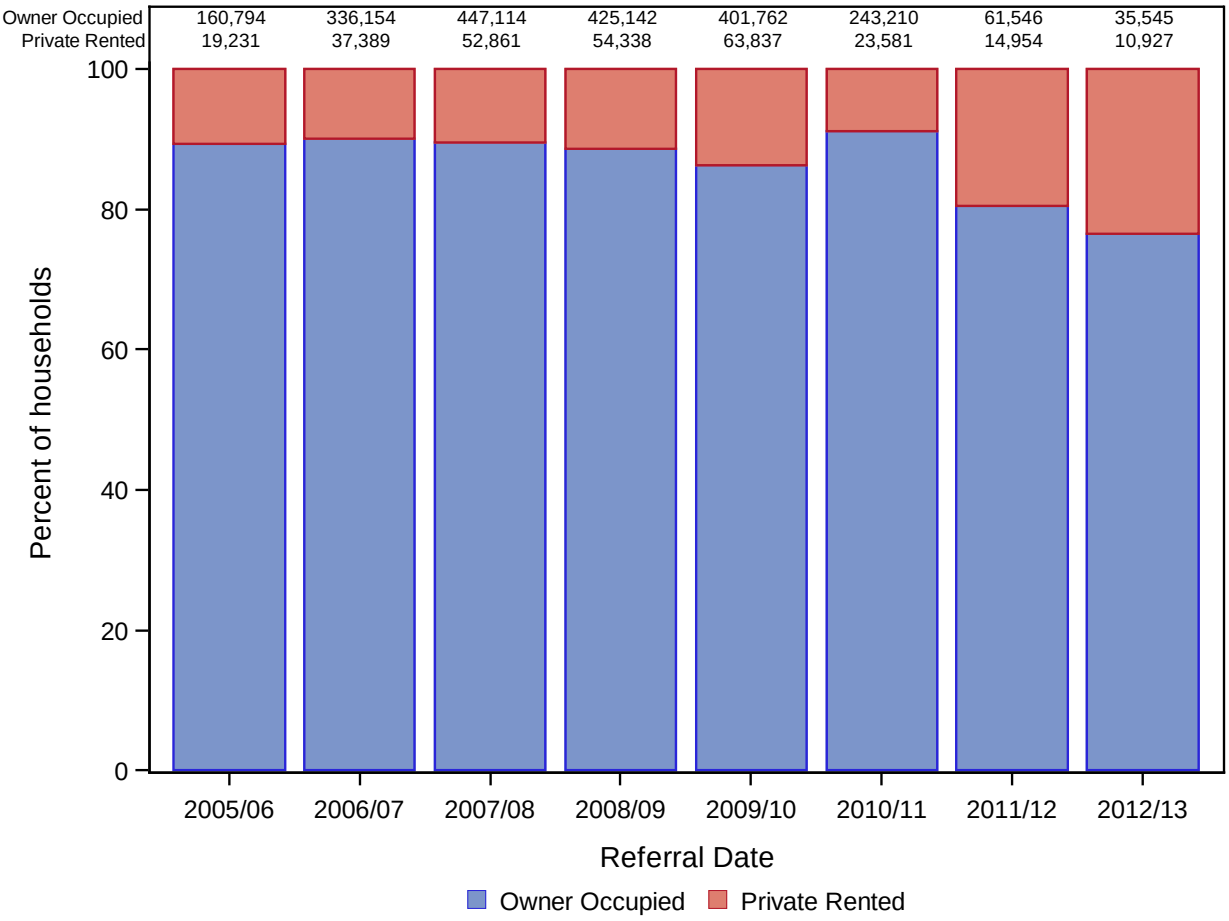
Supply chain stakeholder – medium to large installer

It is understood, however, that DECC were unable to access this data at the time due to legal difficulties but that progress has subsequently been made for future schemes..

4.3.2. Perceptions of private landlords benefiting through Warm Front

Whilst most scheme applicants were owner-occupiers, a small percentage of measures were installed in the homes of private tenants. Although the beneficiaries of the measures may have been fuel poor, some stakeholders believed that landlords should not get funding from the state to have these measures installed. Instead, they felt they should be forced by law to provide adequate heating for their tenants. Although it is important to note these represented a small percentage of installations, as shown in Figure 7.

Figure 7 – Tenure of Warm Front beneficiaries



5. Customer Journeys - application

This section looks at the experiences of Warm Front customers, from when and how they first found out about the scheme, to making an application. It explores the process of bringing customers to the scheme through advertising and referrals, and the profiles of those reached by the scheme. Figure 8 **shows the customer journey of Warm Front applicants in full, and highlights the sections of this journey which are dealt with in this section.**

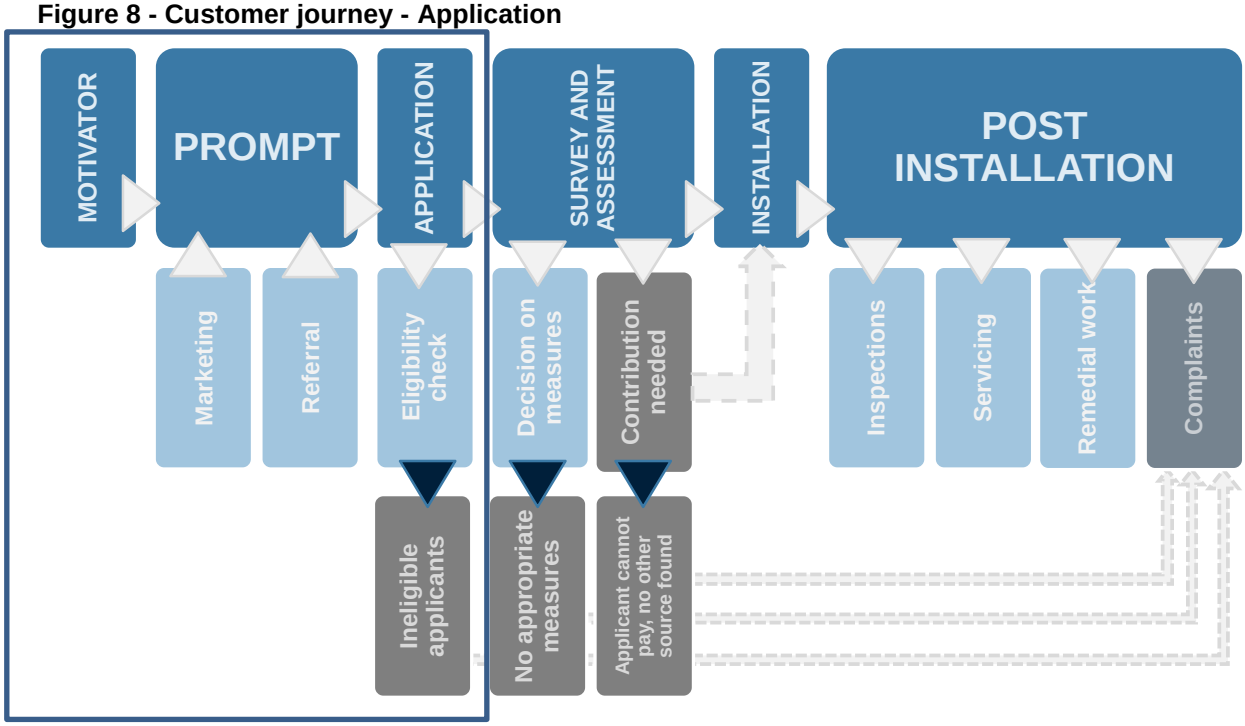
Key findings

- In general, customers reported needing help from Warm Front because they were cold in their homes, or at risk of being cold in the near future. Many said that they would be unable to finance a solution to this problem themselves.
- Stakeholders reported that the referrals[20] system, supported by networking teams, enabled promotion of this national scheme at a local level, in a way which was targeted and which took account of local circumstances. While regional variation in referrals was seen by stakeholders to be inevitable, they also reported that referrals reached some of the most vulnerable customers.
- From the perspective of stakeholders and the experience of applicants, it is clear that no single avenue was key to generating scheme demand. Rather, a multi-pronged approach reached different audiences. Applicants reported that hearing of the scheme through a number of avenues built their trust and confidence in the trustworthiness of the scheme.
- Scheme data shows that the child tax credit, disability living allowance and pension credit were the most common of all benefits identified as the qualifying benefit. There was general agreement amongst stakeholders that receipt of benefits was an imperfect but necessary proxy for fuel poverty.
- Most customers said that the application process was straightforward, and easier than they expected for a scheme of this kind.
- Customer expectations at the application stage tended to have a bearing on their final satisfaction with their experience of Warm Front.

This section separates the reasons behind customers' applications from the prompts that made them apply. It also looks at the application process in more detail.

[20] The term 'referral,' for the purpose of this report, is used to indicate an application which came to the scheme manager through a third party organisation, rather than directly from the applicant themselves.

Figure 8 - Customer journey - Application



5.1. Customers' reasons and motivations for applying to Warm Front

Customers of the scheme reported that the main reason they sought help from Warm Front was that they were cold in their home, or at risk of being cold in the near future. Many said that they would not be able to finance a solution to this problem themselves.

Being cold in the home could result from a broken, faulty, or inadequate heating system, an inadequately insulated or draught-proofed home, prohibitively high energy bills, or, often, a combination of these factors.

Some of those who applied said they were not cold in the home, and not at significant risk of being so in the near future. For these customers, the scheme was seen as an opportunity to save money on fixing or updating their heating system, and, in some cases, on energy bills.

Being warm and saving money were the primary motivations reported by scheme applicants. There were a very few mentions of the environment, carbon savings, or 'being green' as motivators for improvements under the scheme.

5.1.1. Fuel poverty as a day-to-day reality

Warm Front customers and stakeholders spoke of cold, damp, inadequately heated or unheated homes. Some said Warm Front offered an opportunity to have adequate and safe heating installed in their home for the first time. Many customers described the trials of living without heating and hot water after boilers had broken and they had been unable to afford a replacement. For several, having older or disabled household members, or those with long-term health problems, made having a warm home an even higher priority.

> ***"I asked around for prices for having a new boiler and they were way out of my reach. I couldn't do it. So in the end I just went without… I just used the kettle on my landing to heat the water up for my bathroom, and used a gas fire and I got an electric heater. …it was quite cold…until my granddaughter heard of this scheme."***
>
> **Successful applicant, South, aged 83, Heating & Insulation**

Many customers also reported suffering high or unaffordable heating bills, and some hoped to save money on bills as a result of Warm Front measures.

5.1.2. Customers less in need

A handful of successful applicants felt they would have been able to afford the measures without help from Warm Front or other sources. The scheme, however, allowed them to avoid dipping into their savings in order to fund improvements. There was also a sense from some customers that if they were eligible, and others were claiming, they would be foolish not to apply for help themselves.

In order to qualify for a new boiler, it was a requirement that customers' boilers were either completely inoperable or not capable of being economically repaired.[21] Some successful applicants reported that their boilers were old, or 'coming to the end of their lives' but still operational when they were replaced. One successful applicant reported that their boiler was new and in good working order, and yet had been replaced through a Warm Front grant. He was told that this was because it was not a combination boiler, and therefore his heating system was not as efficient as it could be.

5.2. Customer expectations of the scheme and measures

Customers' reported expectations of the Warm Front scheme varied widely. These expectations seem to have had a strong bearing on their eventual satisfaction with their experience of the scheme.

Before applying, several customers said that they had questions about how the scheme would work, what kind of installations (including specific products) were available, whether it would cost them anything, and how long it would take.

Some reported very specific expectations about the measures they would receive, for example around the thickness of insulation to be installed, or the make and model of boiler. Others were happy to be advised on appropriate measures and products by surveyors and installers.

A few customers said they had high expectations of the quality of products and installations. Others reported just wanting to get measures in place, and being less interested in the finer details. One or two said that they felt unsure or concerned about whether measures installed would be successful. It was generally the customers who had subsequently experienced problems with what was installed who stated that they had such reservations early on.

Most customers seemed broadly aware of the eligibility criteria for the scheme, but some were unclear about their eligibility and worried about whether or not their application would be successful. There seemed to be particular confusion about exactly what state a property, boiler or heating system needed to be in to qualify for measures under Warm Front. One successful applicant, for example, thought she would be ineligible because her boiler was still working, before learning that old, inefficient, or unreliable boilers could also be replaced. Conversely, one unsuccessful applicant reported being told that she was not eligible for a replacement heating system because she already had storage heaters.

[21] The policy position on replacement of boilers under Warm Front was as follows: Warm Front contractors will only replace boilers which are either completely inoperable or not capable of being economically repaired. There are a number of factors that need to be taken into consideration when Warm Front decides whether or not to replace a boiler under the scheme. These include the age and efficiency of the system, and the long-term after effects that a repair would cause.

5.3. What prompted Warm Front customers to submit applications to the scheme?

According to scheme data, many Warm Front customers were prompted to apply to the Warm Front scheme by a third party organisation (see Figure 10). However, the data also shows that a proportion approached the scheme directly (11%).

Some customers of the scheme recalled approaches from their local authority or other third party organisation. A small number of reported themselves approaching a third party organisation to request that they be referred to the scheme.

Stakeholders confirmed that the scheme manager, installers, manufacturers, local authority and other third party organisations all had a role in promoting and advertising the scheme to the public. This promotion included:

- Direct mailing;
- Leaflets - through doors and displayed in public places;
- Television, newspaper and radio advertising;
- An online presence;
- Public outreach work, for example at weekly local markets and at public events; and
- Cold calling.

Customers spoke of hearing of Warm Front through a variety of advertising channels, but many were vague on what specifically had prompted them to apply. Many said they had heard about the scheme through several channels, and in a number of different communications, before making the step of applying.

Some customers confirmed that Warm Front being a 'Government scheme' was core to trust and the decision to apply.

> ***"It gave me more confidence. You just assume as it's government backed that the government's going to make sure it's going to run proper."***

Successful applicant, North, aged 67, Heating

Applicants reported that word of mouth and discussions with friends and neighbours corroborated what they had heard through advertising or outreach, and provided a 'sounding board' or second opinions on the trustworthiness of the scheme.

5.4. How effective was the referrals system[22] in creating demand for the scheme?

Stakeholders reported that the referrals[23] system, supported by networking teams, enabled promotion of this national scheme at a local level, in a way which was targeted and which took account of local circumstances. Support from networking teams was reported to be a strength of the referrals programme, by both the scheme manager, and by customers who experienced referrals. Despite this support, stakeholders report that regional variation in the level and effectiveness of scheme promotions remained. Stakeholders also believed that referrals reached some of the most vulnerable customers helped by the scheme.

[22] The term 'referral,' for the purpose of this report, is used to indicate an application which came to the scheme manager through a third party organisation, rather than directly from the applicant themselves.

[23] The term 'referral,' for the purpose of this report, is used to indicate an application which came to the scheme manager through a third party organisation, rather than directly from the applicant themselves.

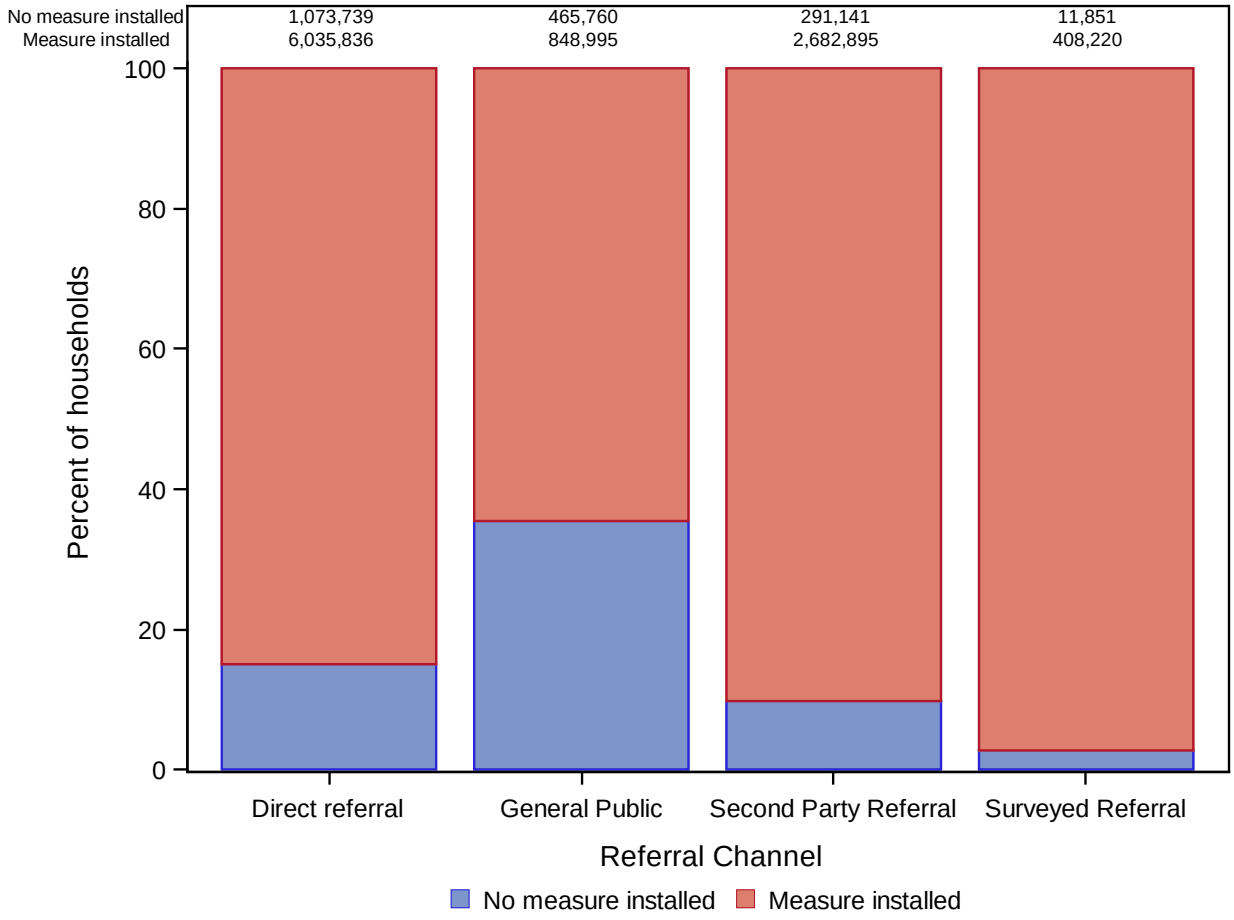
5.4.1. Avenues for referrals[24]

There were four avenues through which Warm Front customers came to the scheme:

1. **Direct referral** – through contact by the scheme manager, largely direct mailings using Experian profiles of target areas, and through referrals from energy companies;
2. **General public** – individuals who directly approached Warm Front, having been prompted by advertising, word of mouth or other promotion of the scheme (see Figure 9;
3. **Second party referral** – through organisations other than the scheme manager which promoted the scheme. Some of these organisations were supported in their promotion of the scheme by teams of 'networkers'; and
4. **Surveyed referral** – individuals referred to the scheme by installers, who conducted surveys to see what work needed to be done before the referral was made.

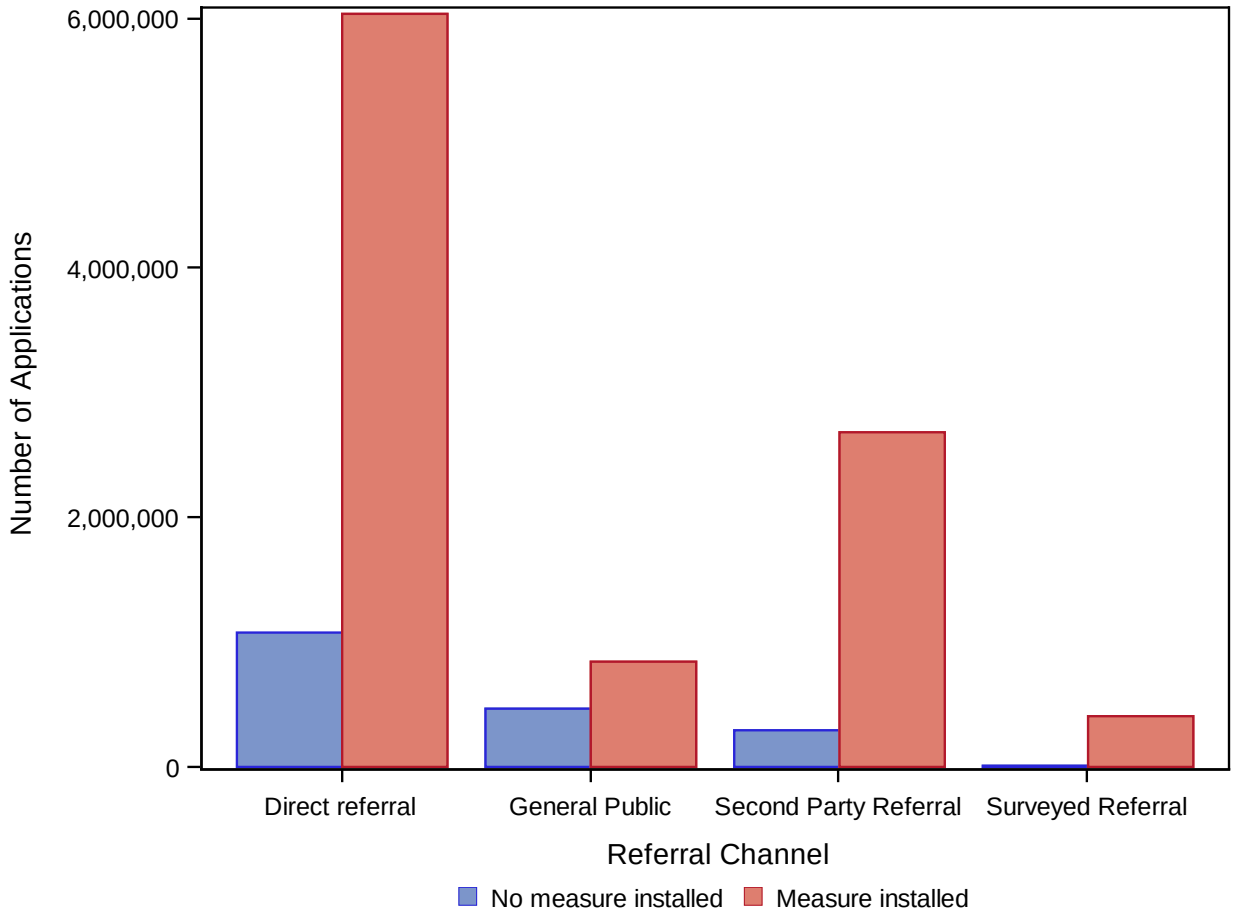
These different routes to Warm Front had different proportional success in terms of the numbers of applicants who went on to have measures installed.

Figure 9 - 'Conversion' from application to installation through different referral routes



[24] The division of referral routes into categories in the data was one of the data points about which CES were unable to provide full clarification. This report therefore makes some assumptions about the categories used by Carillion, and divides general qualitative findings according to these categories here.

Figure 10 - Number of applications by referral route



Direct referrals

CES felt that direct mailings were one of the most effective avenues of generating demand for the scheme. Mailings were targeted using Experian household data for areas with a high prevalence of qualifying benefits.

General public

CES did not record data on how those applying as members of the general public came to hear of the scheme. Even if these records had been kept, recall of specific prompts by applicants was vague, as they had often heard about the scheme through a number of different routes before they took the step of applying.[25]

Second party referrals

Local authority and other organisations worked alongside CES to generate referrals to the Warm Front scheme.

According to stakeholders, the time and effort put into generating referrals for Warm Front varied between organisations, depending on their remit, capacity, and priorities. This variation

[25] The types of promotion of Warm Front which members of the public would have been exposed to are discussed in more depth in section 3.3.

was said to be particularly evident in the case of local authority, whose promotion of the scheme varied widely, leading to some stakeholders deeming the chance of being referred through a local authority as a 'postcode lottery'[26].

The most active local authority stated that they promoted the scheme through training of front line staff, outreach within local communities, and through general marketing, for example by mailings and distribution of leaflets. Some scheme applicants recalled receiving letters from their local authority, or being directly called by staff to enquire if they might need to be referred to the scheme.

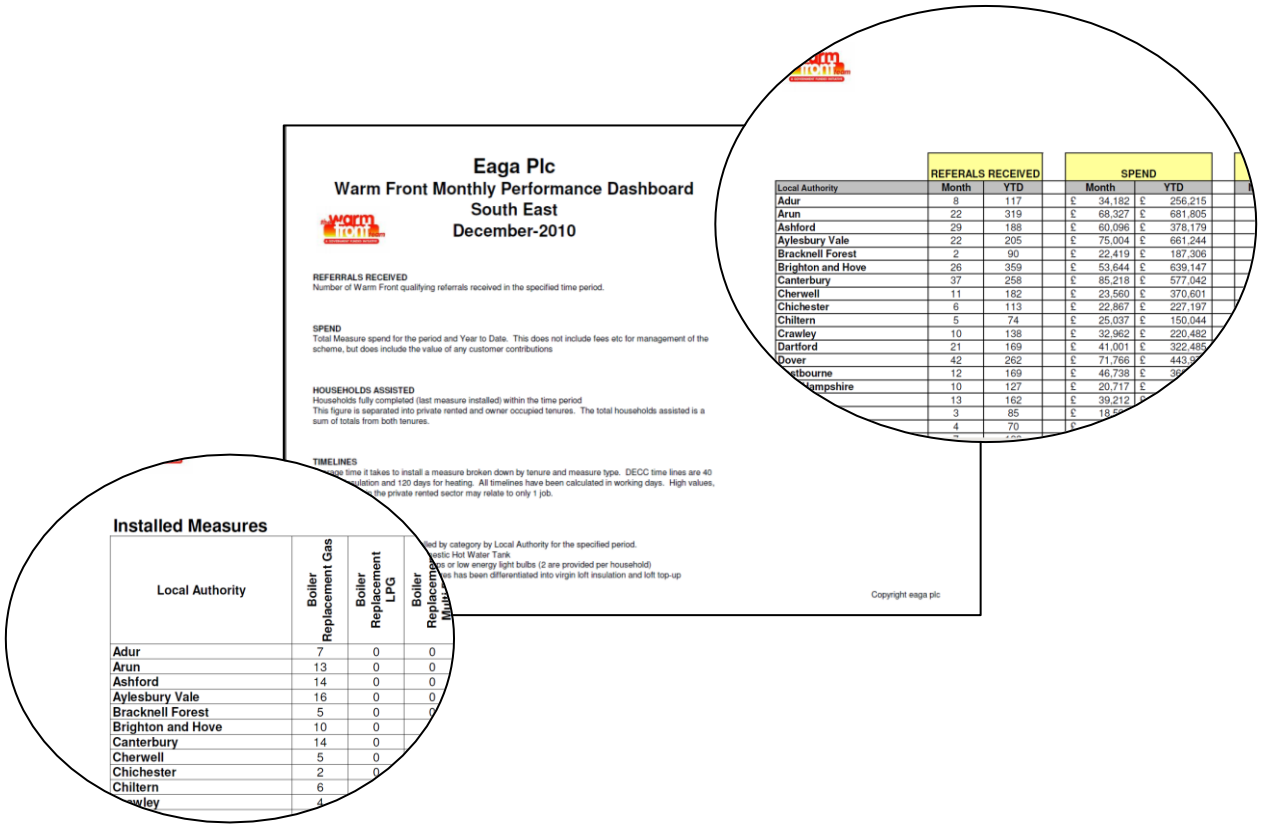
> ***"Some people just phoned the council because they were cold and they assume that the council can help them, which is why I made such an effort to brief so many of my colleagues on the existence of the scheme. So that anybody who is having a conversation with somebody vulnerable who might be eligible can get those alarm bells rung when the person says 'my heating has broken' or 'I'm freezing cold'."***

Referral network stakeholder (local authority)

Support for second party referrals - networkers

CES ran local or regional teams of networkers who supported organisations generating referrals. Local authority reported that these networkers made regular contact, supplying information, training, and 'dash reports' which allowed local authority to gauge their progress and, in some cases, encouraged competition between areas (see Figure 11). This support system seems to have worked particularly well for local authority, who said they appreciated the support and the information provided to them by the scheme managers.

Figure 11 - Warm Front 'dash' report



[26] Advisory stakeholder.

As the scheme wound down, the size of networking teams diminished, with fewer networkers per area. Eventually the networker support dwindled to the extent that local authority and scheme management stakeholders both stated they were less useful than they had been before.

Surveyed referrals

Installers[27] had an obvious interest in promoting the scheme, and up until this referral route was closed by the scheme manager, installer referrals appeared to have been gathering momentum (see Figure 12). Some applicants reported having been approached directly by installers, and one applicant reported receiving so many cold calls about Warm Front that she may have missed communication from the scheme manager about her application. This applicant reported that despite having a survey and measures approved, she never received (or never recognised) any further contact from the scheme itself.

Support for surveyed referrals

Promotion of the scheme by installers was supported by CES through roadshows and training events, which installers said they found informative and helpful.

Stakeholders confirmed that some of the manufacturers of products used in Warm Front installations also either promoted the scheme themselves or worked with installers to encourage them to promote the scheme. Supply chain stakeholders stated that such promotion was mutually beneficial for the manufacturers (whose products were likely to be used in installations) and for the scheme (as it enabled more people to be reached).

5.4.2. Benefits of referrals as a method of creating demand for the scheme

Reaching the most vulnerable

The scheme manager, and many of those generating referrals, said they believed that the referrals system reached some of the most vulnerable customers of Warm Front, and brought them to the scheme when they would otherwise not have found it.

> ***"We couldn't have done it without the networking team, they were fantastic. I think it was the work that they did with smaller groups, very much targeting local authorities… with a lot of charities as well …helping us identify customers that absolutely needed the help, who maybe might not have a television… or a radio, or they couldn't read or things like that."***

Scheme management stakeholder

Some local authority reported having a very comprehensive and joined up approach to creating Warm Front referrals, operating through all front line services. Stakeholders, however, reported that others local authority were able to devote fewer resources to promoting the scheme.

Local authority stakeholders stated that links to health service providers enabled them to access some of those most at risk from cold homes, including older and disabled householders. Stakeholders reported that this promotion through local health services was complemented by central government promotion of the scheme. The Department of Health promoted the scheme alongside its flu vaccine programme, and the annual publication '*Keep Warm, Keep Well*' also carried information on Warm Front.

[27] Installers were originally allowed to generate referrals to the scheme, however this was stopped in 2010/11.

Stakeholders described how the referral system meant that those with lower literacy, or those who were otherwise less able at completing paper work, could be guided through the application process. According to stakeholders, referrals provided on-the-ground experts on Warm Front, who operated face-to-face with potential customers, at a local level. This helped applicants navigate the potentially confusing landscape of different schemes, with different eligibility criteria, which were available at different times.

Charities and local authority reported promoting Warm Front in a way which highlighted benefits most relevant to those in the locality. Stakeholders corroborated this, stating that these organisations acted as trusted local intermediaries. Both groups pointed out the benefits of familiarity with local problems, such as the type of housing stock in the area, and the ability to work with their own networks to promote the scheme.

> ***"We've already set up quite well within [area] with lots of voluntary and third sector organisations, so receiving the referrals was never really a problem."***

Referral network stakeholder (local authority)

Although it was agreed amongst stakeholders that the referrals system went a long way towards finding and accessing more vulnerable people, some felt that more could have been done at a grassroots level. An example of this was the suggestion that the scheme could have worked through community organisations, using community 'champions' to promote the scheme.

> ***"There are quite a lot of people… frail, living on their own, feeling a bit insecure, who are amongst those in the world who do not ask for help from anybody and if you do not ask you're not going to get it. …If you had a more community based scheme, or at least a community based context within which the scheme was operating, then people from the local church might have volunteered to help out and be supportive and things of that nature. The possibilities …begin to multiply."***

Advisory stakeholder

5.4.3. Referrals – difficulties and barriers

Despite the benefits of the referrals system, this avenue of promotion was not without difficulties and barriers. Stakeholders reported that changes to the scheme sometimes made promotion more difficult for referral organisations, or caused them to waste time and money. In some cases, stakeholders from referral organisations reported that they were left feeling they had disappointed their customers by promoting the scheme when it subsequently closed, or when criteria changed.

Changes to the scheme

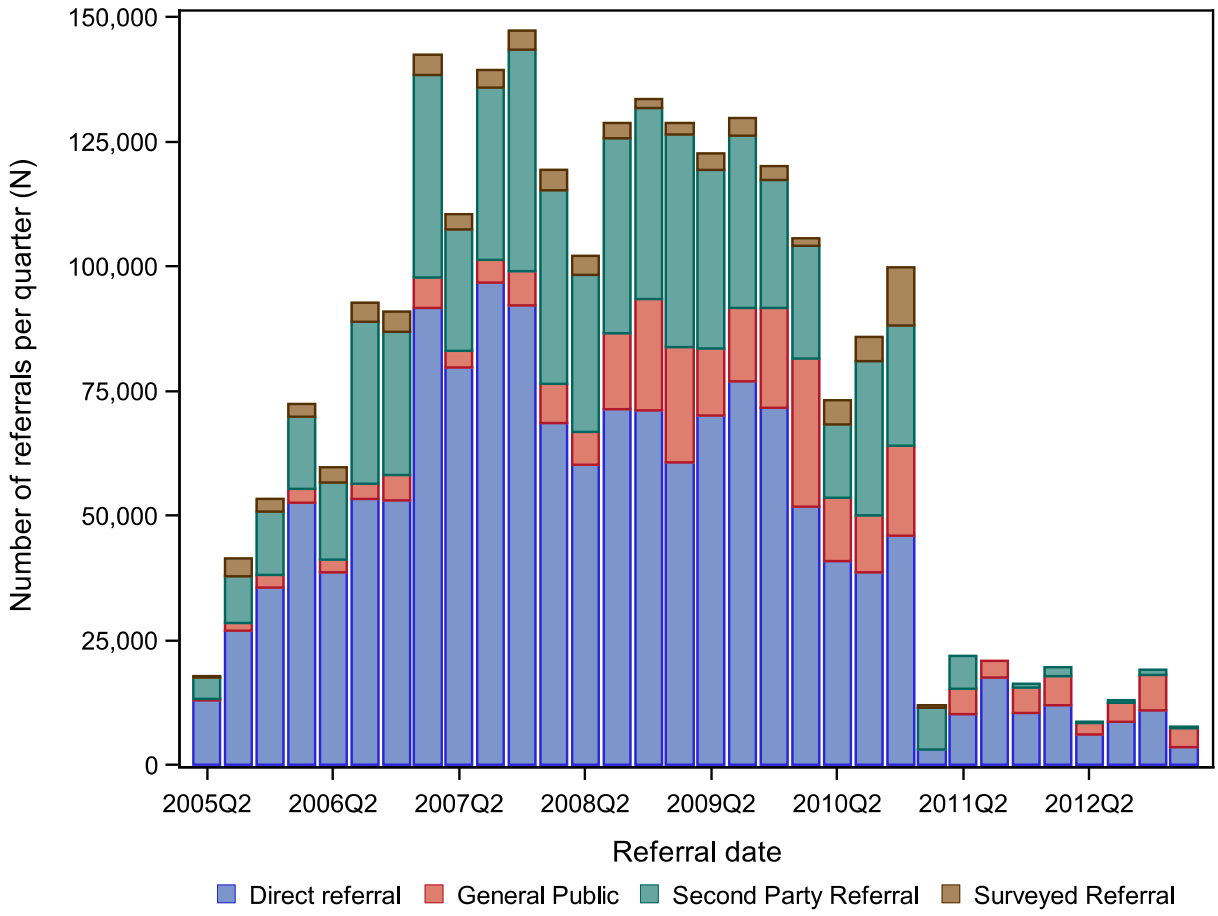
During the course of the scheme, there were fluctuations in both the number and the source of referrals (see Figure 12). These fluctuations seem to have resulted from changes to the available budget of the scheme; the stipulations as to who could generate referrals; the eligibility criteria; and the support of networkers.

Examples of scheme changes which stakeholders believed to have impacted on the effectiveness of the referrals system are as follows:

- In 2011 the scheme manager stopped accepting second party referrals, and stipulated that applicants had to complete their own application forms;

- Before the introduction of e-bid, installers had some incentive to generate their own referrals. Introduction of the bidding process, however, meant that it was less likely that installers would win referred jobs, and so had less incentive to generate referrals;
- Narrowing of the eligibility criteria made referral generation a less cost-effective activity for charities and local authority.

Figure 12 - Referrals by month and by referral channel



Stakeholders reported that relatively sudden changes to the conditions of referrals meant demand lagged behind the 'availability' of the scheme. Some third party organisations said this left them in a position of having to explain to those they had encouraged to apply that they were no-longer eligible for the scheme. It also resulted in their having to scrap and re-produce promotional materials to reflect changes.

> ***"When we tightened it up [the eligibility criteria], it was far too difficult. It was just drawn too tightly and it wasn't effective and the amount of effort that had to go in to get someone suitable out was disproportionate."***
>
> **Advisory stakeholder**

Diversion of the most vulnerable away from Warm Front

Some stakeholders pointed out that the fact that the scheme was never designed to deliver an emergency service impacted on its ability to help the most vulnerable, or those in most immediate need. Charities and local authority encountering very vulnerable people who might qualify for assistance from Warm Front, said they would often 'divert' these individuals to other schemes. They did this in order to install or restore heating or hot water as soon as possible, and to avoid what they saw as unacceptable waiting times for the most vulnerable.

> ***"We could easily enough make referrals but, if we came across somebody who was very vulnerable with no heating in the middle of winter, what's the point of making a referral to Warm Front when it's going to take six months to get the heating mended? So we were frequently having to try and find alternatives, so raising charitable funds or accessing other grant pots."***
>
> **Referral network stakeholder**

Supporting scheme applicants beyond referrals

Stakeholders from organisations which made referrals to the scheme sometimes said that they found themselves acting as intermediaries if problems occurred later down the line. Some charity and local authority stakeholders stated that people they had referred to the scheme would contact them, rather than Warm Front, if they had a complaint or a problem. The charity or local authority would then have to expend time and effort trying to resolve the issue. Section 7.5 discusses the channels used for complaints, and applicants' experiences of this process, in further detail.

5.4.4. Cost effectiveness of referrals

The referrals process was seen by the scheme manager and advisory stakeholders to be very cost effective; numerous referrals were generated, and little staff time was charged to the scheme's budget. Third-party referrals were reported to be mutually beneficial for the scheme manager and third party organisations; both stated that they achieved their aims of alleviating fuel poverty and improving living conditions for the vulnerable.

Cuts to spending on referrals, and the reduction in support for those generating referrals, demonstrated for many stakeholders just how effective this avenue had been.

> ***"You have to have in place pathways for people to get to the service and to find out about it. If you cut those pathways out as DECC did when they told CES to basically get rid of all their marketing…of course the level of awareness and the level of people coming forward for help completely dropped. …They did it because they didn't want to overspend, [but] went too far the other way."***
>
> **Advisory stakeholder**

The referrals process also seems to have acted as an initial filter for eligibility, which meant a greater proportion of referrals qualified for the scheme than direct applicants, saving time and money (see Figure 12).

5.5. The application process

Most householders said that the application process was straightforward, and easier than they expected for a scheme of this kind. Several said that they were 'used to filling out forms' and familiar with systems for applying for funds because of the benefits they have to claim.

Where applicants applied too late in a scheme year and found the scheme to be closed, they said this was explained to them clearly. Several were given advice on when to submit another application in the following year, though they did not often recall being directed to alternative sources of support.

Some successful applicants reported they had to be proactive and persistent in applying for the scheme. Stakeholders, however, reported that some more vulnerable applicants were less likely to reapply if knocked back on their first approach to the scheme.

> ***"I tried to apply by phone in 2010 but had missed out. The following year I set reminders to do an application, because they said I should apply in the first few days of the scheme to be sure of getting in. I put in an application online, then phoned as early as I could on the first day of the new year. After that I was accepted."***

Successful applicant, East, aged 51, Heating & Insulation

Some applicants spoke of being assisted in their claims by carers or other family members. Others said they had been referred through charities or the council, and had been helped to apply by the referral organisation.

A few mentioned finding telephone operatives helpful and reassuring, which impacted positively on their experience. A very small number said they found the application process difficult or long-winded.

5.5.1. Grant levels

Under Warm Front, each eligible household had a 'grant' of a set size available to them. This grant had a fixed ceiling, which changed over the scheme years. Grant ceilings were higher for households classified as 'hard to treat'. When the grant maximums were changed over the years, they changed for all households, including those which had already received measures. Most customers reported that they were, to some extent, aware of these grant limits, but there was little they could do to influence how the money was spent.

Some customers said they asked lots of questions at the application stage, to reassure themselves about the support available. Some were surprised that the measures were free of charge: thinking there must be a catch, or that hidden costs would emerge later. A number said it seemed 'too good to be true', since 'you don't get anything for free these days'.

Initially sceptical applicants reported being delighted on finding the Warm Front offer was genuine. A couple of householders said they felt reassured by the responses they received from CES staff at the time of their initial call.

Other householders did not recall hearing or knowing anything at the application stage about how the costs of the measures would be met. Individuals who reported feeling more confident that the full cost would be covered by Warm Front (usually because they were in receipt of certain qualifying benefits) tended to have worried and asked less about grant levels. However, by the time of installation, some had very clear expectations of grants, sometimes saying they had been informed of the ceiling amount of funds available to them (although they did not always understand or agree with how these budgets were subsequently spent).

5.5.2. Customers' expectations of scheme timescales[28]

Variation in timescales, and long wait times, were reported to be a concern for a number of stakeholders. Stakeholders also believed that customers' expectations of timescales were a major factor in their eventual satisfaction with their experience of the scheme. The majority of customers, however, stated that they were happy with the waiting times they had experienced.

Several customers reported expecting long waiting times when they first applied to the scheme, with some expecting to wait between a few months and a year between each stage of their application. Customers sometimes stated that they expected waits to be long because Warm Front was a government scheme, and might therefore be backlogged and slow due to high demand.

Some customers said they were led to expect long waiting times and delays from the scheme, either by the scheme manager or referral organisations. A few respondents reported expecting quick service and considered five to six months between application and installation to be a long wait, even if this was over the summer months.

Customers who expected a long wait tended to report being pleasantly surprised by the relative speed of the end-to-end process. A member of CES staff said that applicants were advised that a surveyor would come out within 21 days. Accordingly, householders generally said they had a clearer expectation of timescales from the point of application onwards.

CES staff reported some when some customers first contacted the scheme, they expected a surveyor to come out to them within 1-2 days. CES staff said this was more problematic where householders had an immediate heating crisis to deal with, a medical condition, or were left waiting over winter months. Some customers, they reported, dropped out because of these waits. Some were able to access support through other (local authority or charity) schemes, whilst others opted to take out loans to get measures installed.

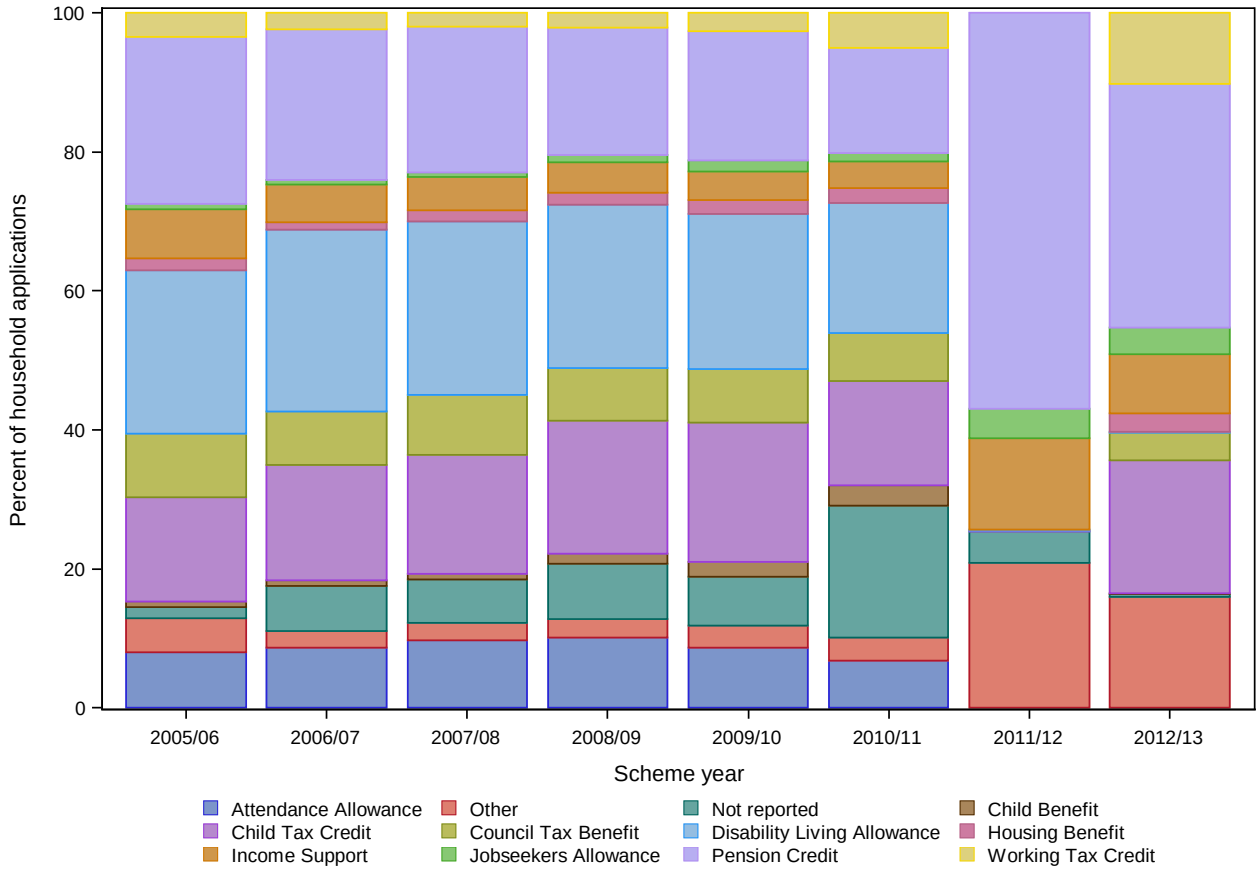
One referral network stakeholder pointed out that some applicants suffered a long wait between application and assessment, only to find out at assessment that they were ineligible for the scheme. Such applicants often therefore delayed making other plans in the hope of receiving measures under Warm Front, and therefore had to cope without heating or hot water for longer periods than they would have done had they sought another solution from the outset.

5.6. Qualifying benefit claimed by applicants

Figure 13 shows the relative proportions of different benefits being received by customers of Warm Front across scheme years. Child tax credit, disability living allowance and pension credits were the most commonly claimed benefits, though it should be noted that customers were often claiming multiple qualifying benefits when they applied to the scheme. In 2011 DLA was removed as a qualifying benefit, as was the child tax credit. Pension credit therefore became the major proportion. In 2012 and 2013 child tax credit reappears.

[28] A table of timescales for different activities under Warm Front is presented in section 9.5

Figure 13 - Benefits received by applicant households



Other includes all benefit types with <1% of total scheme applications; comprises 3.3% of scheme total
Note that households can be in receipt of multiple benefits

5.7. Benefit entitlement checks

Stakeholders reported that some of those who applied to Warm Front for help were not claiming all of the benefits to which they were legally entitled. In some cases, this meant that individuals were doubly disadvantaged: they were not receiving benefits which they had a right to claim, and they could not be helped by Warm Front because they were not claiming these benefits.

To help these applicants, in 2005, applicants who were not claiming a qualifying benefit were offered a check on what, if any, benefits they were entitled to claim. From May 2007, these checks were reportedly offered to all applicants to the scheme, even those who did qualify for the scheme at the point of application.

Stakeholders thought benefit entitlement checks were helpful, particularly as this was not a service which members of the public could easily access elsewhere. Some Warm Front applicants recalled having a benefit entitlement check. None, however, reported that this check found further benefits for them to claim.

Benefit entitlement checks, for both eligible and ineligible applicants to the scheme, were brought to an end in 2010/11. Data on the number of checks conducted, and on the outcomes of checks, was not available. This, combined with the lack of direct experience of benefit checks amongst applicants interviewed, makes it difficult to gauge the impact of these checks in the scheme.

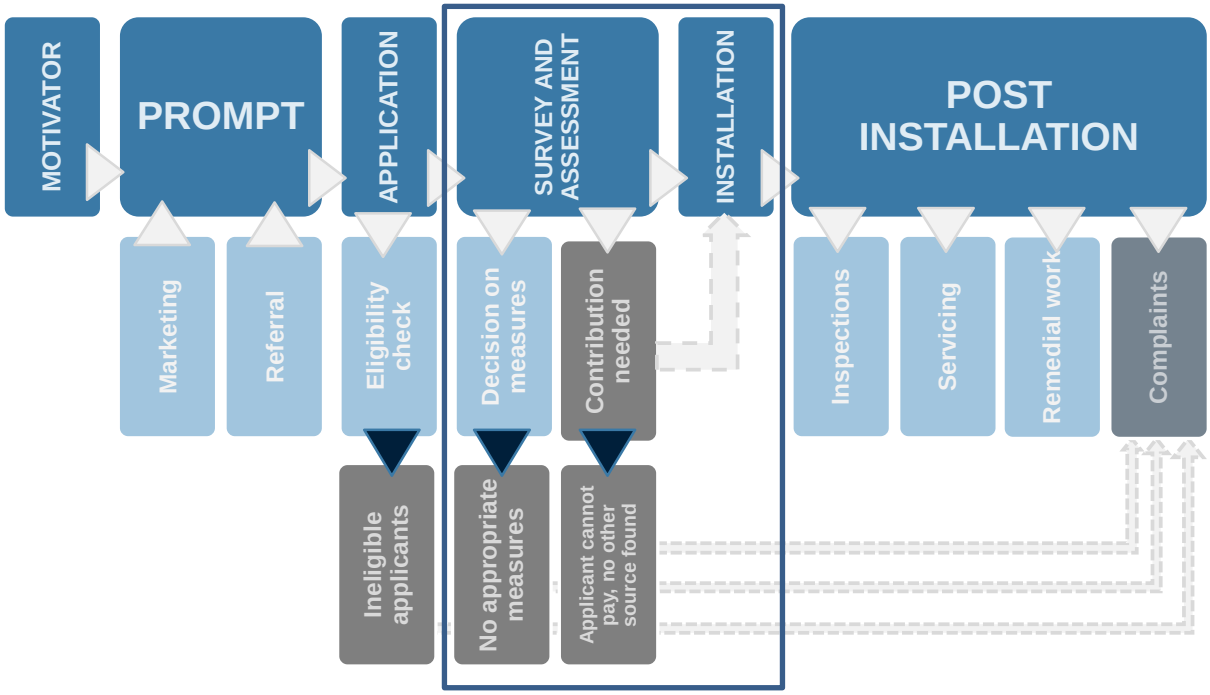
6. Customer journeys – application decisions and installation

This section looks at customers' experiences of the decisions made on their applications to Warm Front, both on whether or not they were eligible for the scheme, and, if they were considered eligible, on what measures were to be installed. It then goes on to look at the period between application decision and installation, and at the installation itself. Figure 14 **shows the customer journey of Warm Front applicants in full, and highlights the sections of this journey which are dealt with in this section.**

Key findings

- Customers' experiences in the aftermath of applications to the scheme were mixed, with some saying they found the process smooth and easy, and others finding it frustrating and slow.
- Most respondents said they received a clear explanation of why they could and could not receive particular measures, and were satisfied with the type of measures they received.
- While some stakeholders felt that the grant maximum was inadequate, overall, an additional contribution to cover the cost of measures was made by around 2.7% of households which received major measures.
- While the grant maximum was higher for hard-to-treat homes, a contribution was made for a greater proportion of houses compared to houses not classed as hard-to-treat.
- Householders were generally satisfied with the installation process and with the quality of their installation. They were generally grateful to have received measures that they could not otherwise have afforded.
- Some applicants reported experiencing poor quality installations or faults with measures installed.
- Though most customers said installers took the time to talk though the operation of new heating systems, not all householders had been able to fully grasp how their new systems worked. This may mean that these systems are not being used to best effect.

Figure 14 – Customer journey – application decisions and installation



6.1. After the application

Customers report mixed experiences in the immediate aftermath of their application to the scheme. Most mentioned being contacted by phone and/or letter about the assessment visit, and one recalled receiving a pack of information detailing all the subsequent stages in the process. A handful of customers, however, said they were not kept informed of progress and had to keep ringing CES to find out what was happening. Whilst one or two said they did not mind doing this and seemed to have had a helpful response from the scheme staff, others found this frustrating.

Increases in cold calls following application

A number of householders reported an increase in cold calling about energy efficiency measures over recent years. Many of these cold calls were offering measures similar to Warm Front, and some applicants made a link with their application, and the increasing number of calls, which they found frustrating.

6.1.1. Surveys

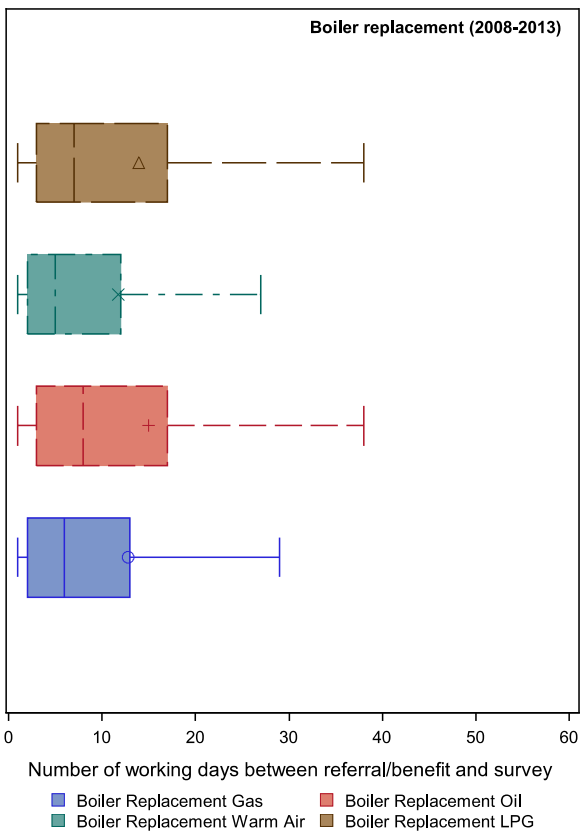
Survey visits were described as thorough and comprehensive, sometimes lasting a few hours. Applicants generally said they found surveyors to be pleasant, patient, helpful and credible, as well as able to answer their questions.

Most applicants said they received one assessment visit covering all the possible work to their property but a few reported having multiple visits to discuss different measures (often to discuss insulation first, then the boiler or heating system). Several householders reported having eligibility paperwork checked at this point, for example showing letters from DWP.

6.1.2. Timescales – application to survey

Customers usually said they received an assessment visit between one and six weeks after the initial application, which most found to be an acceptable timeframe. Some, however, said they waited longer and had to prompt the scheme operator before the visit occurred. A few reported being without adequate heating and hot water during this time. The following charts provide a breakdown on the time between application and installation for different measures (although there is little variation across the type of measure). With a few exceptions, customers said assessors seem to have arrived when expected, and they were able to be present to receive them.

Figure 15 – Number of working days between referral and application for boiler replacement and heating measures



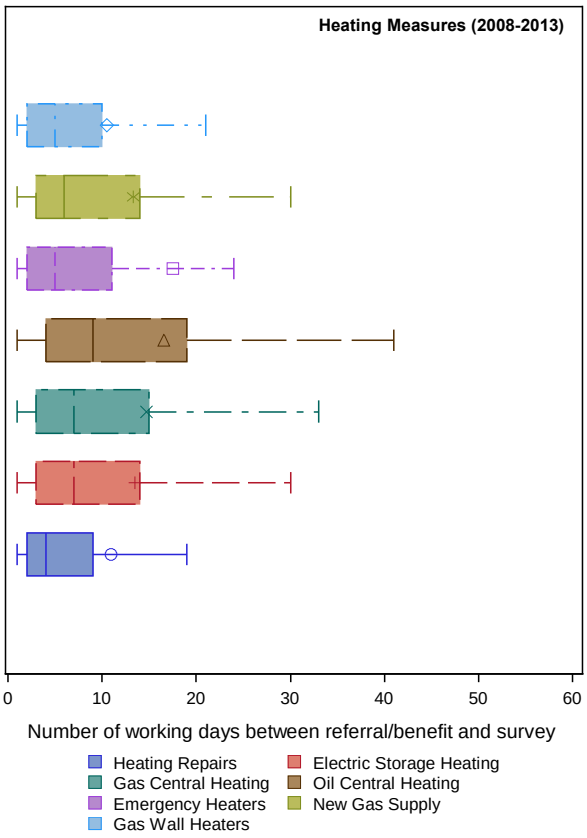
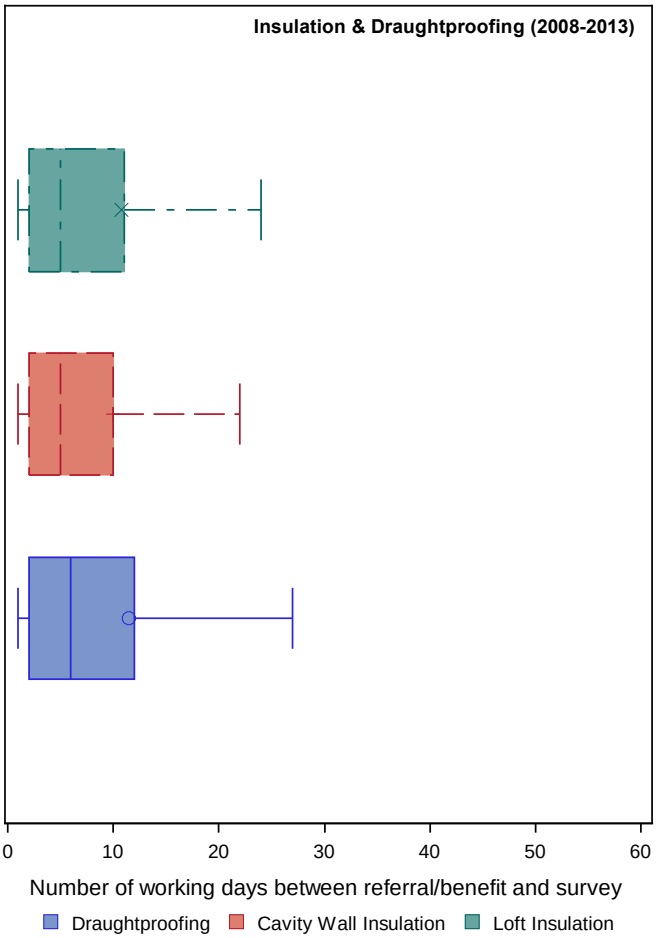


Figure 16 - Number of working days between survey and installation for insulation and draughtproofing



6.2. Decisions as to what measures should be installed

Most customers said they received a clear explanation as to why they could or could not receive particular measures, and were satisfied with the measures they received. For example, some reported being told measures were unsuitable for the property, beyond the budget available, or not available through Warm Front. They said assessors sometimes provided advice about when to reapply to get a boiler replaced, if it was likely to qualify for replacement in the near future, which was appreciated.

A few said they ended up being recommended measures that they weren't originally expecting. For example one householder reported receiving a new combination boiler despite having recently had a different kind of boiler installed. Another said he had his immersion tank replaced, even though it was two years old and had never been used.

Successful applicants reported mixed experiences of involvement in decisions about their installation. A few mentioned being involved in the installer's decision on where to site a new boiler, which was helpful and pleasing to them. Others felt it was the assessor's sole decision, and were sometimes unhappy with the outcome. One customer said she had asked her son's carer to speak with the assessor about the siting of the boiler and tank, not feeling able to do this herself.

Some said they were told at this stage about likely disruption during the installation visit, for example carpets needing to be taken up, and were glad to have forewarning of this.

6.2.1. Post-assessment experience

Successful applicants usually recalled being told what would happen next after the assessment, but did not usually recall being told exactly when things would happen. Where customers felt communication had been good, they were generally happy with their post-assessment experience. Where they felt communication had been poor or inaccurate, they were generally less satisfied.

Sometimes customers said they did not hear back after their assessment and were left to call and chase up the scheme operators themselves. In a number of cases, they reported original surveys being lost and having to be repeated. Some of those whose surveys were lost remained very positive about the scheme. One described the administrative error as "a hiccup", without which the process "would have been a dream" otherwise. Another said she did not mind having to go through the process again, given that the final outcome was her receiving the measures. These customers often said their applications were 'fast-tracked,' to make up for the mistake, so that they did not experience the full wait of someone who was applying for the first time.

> ***"It wasn't a problem to have the assessment twice - I was getting a wonderful free gift. What are you going to get annoyed about? You're being helped. It's more annoying being cold…To me this is an absolute luxury. I don't have anything to complain about."***

Successful applicant, East, aged 60, Heating

Others, however, felt disappointed or angry, particularly when there was no communication from the scheme manager. A few said they had two or more failed surveys before finally getting through to the installation stage, and noted that this was wasteful of scheme funds as well as everyone's time. Some talked about the stress and frustration of having spent time applying and being assessed, only to hear nothing and have to chase things up themselves (which often proved difficult). One reported finding it depressing not knowing what was going on after their initial excitement about the scheme. One or two felt that take-up of the scheme had been underestimated, and that the scheme manager was unable to manage its administration and delivery effectively.

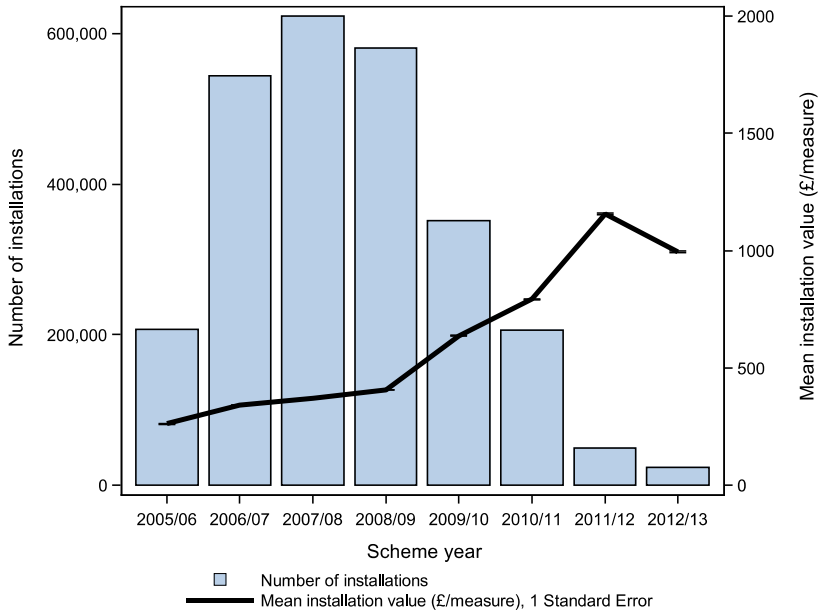
A number of different stakeholders agreed that a failing of the scheme was not doing what had been promised, and suggested that more could have been done to set clear, consistent and reasonable expectations. A member of CES staff noted that early on, before they had experience of the scheme, they probably raised customers' expectations too high, especially in regard to timescales. This stakeholder felt that, further down the line, they were better at managing applicants' expectations.

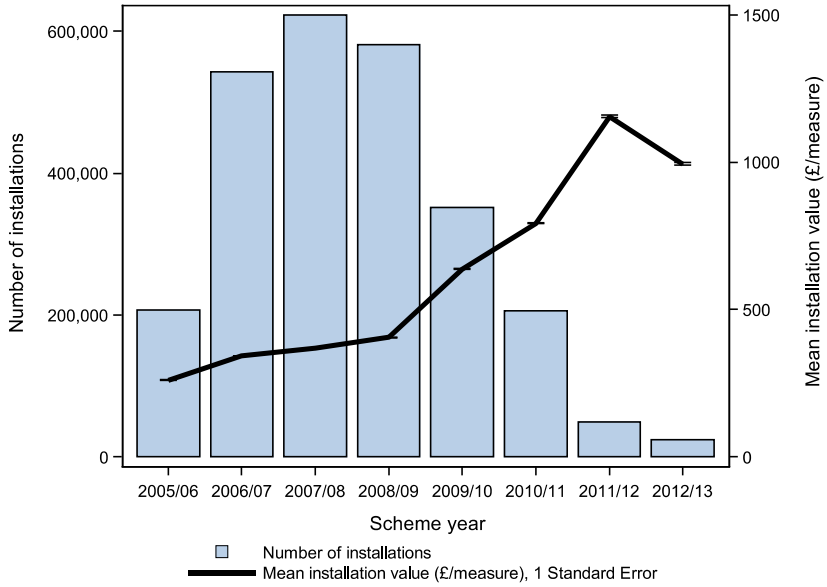
6.2.2. Size of grants and householder contributions

Between 2005 and 2008, the grant maximum for most properties was £2,700. In 2009, this was raised to £3,500. For hard-to-treat houses, the grant maximum was raised from £4,000 to £6,000, yet a greater proportion of those in hard-to-treat houses needed to contribute to the measures they received. Overall, quantitative analysis of scheme data shows that a contribution was made towards less than 2.7% of measures installed. There is no data, however, on the number of households asked to make a contribution, so it is unclear whether or not a proportion of households dropped their applications when asked to make a contribution.

Figure 17 shows the average value of each installation by the Warm Front scheme, per year, and the number of total installations. The high number of Compact Florescent Lightbulbs (CFLs) installed in the early years of the scheme contributed to a lower average cost for installations. Once CFLs were phased out of the scheme, the average cost of the installations increased to reflect the more substantial installations being provided. The average installation was nearer to £500 per measure in 2005 and rose to almost £1000 by 2010. The mix of measures varied over the period (see Figure 32) and in the latter years of the scheme, an increase in the number of boiler replacements and a reduction in the number of insulation measures drove the increase in the average cost per measure.

Figure 17 – Mean installation value and number of installations, with and without CLFs





Excludes CFLs from costs and measures

While the mean costs of measures increased over the period, costs associated with administration and service provision remained largely steady.

Figure 18 shows the value of scheme activity by type and service. As shown above, there was an increase in the average cost for measures, but the average costs associated with administration and services remained largely constant. Across the scheme years, despite fluctuations in the scheme budget, administrative and service costs fluctuated less than spending on measures.

Figure 19 shows the mean value of scheme activity over the scheme period, and the mean installation value by measure.

Figure 18 - Mean value of scheme activities

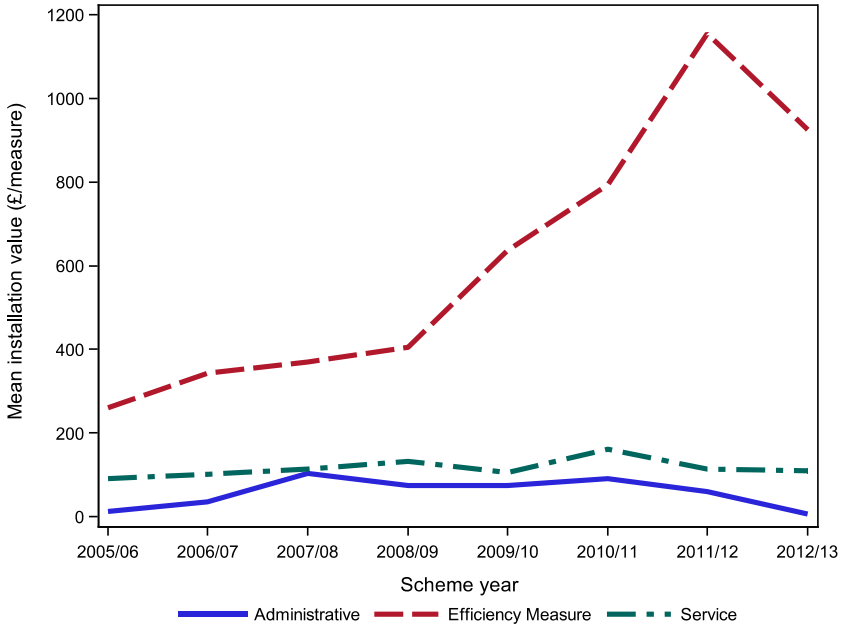
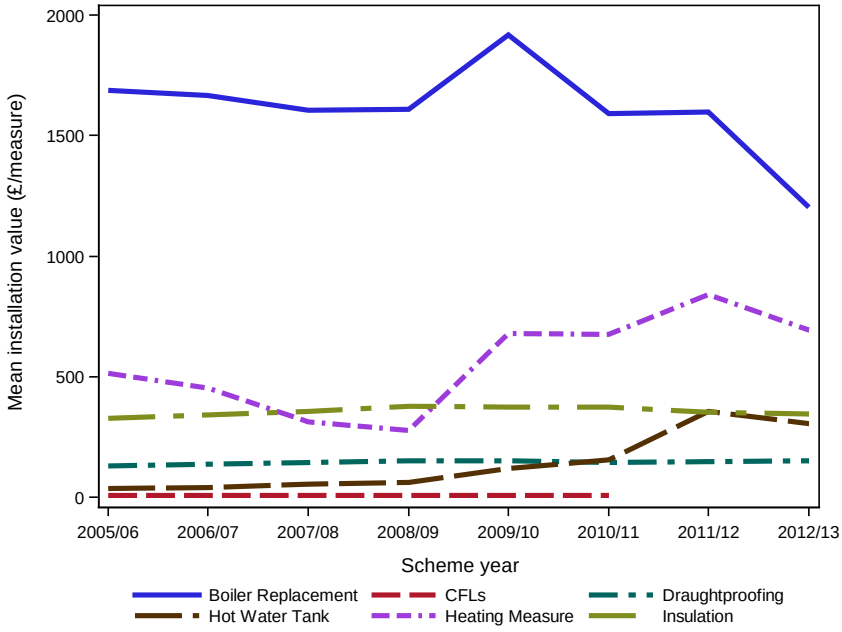


Figure 19 - Mean value of measures installed



Using household level data, Figure 20 and Figure 21 show the average value of excess contributions towards measures, paid by customers and by third parties, per quarter. The amount contributed varied through the years from £260 to £450. A sudden drop in early 2009 coincides with a rise in the grant maximum from £2,700 to £3,500. The charts show the average contribution value (from all sources) and the mean installation value (excluding contributions) for households that made a contribution, by year. The contribution made up, on average, 16% to 20% of the total installation value.

Figure 20 - Excess contributions from households

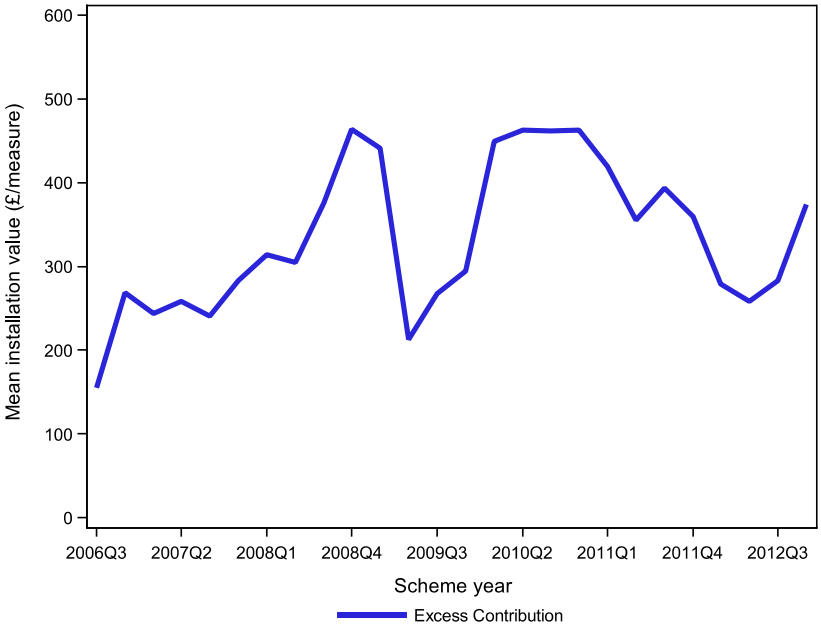
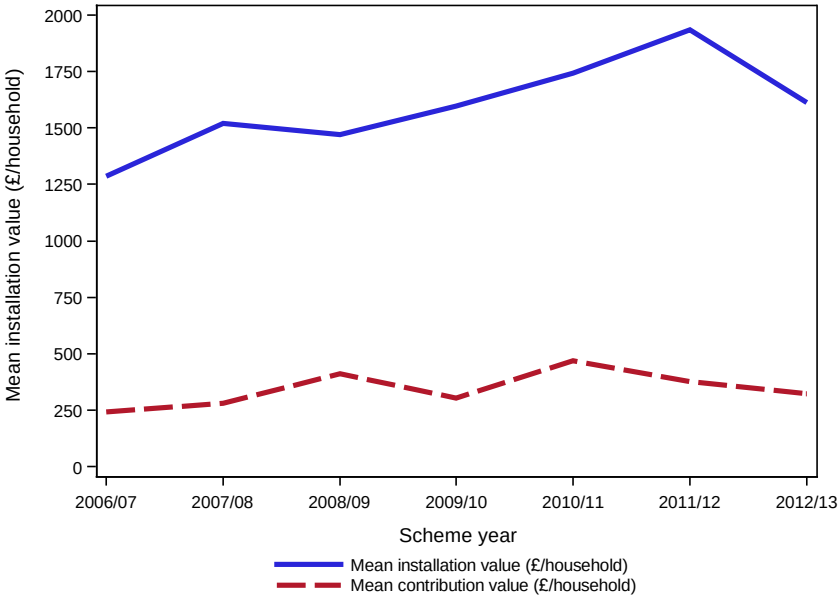


Figure 21 - Excess contributions by households and value of household measures



Households that made a contributior

6.2.3. Householder contributions – qualitative insights

The vast majority of successful applicants said Warm Front had covered the complete cost of the work, but some stakeholders felt that the grants were inadequate. Requests for contributions to cover the residual costs had, stakeholders claimed, led to some applications becoming 'stuck in the system'.

When customers had to pay a contribution, this was generally reported to have been because they had previously received measures through the scheme, which had depleted their available grant. In some cases, householders may have spent their entire grant on first application. Subsequent increases in the grant maximum, however, were applied to previous applicants, which meant that more money was available to these householders when they later re-contacted the scheme to ask for further assistance.

Some stakeholders felt that grant maximums were inadequate, and that this lead to householders being asked to pay contributions which they could not afford. When this happened, stakeholders felt, applications had sometimes become 'stuck in the system'.[29] Perceptions that the grant maximum was too low were exacerbated for some stakeholders by the belief that installation costs were inflated. Stakeholders who believed this to be the case had been frustrated because they believed that householders might have been able to get the work done within the grant maximum, without need for a contribution, had they been able to use local suppliers.

In some cases, local authority or charities were able to source funding from other pots to pay householders' Warm Front contributions for them. Local authority anticipated that a number of householder contributions would be needed each year and in some cases worked with Warm Front to directly allocate available funding to householders applying from their area.

6.3. Installation - customer experiences

Customer experiences of installation were broadly positive, and more so when the customer knew what to expect before the installation occurred. Dissatisfaction, when it occurred, was mainly due to issues with the cosmetic aspects of installation, though in a few cases there were substantive issues with the installation itself, the measures installed, or the installation process.

With a few exceptions, customers reported that installations happened when expected. One or two customers had been asked to call the installer to make an appointment themselves, which they generally said they were happy to do. One applicant felt particularly reassured to speak to the installer team first-hand, and see that they were experienced and verified. A couple of others mentioned that they would have preferred to have had a choice of a few local installers to select from and liaise with directly.

6.3.1. Timescales for installations

Customers were generally happy with the timescales for installation, even where they had experienced a wait. Quantitative analysis shows that, while small numbers did experience very long waits, the majority of installations were carried out within specified timeframes.

According to householders, installation visits happened anywhere from two weeks to several months after the assessment. A few customers mentioned feeling that they were lucky to have had their measures installed very quickly because they had applied early in the scheme year. Some customers reported delays, or longer wait times than they had been led to expect. Reasons they gave for these delays included there being high uptake of the scheme, or their surveys having been lost (as discussed in section 6.2.1).

[29] Local authority stakeholder.

Several customers said that extended timescales were acceptable, given that the measures were being installed for free. Some also cited the fact that Warm Front was a government scheme, with worthwhile social and environmental goals, as a reason for being patient over the delays. Some said they understood clearly the reasons for having to wait, for example when told about the high demand for the scheme. These applicants generally felt that the timescales were still reasonable. Perhaps unsurprisingly, those whose wait fell over the summer months seemed to find it easier to bear.

Figure 22 and Figure 23 show the number of working days between survey and installation for different measures. This varied somewhat across measures: the most common wait for a boiler replacement was 35 working days; for gas central heating 38 working days and for heating repairs 29 working days. For cavity wall insulation the most common wait was 19 working days; and for loft insulation 17 working days.

Customers generally said installers turned up at the appointed times. Occasionally, however, there were reports of staff not turning up when expected. Those who had experienced missed appointments tended to have experienced several missed appointments, though it is possible that multiple missed appointments were more memorable, and some of those who experienced a single missed appointment may have forgotten the fact.

Figure 22 - Working days between survey and installation for heating measures

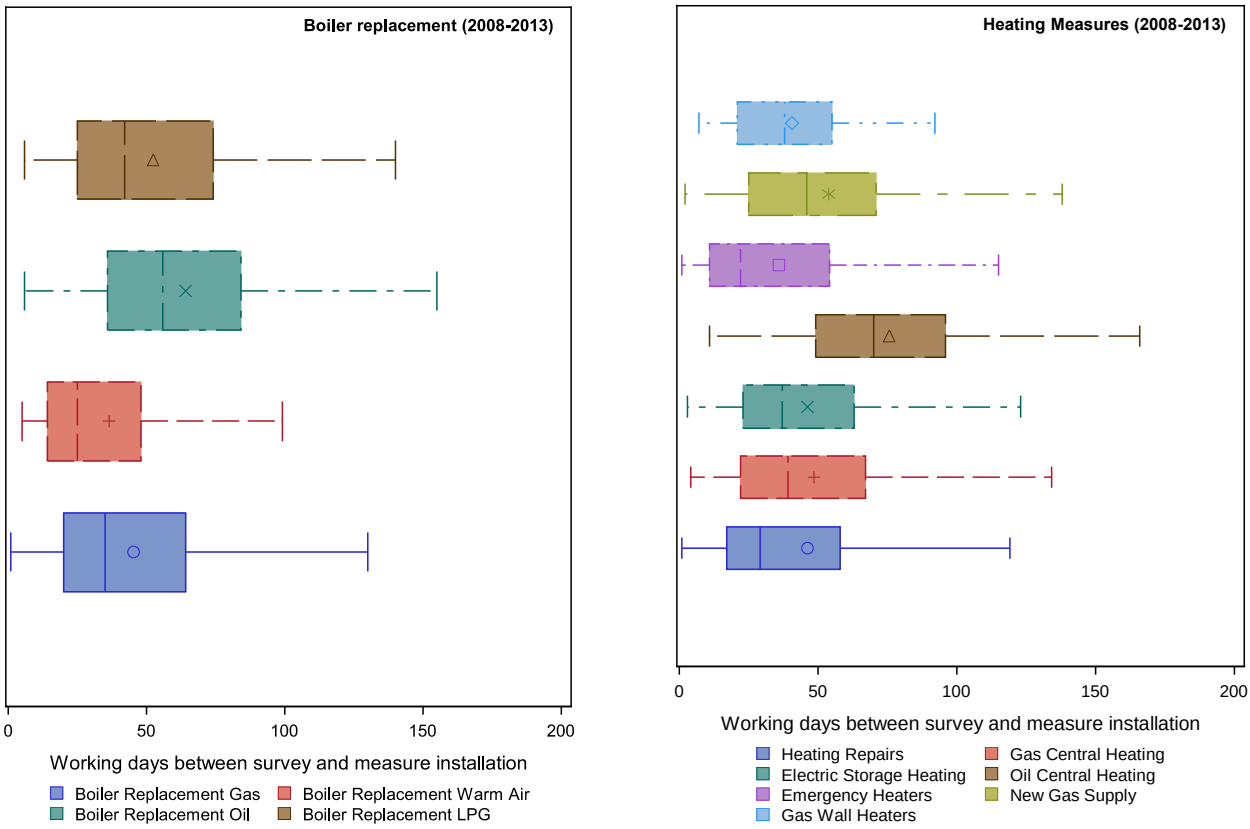
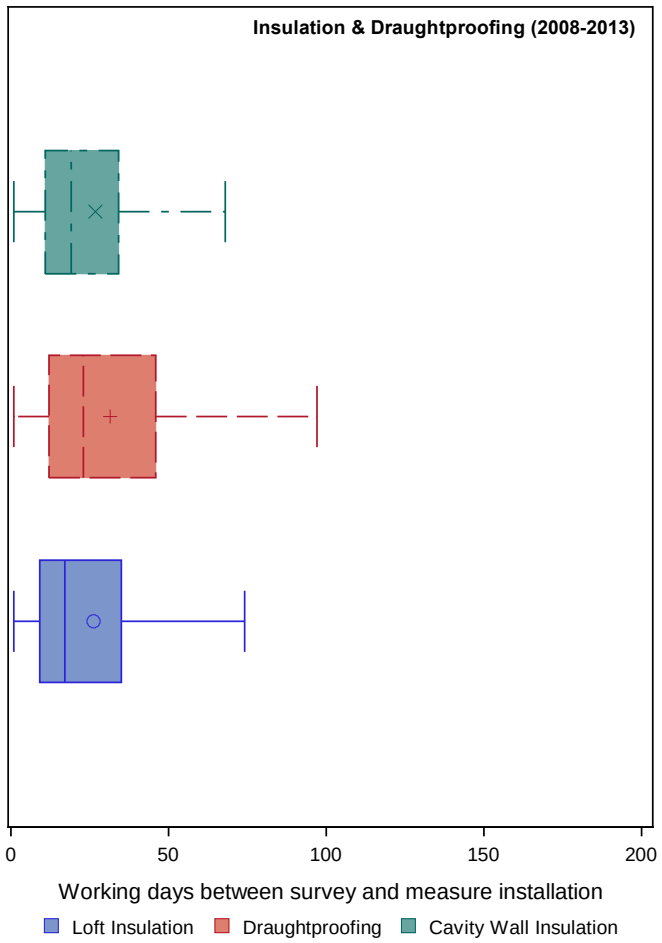


Figure 23 - Working days between survey and installation for insulation measures



6.3.2. The installation visit

Most householders reported that installations went smoothly, that installers were professional and pleasant, and that any problems were swiftly dealt with.

Some respondents said they had all measures installed in just one visit, sometimes involving multiple tradespeople, for example, plumbers and electricians. For others, measures were installed over several visits, which sometimes involved having insulation first, followed by the installation of a new boiler or heating system.

Many said the process went smoothly, though work was often quite disruptive, messy, noisy and long. Installation sometimes involved carpets being taken up and drilling into walls, but most saw these inconveniences as a small price to pay for the end result. Some reported finding installation stressful, or not particularly pleasant, with a number preferring to keep out of the way while it was happening. One or two householders said they prepared for the visits beforehand, for example by clearing their lofts.

In nearly all cases, householders said they found installers to be pleasant, hard-working, professional, efficient and respectful of their home. Several said they had expected problems but were pleasantly surprised. It is worth noting that various stakeholders said that installers had been instructed that the level of service should be the same as for privately funded work. Customers felt that installers were generally able to explain the work they were doing, and answer questions. Some said that installers provided useful additional advice, for example on insulating the garage.

Some householders said the installation ended up taking longer than expected due to unforeseen problems, for example, the installer not having the right equipment, or the wrong materials having been specified at the point of survey. This was not generally a major issue where the problem had been quickly and satisfactorily resolved. A small number of customers reported that installers sometimes liaised directly with third parties to resolve problems on their behalf, for example liaising with infrastructure organisations over mains inlet gas pipework.

6.3.3. Quality of products and installation

Most successful applicants said they were happy with the quality and standard of the work done in their home, including, for example, the thickness of insulation, functionality of heating equipment and effectiveness of new radiators.

Those who received a new boiler often said they noticed the difference in speed and efficiency of getting hot water or space heating, as well as the equipment being quieter and cleaner in some cases. The majority preferred their new system, although one or two said they missed their old boiler for the level of warmth or ease of use. One mentioned feeling confident in the system she received because of its seven-year warranty.

> ***"With this boiler, you have hot water within 10-15 minutes. I put the boiler on for half an hour every day or so, and that's enough hot water for two days."***

Successful applicant, East, aged 51, Heating & Insulation

On the other hand, a few householders felt that installers rushed the job, compromising the quality and professionalism of the work. A couple of householders reported things being missed during the installation, for example cavity walls that hadn't been evenly insulated, or drill-holes that weren't patched up. One or two respondents felt that better vetting of installers could have been done by the scheme manager.

Occasionally, householders reported knock-on effects, for example ventilation being blocked by cavity wall insulation, leading to condensation. In a few cases, they said plumbing faults at installation, such as leaking pipes, were not spotted straight away. One householder said she had a gas leak, as soldering work to install the boiler had made small holes in the gas pipe below. She felt that the installers should have taken steps to avoid this happening.

Some said they had been disappointed that their preferred brand of product, particularly of boiler, had not been used. For some householders, a boiler installed under Warm Front was reported to have needed replacing sooner than the householder would have expected. In some cases householders or installers believed this was due to the make and model of boiler installed. Supply chain stakeholders, however, point to the fact that the boiler is the part most likely to be affected by issues elsewhere in the system.

Some householders reported other problems, including radiators being cold in places, and draught-proofing that had broken off or was ineffective from the outset. In one or two cases householders said they received conflicting advice on how pipework should have been fitted from installers, servicers and manufacturers.

Some installer and local authority stakeholders felt that quality may have been sacrificed to keep costs low within the scheme. A member of CES staff also noted that there was often a very limited choice of boilers available, and this varied by area of the country. This stakeholder suggested that the list of available boilers could have been communicated more clearly. They also suggested that perhaps customers could have been given a choice between manufacturers, models, and installation companies, and that this would have helped them to feel more in control.

6.3.4. Cosmetic aspects of installations

Stakeholders stated that cosmetic aspects of installation were sometimes a disappointment to customers of Warm Front, and this was supported by the views of some customers. Where customers were dissatisfied with aesthetics, inconvenient siting of water tanks or boilers, failure to correctly patch-up damage or clean up mess, and prominent pipework were the key reasons cited.

Some householders reported disappointment when there was unexpected mess or damage during installation, for example holes drilled in inappropriate places and not patched up, or carpets pulled up and not relayed as they had been. Others said they experienced unexpected knock-on effects, for example losing a gas fire feature, immersion heater or airing cupboard space. Most felt prepared to accept these losses in return for the benefits of new measures. However, a few said they would have appreciated further explanations for why this had been necessary.

Others were disappointed with cosmetic aspects of the final installation, for example visible pipework on outside walls or in living spaces, tanks sited inappropriately, mismatching paintwork (following cavity wall insulation) carpets not being re-laid properly and drill-holes left in walls. One respondent said the pipework was at funny angles and he could no longer open one of his cupboards without breaking a pipe. Another customer suggested it would have been helpful for the installers to have been more involved at the assessment stage to manage expectations about what was possible or not in terms of the appearance of the measures. However, others recognised that this may have been difficult to predict before the installation work started.

6.3.5. Getting more than expected from Warm Front

Some householders reported getting more than they expected, for example one or two extra radiators. One householder said he was particularly pleased to receive an easily accessible tap for the heating system. For another, receiving a wireless controller to set the temperatures in different rooms was an unexpected but welcome benefit, as it meant he could easily adjust the heating without having to touch the boiler.

6.4. Instructions for using new heating systems

Householders usually recalled being told how to operate new heating systems, and being left with written instructions. Where these instructions had not been fully understood, however, it often appeared that customers were not using new heating systems to best effect.

One respondent who was not fully literate mentioned the installers taking time to talk him through the instructions. Several said they were left a phone number to call if they had problems, sometimes even receiving the installer's personal number and told to ring at any time day or night.

Some said they had subsequently found their new system easy to understand and use. However, not all felt able to take in all the information on the day and, as a result, seem to have been unable to use the system to greatest effect. For example, a few said they had trouble with setting timer clocks and programmes for their heating. As a result, some had their heating on all the time, or would turn it off at night and wake up in a cold house.

A couple of respondents reported having managed to resolve problems easily, either by referring to the written instructions or calling the installation company (stakeholder interviews confirmed that this was a key reason for installers coming back out to properties). However, others said they preferred to manage as they were or get help from friends or family. No

customer had contacted Warm Front directly to ask for help in operating the controls. As one customers said “I didn’t think they would want to bother with it”.

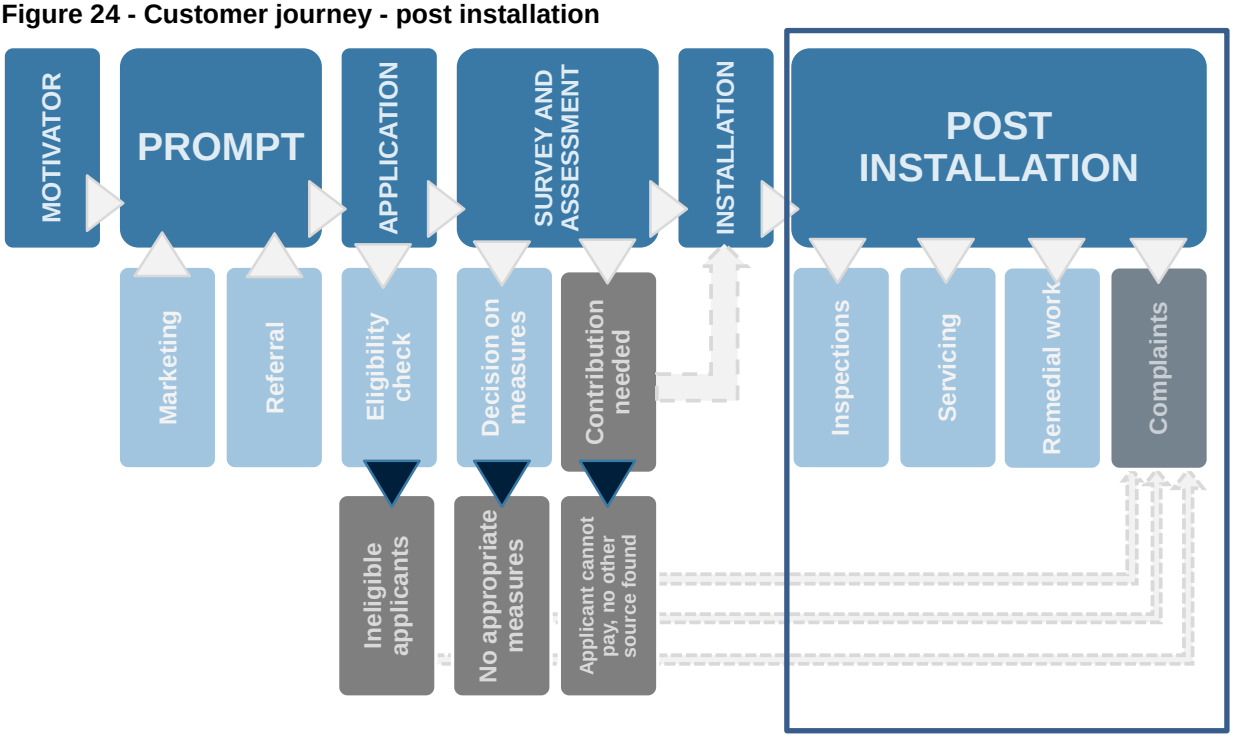
7. Customer journeys – post installation

This section looks at customers' experiences after installation, and also at customer complaints, whether made by successful or unsuccessful applicants. After installation, customers might have experienced inspections, servicing, or remedial work on the measures installed. Some who were unhappy with their experience or measures will have made complaints to the scheme, and this section looks at why those complaints occurred and how they were dealt with and resolved by the scheme manager. Figure 24 shows the customer journey of Warm Front applicants in full, and highlights the sections of this journey which are dealt with in this section.

Key findings

- Those applicants who felt satisfied with their experience often spoke of the speed and smoothness of the end-to-end process, and felt this should be retained for future schemes.
- Most were satisfied with what was installed. Some, who were particularly pleased, spoke of how easy to use and modern their measures were, and of noticing the difference in warmth and efficiency. Several said they would recommend the scheme or their installer.
- Views on customer services from the scheme were mixed, and there were some examples of very good and very bad experiences. A number of applicants highlighted that staff were pleasant to deal with.
- Several scheme applicants said they were satisfied in spite of faults, delays, or doubts about the quality of installations. Satisfaction was attributed to the fact that the alternative was to get nothing done at all.
- Many respondents said they were pleased and grateful to have benefited from Warm Front, and some stated that they were lucky to have 'got it in time', before the scheme closed.
- Installed measures often came as a great relief, addressing long term worries about heating and warmth. Several described the scheme as a lifeline.
- Unsuccessful applicants were, understandably, generally less satisfied. Those who had expected to receive support but who were not clearly told that their application had been unsuccessful, or who believed their application had been successful but had never received measures, were particularly disappointed.
- Other areas of dissatisfaction amongst applicants focused around poor communication during wait times, and faults arising with what had been installed.
- Although some had been able to resolve faults and issues speedily, others reported long waits, and, for a very small number, there had been no satisfactory resolution.

Figure 24 - Customer journey - post installation



7.1. Post-installation checks

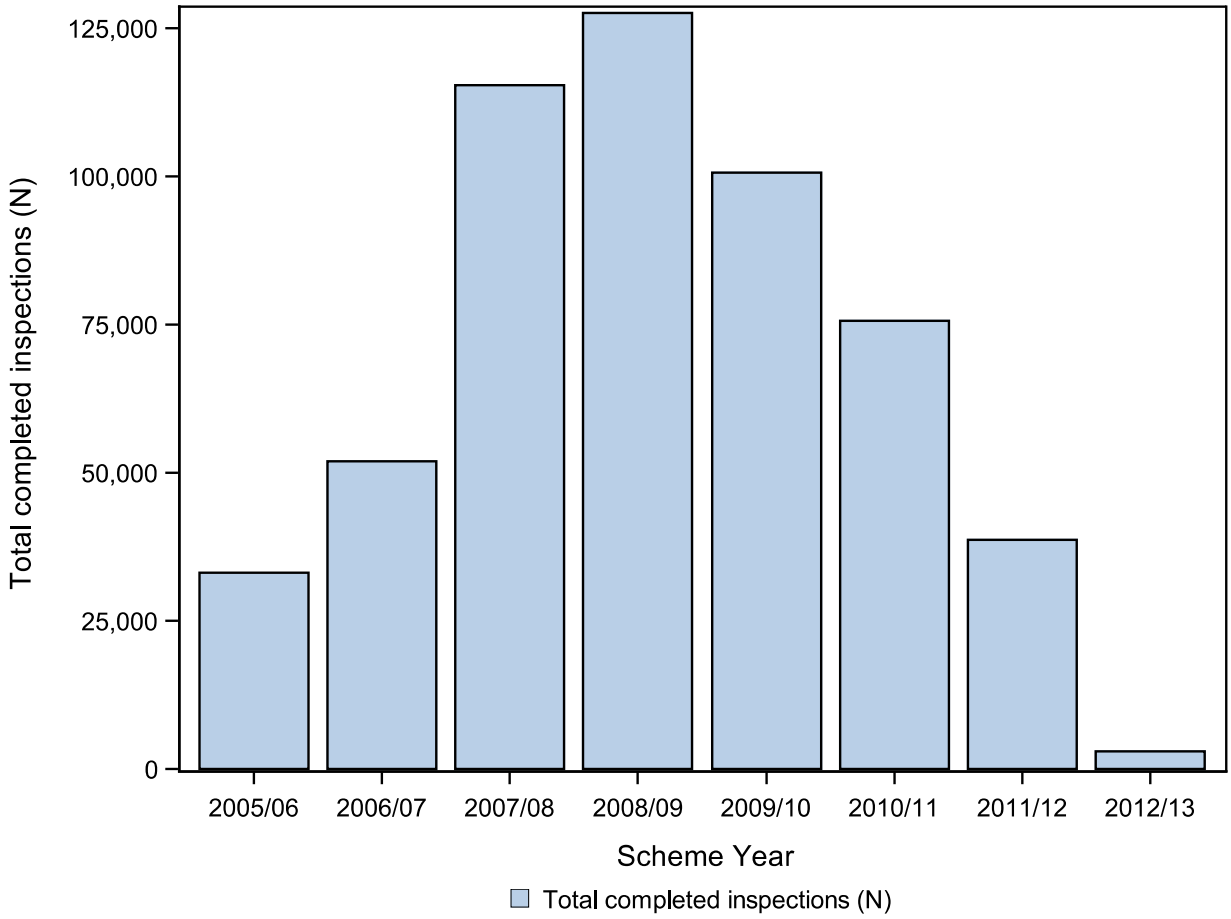
Customers' experiences of post-installation checks varied, though those who had such checks were generally satisfied. Early on in the scheme, every gas or oil heating installation was subject to an inspection. This was reduced to 10% of gas or oil heating installations in 2011 (see Figure 25 for the number of inspections completed over different scheme years).

Amongst those who had not had an inspection of measures, some mentioned that checks would have been helpful for their peace of mind. An interval between installation and inspection was seen to be useful by stakeholders and householders alike, as it gave customers time to become used to their new measures, and for issues and questions to surface.

Several customers remembered having their boiler checked within a few days of installation, often by the installer or their supervisor. Others said they were told they might receive a spot-check but did not in fact receive one. Some recalled having service checks after one year, and sometimes after two years. However, others said they hadn't had these checks or couldn't remember. Some customers expected to have maintenance checks but were later told these were not included under the scheme.

Where post-installation visits occurred, they were generally described as being efficient and thorough, lasting upwards of 30 minutes. During some of the checks experienced, problems were identified and rectified, for example badly fitted pipework or thermostats. In one or two cases, the siting of measures seems to have caused difficulties in conducting check-ups. One or two customers also reported problems with inspectors missing appointments.

Figure 25 - Inspections completed by scheme year



A few of those who were not eligible for further checks on boilers said they were paying for these services themselves, or using insurance schemes to pay for them. One such customer talked about the importance of having peace of mind, and made a point of paying around £70 per year to get the boiler serviced. Others were doing without regular service checks, sometimes because they could not afford to pay for insurance or servicing. One such respondent mentioned being worried in case something went drastically wrong in the future, and said she wouldn't know what she would do.

A few mentioned filling in a customer satisfaction questionnaire (sent out annually from 2009 onwards). Some said they would have liked to have had the opportunity to provide this kind of feedback or have more follow-up contact a few weeks after the installation, once any questions or issues had come to light.

7.2. Use of measures and wider energy behaviour

Some customers reported feeling in control of, and comfortable with, a new heating system installed under the scheme. A handful, however, had real difficulties operating their new system, which were clearly impacting on the benefits they were experiencing from measures installed.

Those who were comfortable with their new boilers reported turning them on and off as needed, or using the settings to create a heating program that suited them and their household. A handful, however, spoke of difficulties in operating the controls or programming the boiler. One or two said they left the boiler on all the time, allowing the thermostat to regulate the temperature. Others relied on relatives to adjust the controls.

The qualitative research showed most successful applicants had not undertaken any further work to improve the energy efficiency of their home after receiving Warm Front measures, though some had taken some further steps.

Some successful applicants stated that they did not think there was much else they could do to improve their home's energy efficiency, while a few would have liked to take further action but could not afford to. A handful had installed further major measures since benefiting from Warm Front, some through other government schemes, and some paid for by the householder themselves. These measures included replacing the front door, the glass in their windows, and installing draught-stripping.

In a small number of cases Warm Front installations seemed to have increased customers' interest in energy saving, with one respondent saying he had started paying more attention to the pre-payment meter after receiving his new boiler. However, this was not the case for most applicants.

7.3. Beneficial impacts of measures installed

Many of the Warm Front customers reported the positive difference Warm Front had made to their home. This was particularly the case for those who had been living without heating or hot water for some time, or during the winter months.

Many respondents described a noticeable improvement in the warmth of the home, particularly as a result of having insulation installed. On the whole, customers reported feeling more comfortable. A few mentioned being able to turn their heating off or down more often, but still feeling comfort. Some reported being less worried, and having the confidence that they were 'not going to freeze'. One described this as "a huge weight off my mind". A handful also said their household was now healthier or happier.

> ***"The difference it's made now, when my family come, you wouldn't really sit there [in the living room] before, but they do now. They come and stay longer now they don't have to wear their coats."***
>
> **Successful applicant, North, aged 50, Heating**

While those who had previously been suffering with damp or condensation generally reported noticing the improvement after measures were installed, one or two respondents reported that measures had caused or exacerbated damp or condensation problems. In one or two cases, customers stated that cavity wall insulation had caused damp problems, which one described as "heart-breaking." Some of these customers said that they wished the insulation had never been done. Another customer reported that, as vents were blocked by the insulation, they were now leaving a door open to enable air-flow.

A few, particularly those who had existing storage heaters replaced under the scheme, were still struggling to stay warm at certain times of day or night, and reported resorting to plug-in heaters

or blankets. A member of CES staff also commented that where old pipework had not been replaced as part of measures installed under the scheme, energy saving and warmth benefits were limited.

7.4. Impact on energy bills

Few customers reported noticing a difference in their heating bills, with several noting that the rising price of energy would have masked any savings they might otherwise have noticed.

One customer stated that although their new boiler worked, they could not afford to put it on very much. A stakeholder pointed out that while the scheme was sold to customers as a way to save money on energy bills, the majority chose to be warmer in their homes when new measures allowed them to achieve this, and therefore noticed little change in their bills.

A few have felt financial benefits, however, particularly when switching from oil or storage heaters, or when a very old and inefficient system was updated under the scheme. One householder had been reliant on oil prior to Warm Front, which he described as 'unaffordable' at £40 per week. He had seen his bills cut by more than half following the installation of gas central heating.

> ***"It's made a massive difference in heating costs…it's only been costing us £15 a month for our gas and our house is lovely and warm…I hoped [the scheme would have these results], I just didn't think it would have quite such a profound effect, if you know what I mean"***

Successful applicant, East, aged 33, Heating

7.5. Complaints and problems with installations

7.5.1. Complaints

The number of complaints in relation to the number of measures installed under the scheme increased over the course of the scheme, and was particularly high in the final two years of the scheme. This is thought in part to be a result of the increase in complex and major measures, but also to be due to complaints from unsuccessful applicants, following tightening of the eligibility criteria (see Figure 26 and Figure 27)

Figure 22 shows the number of complaints made and upheld, as a proportion of households assisted, and by the number of measure installed. Two factors are likely to have resulted in the increase in complaints seen towards the end of the scheme:

1. The increased focus on complex measures such as gas boiler replacements and heating repairs in the latter years of the scheme, and the removal of measures such as compact florescent lightbulbs (CFLs), from the suite of measures provided under Warm Front. Complaints tend to focus on issues with gas boiler replacements and heating repairs (see Figure 28).
2. The tightening of the eligibility criteria and the increase in the proportion of applications that were turned down, as a number of complaints related to unsuccessful applications.

Figure 26 - Complaints made by successful and unsuccessful applicants to the scheme

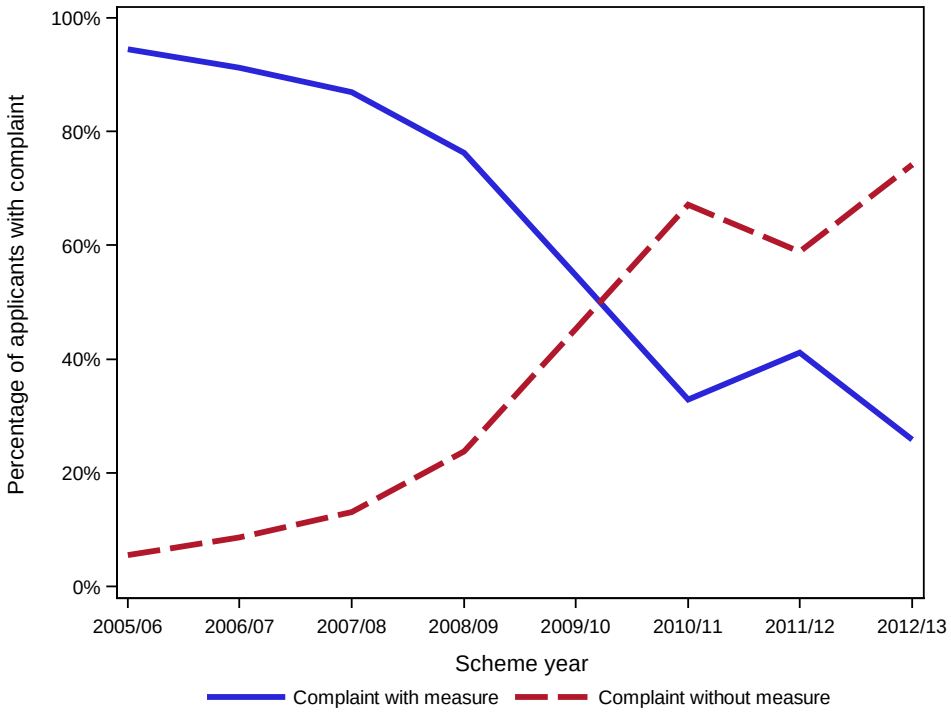


Figure 27 - Number of complaints made as a proportion of households assisted

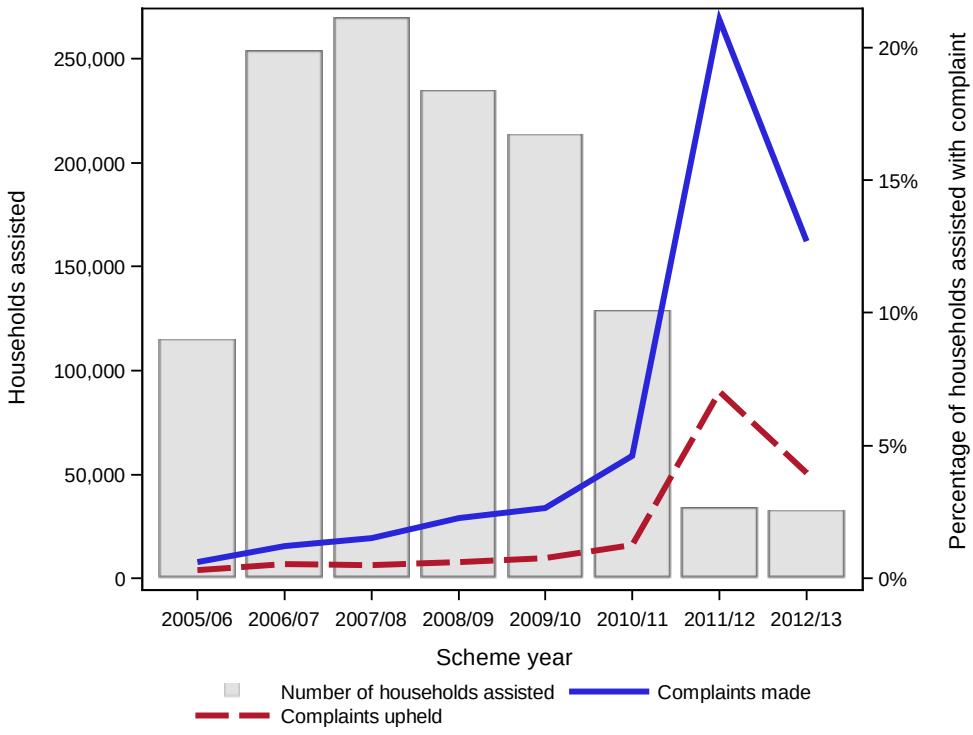
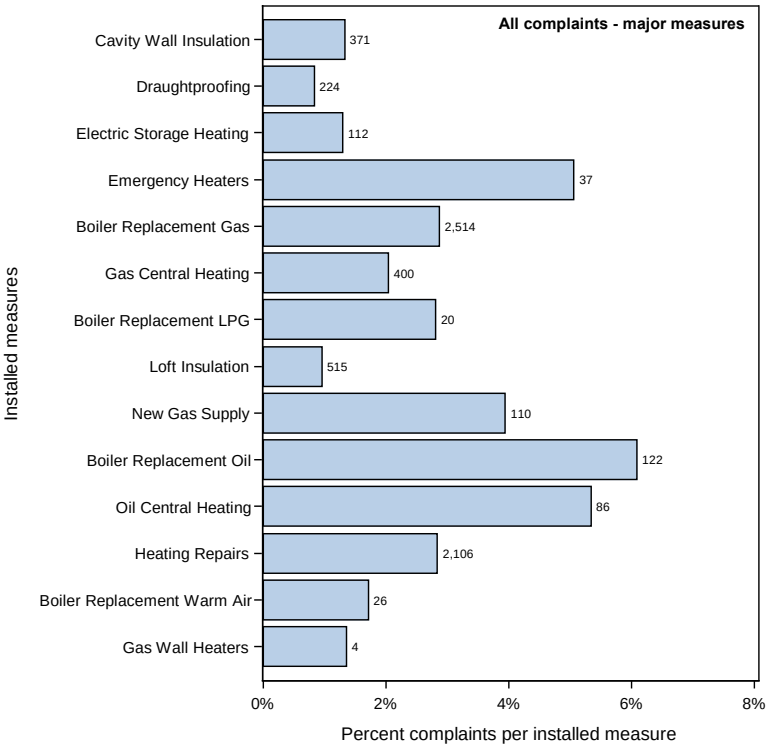
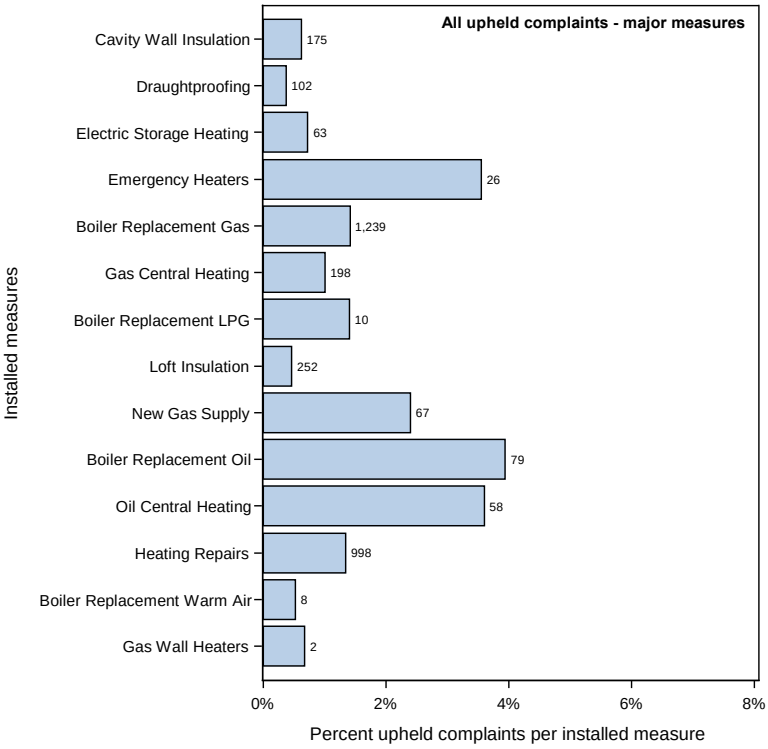


Figure 28 - Number of complaints made by major measure



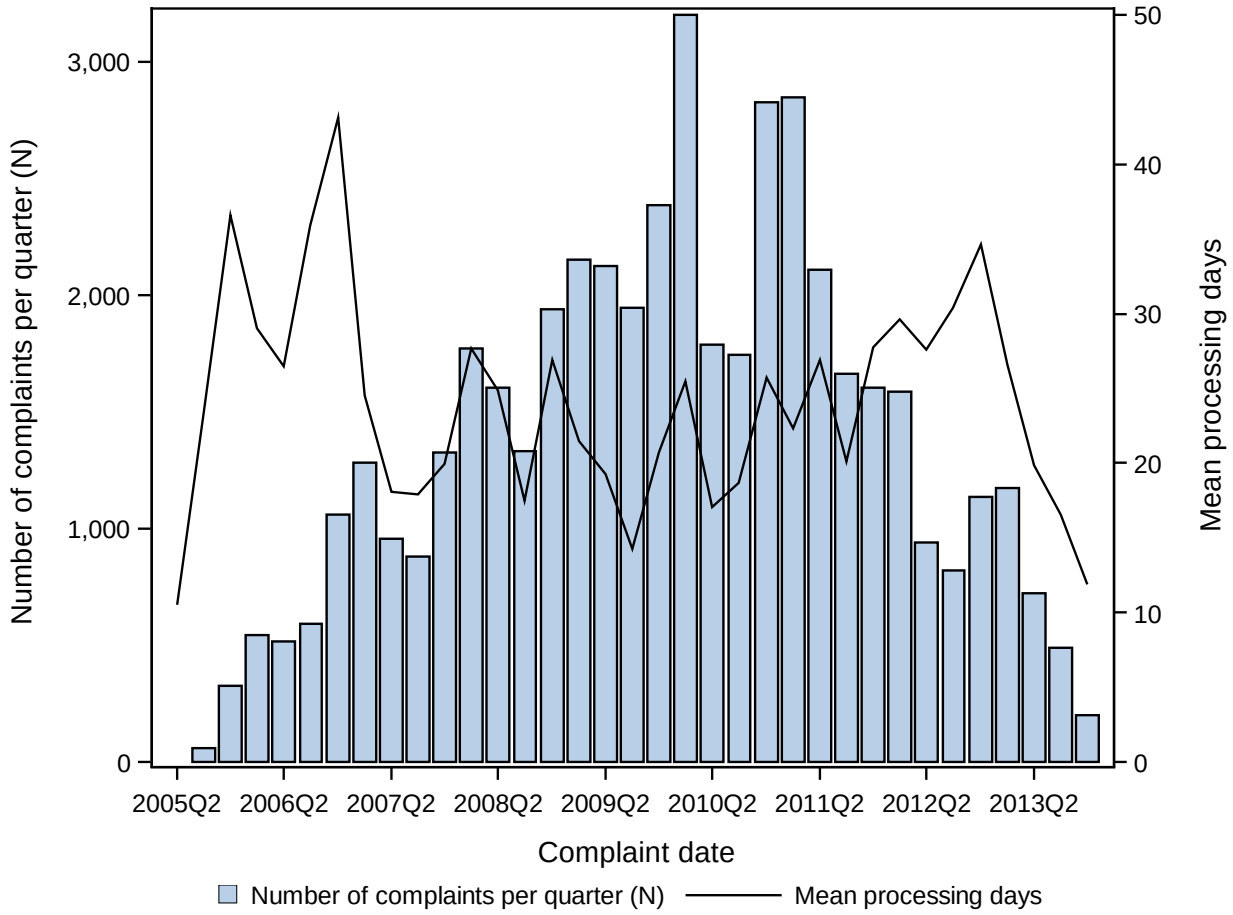
Bar values denote number of complaints



Bar values denote number of upheld complaints

Figure 29 below shows the number of complaints made per quarter and the average processing days for complaints. The initial processing days are high in comparison with the number of complaints in the early part of the evaluation period, but this levels off as (presumably) more resources are brought on board to handle volume of complaints.

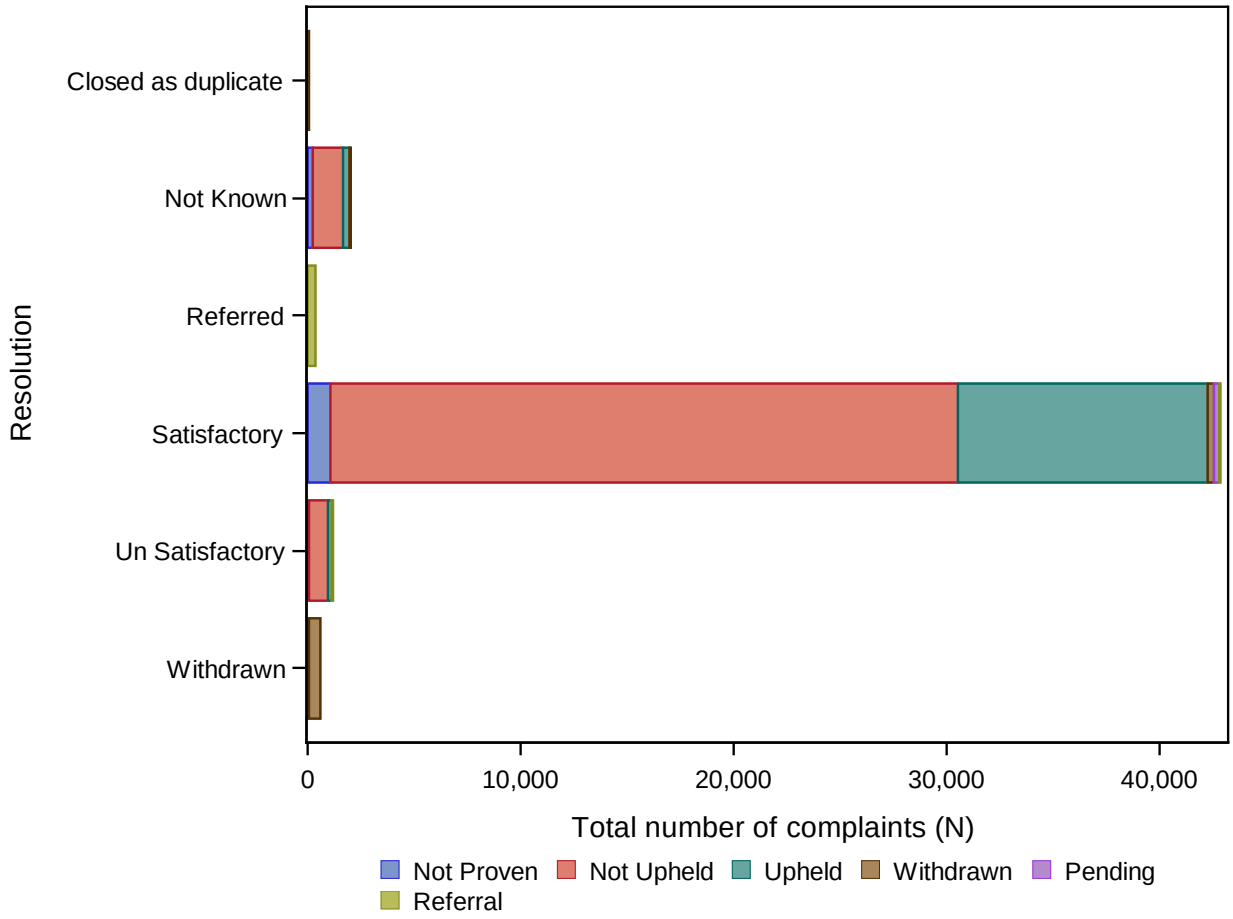
Figure 29 - Number of complaints made and average processing days



Complaints were classified by CES as ‘referred,’ ‘satisfactory,’ ‘unsatisfactory,’ or ‘withdrawn’. It was not possible to ascertain from CES staff at the point of data delivery what fell within these categories, however, the following chart shows a breakdown of how complaints were resolved across these categories.

The data from the scheme manager shows a large majority of complaints were classified as ‘satisfactorily resolved’ by the scheme manager. The qualitative research, however, found that in a number of cases, applicants did not feel that their complaints had been satisfactorily resolved. Some reported being told that faults could not be dealt with because the installation had already been signed off; that they could not be undone; or that the installation was outside the warranty period. Others were given inconsistent advice about whether or not they were eligible for help.

Figure 30 - Complaint resolution by final complaint status



A few respondents reported finding customer service staff rude, unsympathetic, unpleasant or unhelpful. Some said they were made to feel that customers getting support for free should not complain. In one or two cases, customers reported that their own version of events had been disputed by staff, which customers, particularly those who were vulnerable, often found upsetting. In some cases, customers reported that staff eventually apologised but did not offer help or compensation.

> ***"I rang up Warm Front and said about how I was struggling with heating. And the lady on the phone, well I thought she was rather rude…It was just like, 'well you're getting it free so stop your moaning'."***

Successful applicant, North, aged 67, Heating

7.5.2. Not complaining

It is worth noting that the number of complaints may not be an accurate reflection of the number of problems with Warm Front installations, as several Warm Front customers stated that they did not make a complaint when things went wrong. This was sometimes because they did not know who to direct complaints to, or did not think complaining would help. In other cases, customers stated that it simply did not occur to them to make a complaint, for example because they tended not to do that in general, or because they saw themselves as lucky to have

received any support at all and did not feel entitled to complain. One said they did not want to jeopardise any future application she might make by complaining.

7.5.3. Getting problems resolved

A substantial minority of the customers who participated in the qualitative research had experienced some kind of problem with measures, with the installer, or the installation. While not all of these customers went on to complain about the issues they had experienced, some of them did. The experience of both sets of customer, alongside reports from stakeholders, suggest that while some of the problems reported to the scheme manager were resolved to the customer's satisfaction, this was not always the case. Other customers simply lived with problems, or paid for them to be rectified outside of the scheme.

Some of those who reported problems with their installations stated that getting these fixed was straightforward. Others raised the issue, but then had to wait for several weeks for a resolution. Stakeholders and customers reported that when repairs and replacement equipment were provided by Warm Front, this was often paid for out of the household grant, or required local authority to draw on additional funds.

One or two householders said they ended up having to pay for the repairs themselves. This could be because they never complained to Warm Front, or if they did complain, either because no further money was left in their grant, or because they lost confidence in Warm Front when they were unable to get a problem resolved to their satisfaction. Some of these customers reported paying hundreds of pounds for repairs of faulty systems or, in a very small number of cases, for repair of damage to their homes caused by installers.

Several customers said they had not yet managed to resolve issues they had. Occasionally this seems to have been because they did not know who to contact. However, most said they had tried to get the problem fixed but had not been able to, despite many mentioning their equipment being under warranty. They reported finding it difficult to get through to the scheme manager to talk about problems, being passed between different departments and organisations, and being kept on hold for long periods, sometimes of an hour or more, which cost them money.

Local authority stakeholders confirmed that this was a problem. Issues sometimes related to installers going out of business, or individual members of staff moving on. As a result of unresolved problems, householders reported being left to manage with intermittent or inadequate heating over winter, holes in walls, leaking pipes, rotting carpets and expensive bills. Several mentioned that the scheme manager was unresponsive at these times, and said that better communication would have helped their situation.

> ***"It's whether they listen to you or not. One person was dealing with it, then I had to ring back and she started ignoring my calls, then she said she'd ring me back and didn't. It was really poorly handled."***

Successful applicant, North, aged 42, Heating

Some customers said they had to save up themselves (sometimes for several years) to have faults rectified, and some remained worried about getting problems sorted out. Some supply chain stakeholders agreed that the level of support for Warm Front customers after installation was poor, with customers unable to get a satisfactory outcome for their complaints. Some said this was because the guarantee on equipment was not the responsibility of the installer but of the aftercare organisation.

7.6. Unsuccessful applicants

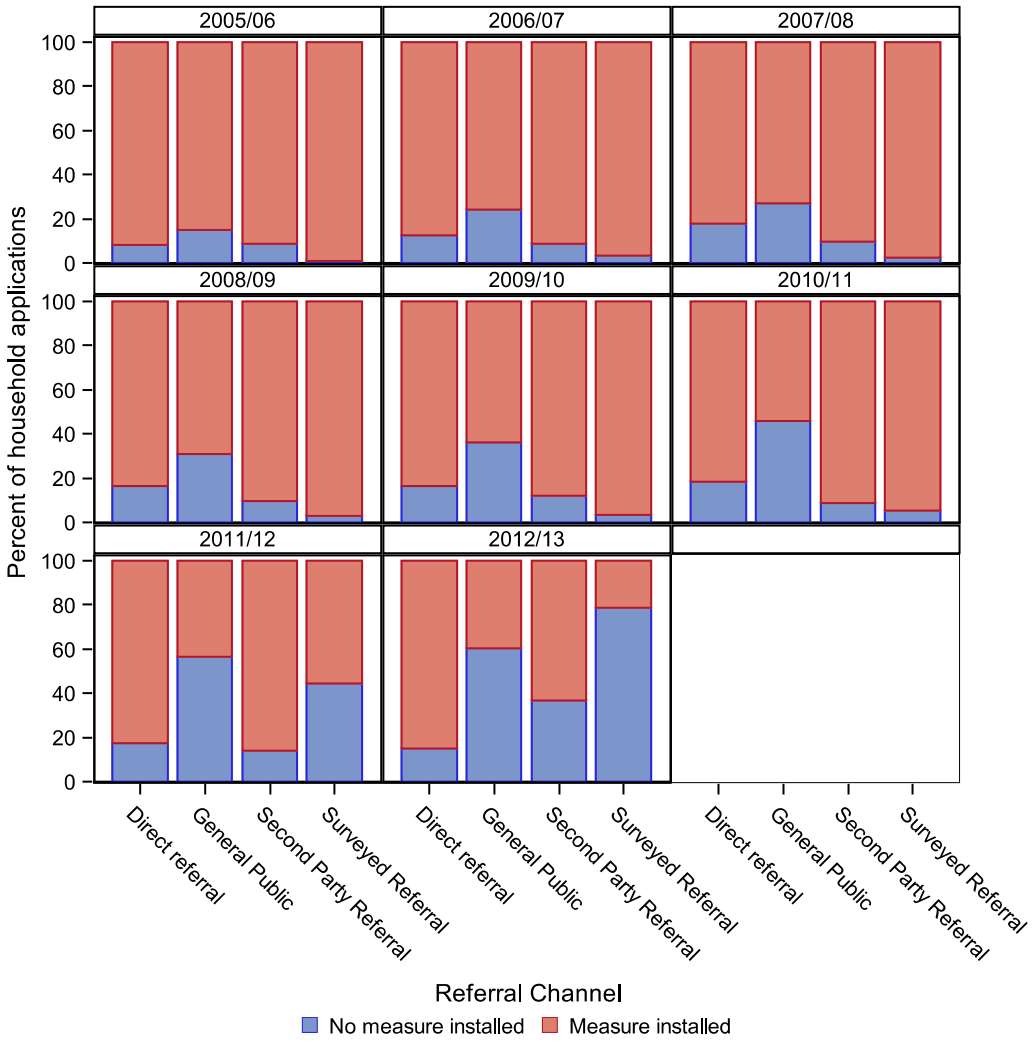
There were three formal points at which applicants to Warm Front could drop out of the application process or at which their application could be deemed unsuccessful:

1. At the eligibility check – if they were not claiming any qualifying benefit.
2. At the survey – if their home or existing infrastructure did not qualify for measures under the scheme, for example if a boiler was efficiently working, or if the SAP rating of the home did not meet the required threshold.
3. At the point at which measures were specified and costed – if the grant was insufficient to cover the necessary measures, and if the applicant was unable to cover the shortfall, or find another source of funding to do so.

There were also examples of householders dropping out at other points in the application process, including, according to stakeholders, because of 'loss' of their application by the scheme manager. The proportion of applicants who went on to have measures installed varied by year, and by the channel through which they came to the scheme.

Figure 31 shows the proportions of successful and unsuccessful applications to Warm Front, broken down by referral type and year.

Figure 31 - Unsuccessful applicants by referral type and scheme year



Some applicants were rejected when they initially applied to the scheme because they did not meet the eligibility criteria. In some cases applicants reported being told that the criteria had changed, meaning they were now ineligible, but previously would have been eligible. In these cases, changes had generally occurred either between them receiving information that suggested to them they were eligible (for example, a letter or leaflet) and their applying to the scheme; or between scheme years, had they initially applied when the scheme had already closed for that year, and been told to reapply.

A member of CES staff noted that many people called up who were ineligible but obviously had some kind of need. Some applicants were considered likely to be eligible for the scheme at the point of application, but were found to be ineligible after the assessment in their home. When applicants reported that they did not understand the reasons for being turned down, or when they did not accept that these reasons were fair, this appeared to have added to their disappointment.

Some householders stated that they were not informed that their application had been unsuccessful: these customers expected to receive particular measures, based on what they were told at the assessment visit, but did not subsequently have an installation. One or two reported that they could not get the expected support because the scheme had closed.

8. Impact and legacy of Warm Front

This section presents the numbers and profile of those receiving Warm Front measures. It discusses stakeholders' views on the overall impact of the scheme and whether it has achieved its objectives. It concludes by considering the impact of Warm Front on the supply chain and its legacy for the wider market.

Key findings

- Overall 1.5 million households were assisted by the Warm Front scheme from 2005 to 2013. On average two measures were installed per household, excluding compact fluorescent light bulbs (CFLs).
- There was a growing trend through the course of the project in the proportion of applicants with 'hard to treat' properties. In 2005 two thirds of successful applicants came from "hard-to-treat" properties, with this proportion increasing up to 80% in 2012/13. Heating measures were more commonly installed than insulation in this type of home.
- Stakeholders generally agreed the scheme was successful. For nearly all this view was held because of the large number of measures it managed to deliver. These were improvements that many stakeholders felt would not have been made in the absence of the scheme.
- It was widely acknowledged that Warm Front created a huge amount of work in the industry, promoting turnover growth and job creation in many installer firms. Such was the volume of work, however, that some smaller installers reported becoming dependent on the scheme. They reported the challenges this created for their organisations as the scheme first of all reduced in size following budget cuts, and ultimately came to a close.

8.1. Scale and profile of Warm Front installations

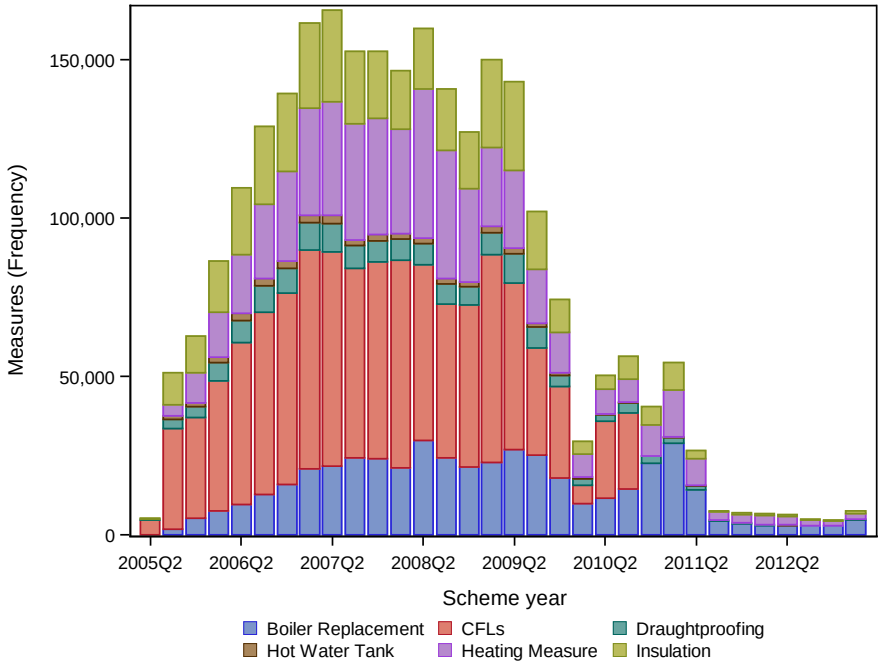
Overall 1.5 million households were assisted by the Warm Front scheme from 2005 to 2013. Of these, approximately 922,000 properties received at least one major measure.[30] On average two measures were installed per household, excluding compact fluorescent light bulbs (CFLs).

8.1.1. Number of applications and measures provided

Using household level data, Figure 32 shows the frequency of applications by the measure installed, and the relative proportions of each measure by quarter. It shows that CFLs made a large component of the total number of measures provided, until these were eliminated in 2011. Boiler replacements and heating system installations made up the bulk of non-CFL measures.

[30] Major measures are all energy efficiency measures excluding compact florescent light bulbs.

Figure 32 - Measures installed under Warm Front



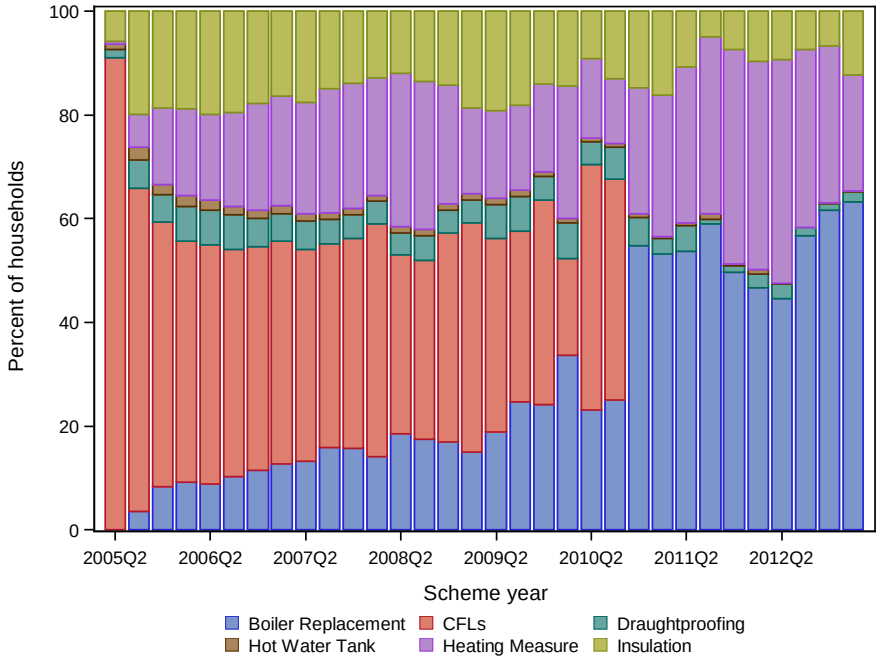
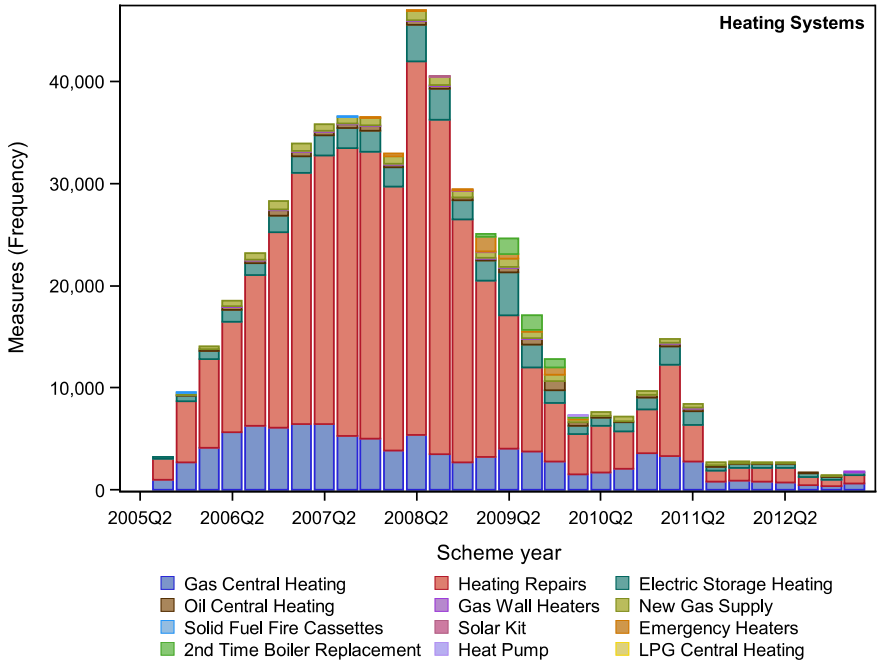
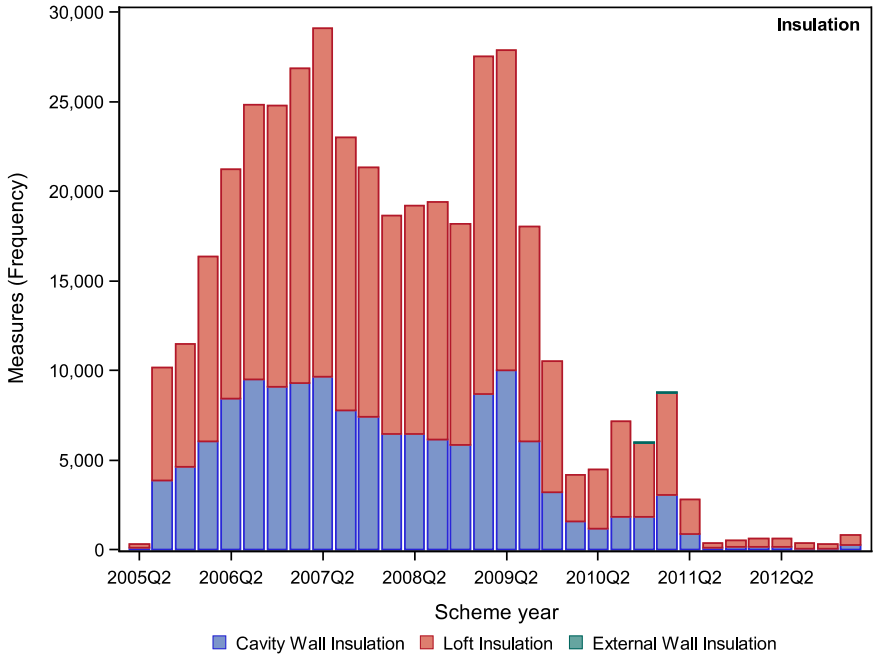


Figure 33 below shows the frequency of heating system installations, and of insulation installations over the evaluation period. It shows that the majority of heating system measures were heating system repairs. It is worth noting that 'second time' boiler replacements made up a small number of the total installations. The majority of insulation measures were loft insulation. The small number of installations of external wall insulation were made during trials held at particular points in the scheme.

Figure 33 - Detailed breakdown of heating and insulation measures installed





8.1.2. Profile of households assisted under the scheme

Analysis of the scheme data showed a small amount of variation in the success of different types of household accessing Warm Front measures, and in the types of measure installed. This was found to vary depending on tenure, the qualifying benefit, the referral channel and also by the applicant's age and ethnicity.

Using household level data, Figure 34 shows the percentage of different types of measure installed by household tenure. It shows a higher proportion of insulation and draught proofing measures installed in privately rented properties, but fewer boiler replacements. One reason may be the requirement placed on landlords to carry out annual inspections. This may mean boilers in these properties have been more recently replaced or repaired.

Figure 34 - Type of measure installed by household tenure

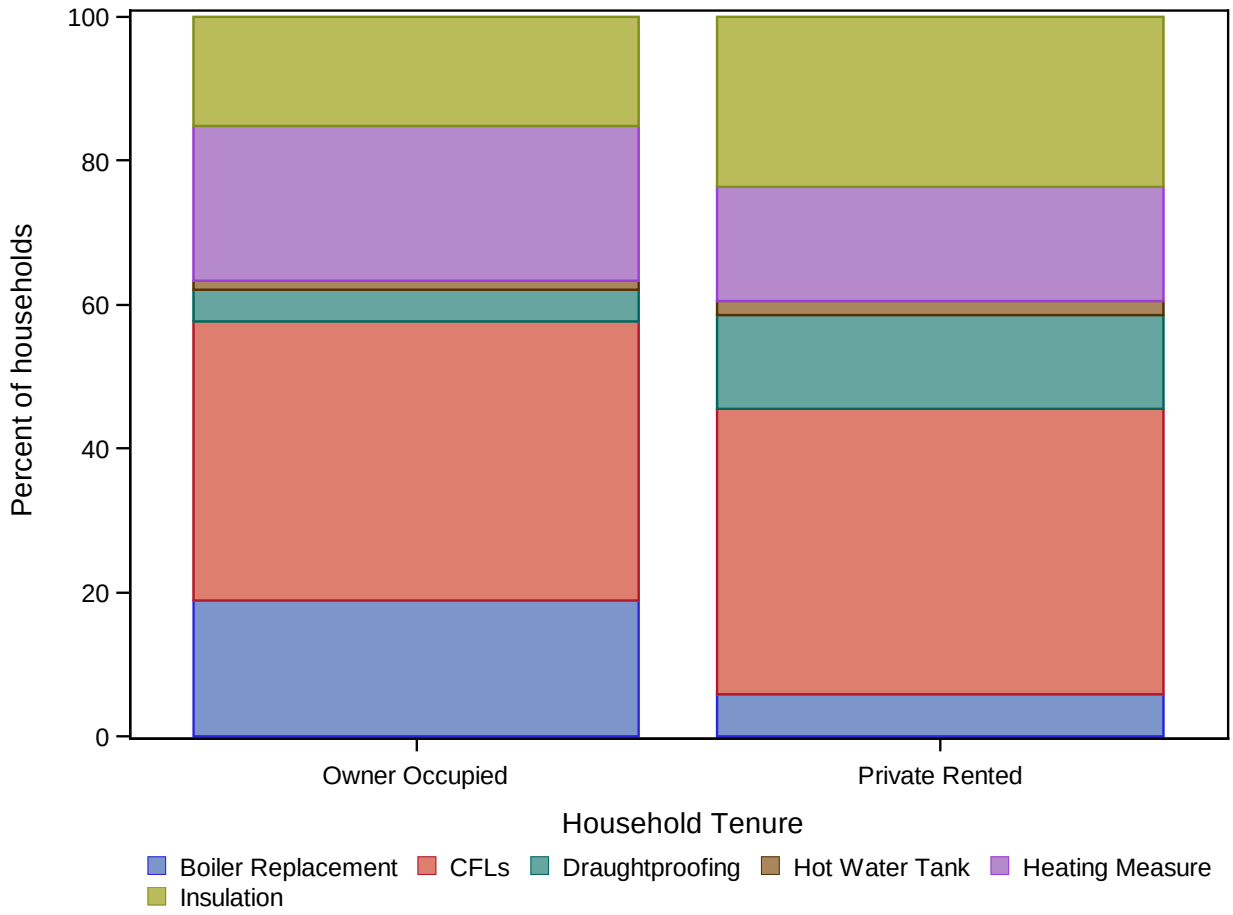
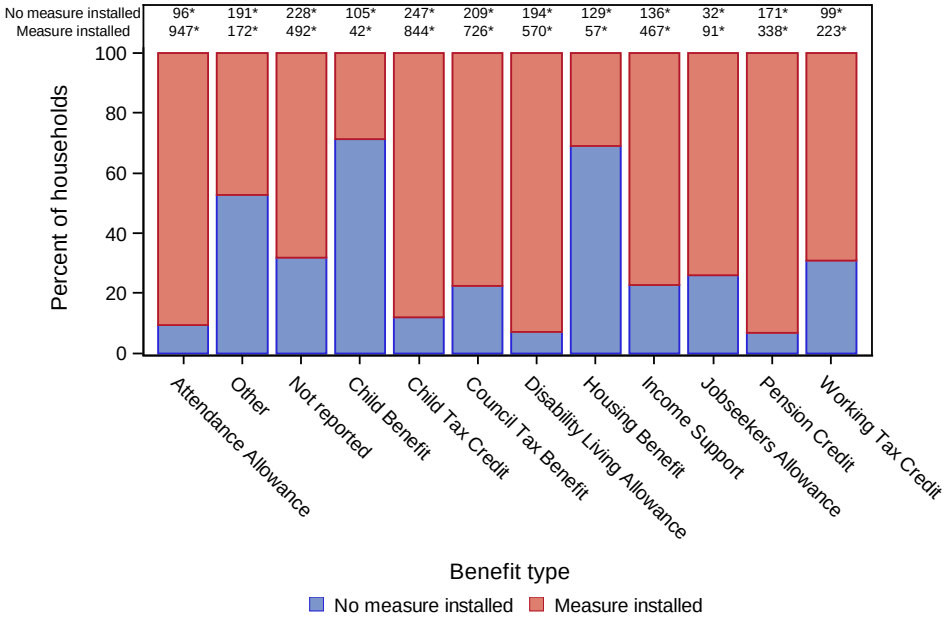


Figure 35 shows the percentage of applicant households that did and did not have a Warm Front measure installed by benefit type. It shows that the majority of Disability Living Allowance[31], Child Tax Credit and Pension Credit recipients received a measure (less than 8% did not). Applicants in receipt of other benefit types had a more variable level of success (although the sample sizes for these are also much smaller).[32]

[31] Note that many in receipt of Disability Living Allowance were also likely to be in receipt of other benefits.

[32] Note that there are small base sizes for some groups. Table 5 - Benefits claimed by Warm Front applicants details all base sizes for Figure 10 and Figure 11.

Figure 35 – Success of applicant by benefit type

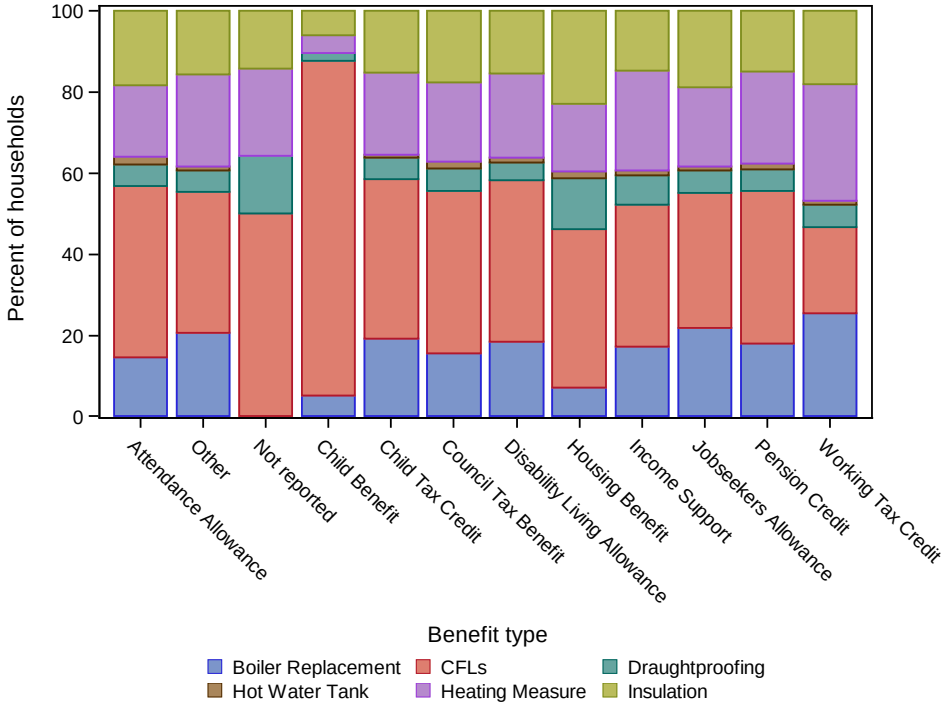


Other includes all benefit types with <1% of total scheme applications; comprises 3.3% of scheme total

Note that households can be in receipt of multiple benefits * Thousands

Figure 36 shows the types of measures installed for successful applicants qualifying through different benefit types. It shows a variety of measures were installed across these groups.

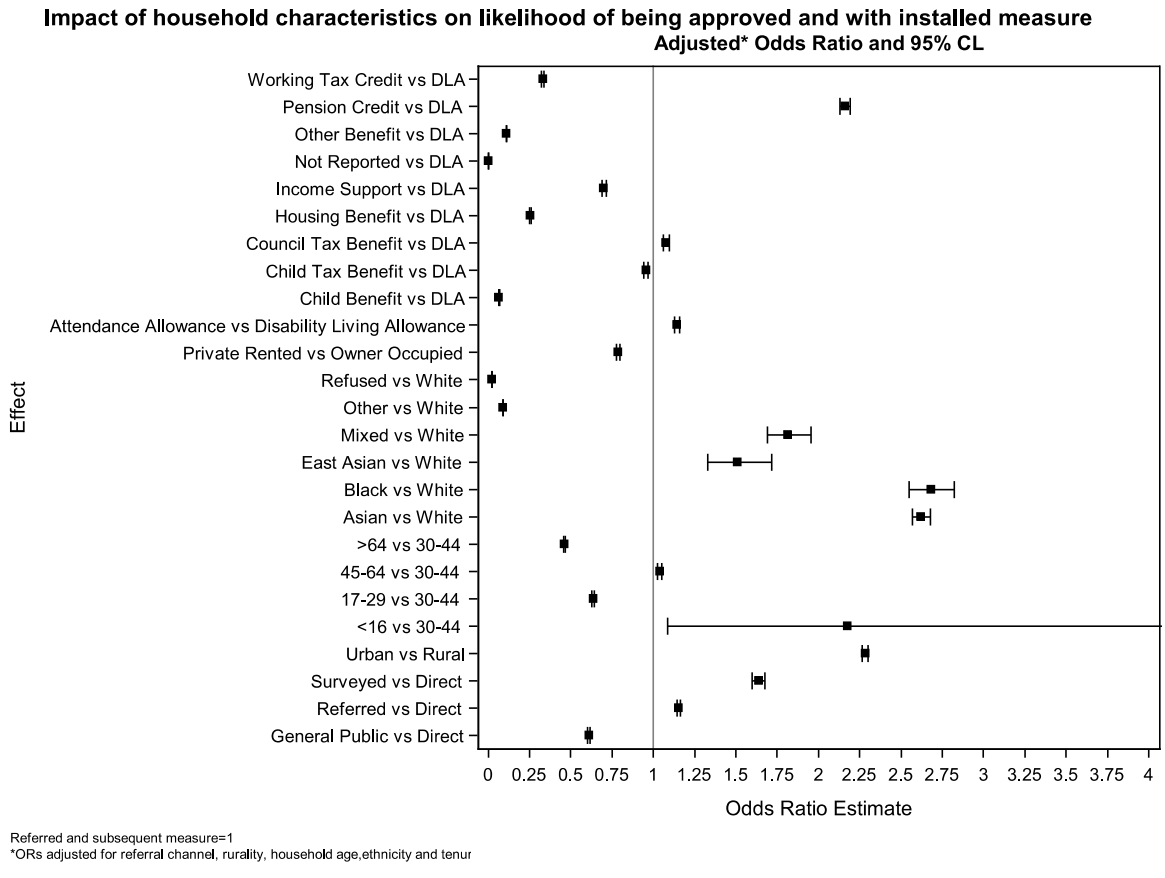
Figure 36 - Measure received by qualifying benefit type



The analysis of the scheme data also considered whether any particular household characteristics might affect a successful outcome through the scheme. Using household level data, Figure 37 shows the odds ratio of a household applying to Warm Front and subsequently having a measure installed compared to not having a measure and the effect of different household characteristics. This analysis suggests that:

- Referrals coming through the "general public" route had lower odds of having a measure installed (vs. not) compared to applications from direct referrals. Direct referrals are defined as direct public responses to targeted mailings from the scheme manager, or referrals through energy companies. General public responses are through the website or call centre without a direct link to a specific mailing.
- Dwellings occupied by older householders (aged 65+) were more likely to have a measure installed (vs. not) compared to households occupied by those aged 30-44.
- Households occupied by inhabitants of another ethnic origin than White British had a higher odds ratio of having a measures installed compared to White British households, (although the latter made up the vast majority, more than 75%, of all households assisted).
- The success of households in receipt of benefits other than Disability Living Allowance (DLA) also varied, though this reflects that for the most part measures went to households in receipt of DLA. The exception was those in receipt of pension credits who were 2.25 times more likely to apply and subsequently receive a measure compared to DLA households. One explanation for this may be because pension credits are not subject to any variation of receipt status.

Figure 37 - impact of household characteristics on likelihood of success in applying to Warm Front



8.2. Overall stakeholder perception of impact of Warm Front

Most stakeholders were positive about the impact of the scheme on householders, and tended to believe it had gone at least a fair way towards achieving its objectives. Stakeholders most commonly pointed to the large number of people that received measures through the scheme as their reason for perceiving Warm Front to have been a success. Many were of the opinion that the beneficiaries were households that would otherwise not have been able to afford these improvements.

> ***"Well, [Warm Front installed] a large number of heating systems and insulation in low income consumers' homes. In fact I think I remember somebody from DECC saying recently that the number of low income households in F and G rated homes, which … are the worst housing [have] halved since 2003 and Warm Front made a big contribution towards that. "***

Advisory stakeholder

> ***"The main achievement it set out its target and its target was to help the vulnerable and the fuel poor in having heating and hot water in the most affordable way possible and I think it's achieved that very well."***

Supply chain stakeholder – medium to large installer

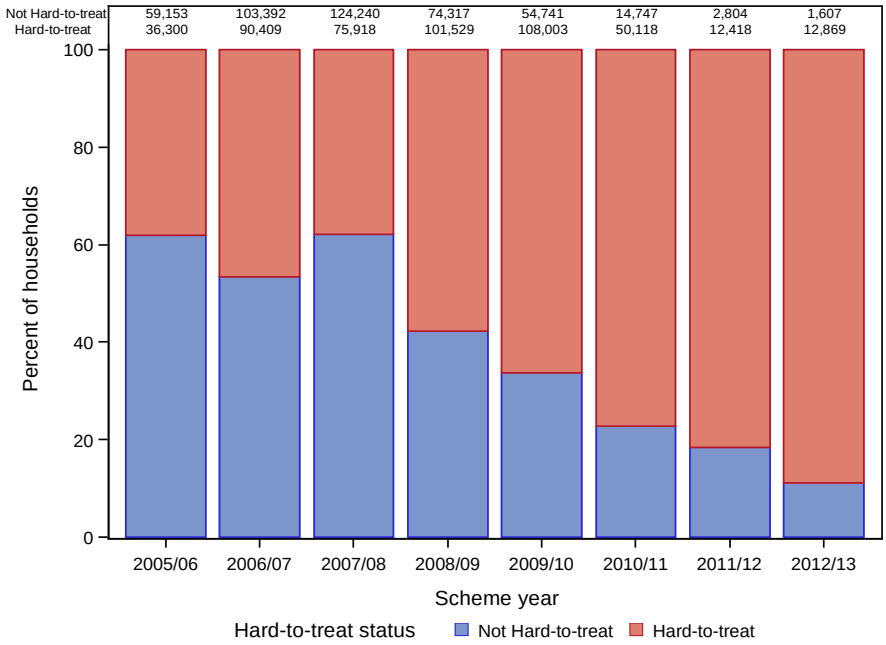
A range of other stakeholders felt the main constraint limiting the impact of Warm Front was the level of funding and the decisions this required around what could and could not be funded. For example, a few advisory stakeholders felt the impact of the scheme could have been improved further had the grants been able to cover upgraded radiators and pipework. The grant maximums were perceived to make it most challenging to ensure a positive impact in hard-to-treat homes. This is discussed further in the section below.

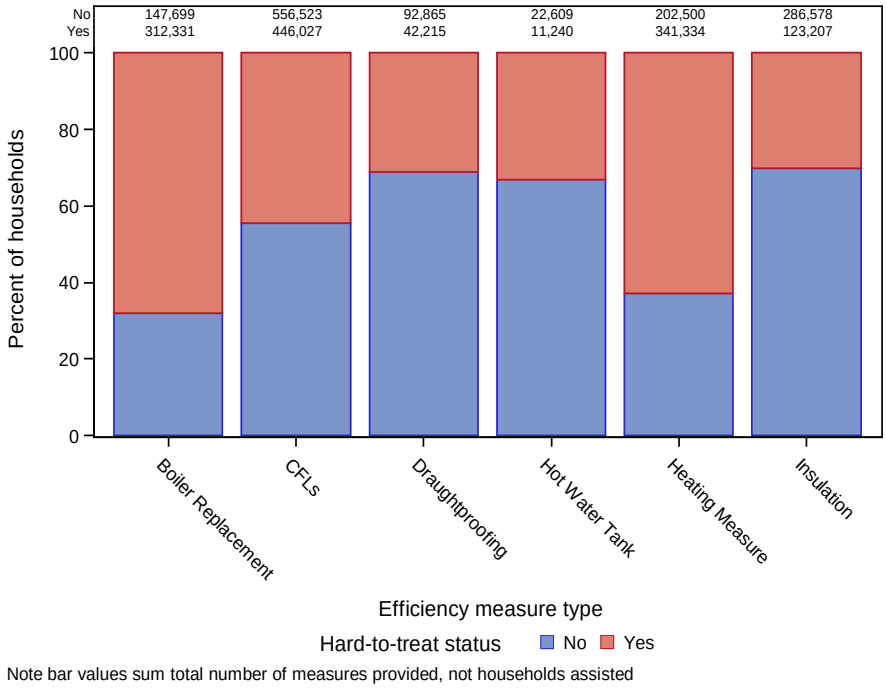
8.3. Impact of Warm Front on hard-to-treat homes

Homes with solid walls; those built pre-1929; those without a loft cavity; and those not on the gas network were classed as hard-to-treat under Warm Front. In 2005 two thirds of successful applicants to Warm Front related to hard-to-treat homes. This proportion steadily increased up to 80% in 2013 (see Figure 38). It should be noted, however, that in the latter years (2011/12 to 2012/13) the overall number of dwellings receiving measures under the scheme was lower than in previous scheme years.

A range of measures were installed in hard-to-treat homes, though heating measures were more common than insulation in this type of home.

Figure 38 – Hard-to-treat homes, across scheme years and by measures installed





Note bar values sum total number of measures provided, not households assisted

There was a higher grant maximum (up to £6,000) for hard-to-treat homes. However, for some homes, particularly those off the gas grid, some stakeholders considered this too low. For example, a few advisory stakeholders lamented the fact that solid wall insulation could not be delivered through the scheme. They felt this was a measure with the potential to significantly benefit many homes in fuel poverty.

> ***"What tended to happen was that there were grant maxima on the scheme which meant you could only spend so much on a heating***

system. And a lot of those off gas network properties were very expensive."

Supply chain stakeholder

Some stakeholders raised the issue that installation of gas-based and oil-based heating systems are very different, and that the skill set available to Warm Front fell short for oil installations. However it should be noted that oil installations were a small percentage of the total.

Some off-gas grid homes had electric storage heaters installed through Warm Front rather than a heating system. Again, a few stakeholders and householders felt these properties had not benefited as much as possible from the scheme.

"The heaters don't make the room warm in the evening, so I still use the blanket. I've bought another fan heater which I plug in and have on. I have put some draft excluders around the doors, but the heating dies down in the evening – it still gets a bit chilly."

Successful applicant, West, aged 52, Heating

Nevertheless other stakeholders stressed that Warm Front did more than had been done before to help these types of households.

Analysis of the scheme data shows that hard-to-treat homes were three times more likely to pay a contribution than those in homes not classed as hard-to-treat. However, the proportion of those who paid a contribution was very low overall (0.2% of applications).

A few stakeholders believed that the unequal distribution of hard-to-treat homes across the country contributed to the unequal spread of benefit or 'postcode lottery' which they saw in the scheme.

"There were parts of the country that did better than others, that in part was because inevitably they were trying to minimise the cost to the public purse and not taking on houses which were more expensive to deal with. The cap on expenditure per home was in many cases far too low, particularly for those off the gas grid."

Advisory stakeholder

8.4. Impact of Warm Front on supply chain

Stakeholders reported that the scale of Warm Front meant it had a major impact on supply chain organisations, both positive and negative. At the scheme's peak, scheme management and supply chain stakeholders explained there were thousands of jobs allocated a week. This volume of work was perceived to have created jobs in installer markets as firms of all sizes expanded. Some advisory and supply chain stakeholders perceived the greatest impact to have been on the smallest firms. The perception was that these had grown from sole-traders in some cases to employing ten or more full time engineers. However, even the largest firms said their businesses were able to increase their workforce.

> ***"Our company had 18 people when we joined it and we've 160 at its height. So we employed a lot of people, created a lot of jobs, it was really good."***

Supply chain stakeholder

Supply chain stakeholders explained that the demand for materials created by the scheme also meant that jobs were created in manufacturing organisations. The scheme manager also had a large team dedicated to Warm Front, including 400 in the contact centre alone. Many therefore felt Warm Front had sustained a large number of jobs at various stages of the supply chain. Many installer firms also attributed large increases in turnover to Warm Front.

> ***"[My turnover was] probably about £100,000 if I was lucky on my own. In the good years [of the scheme] we were probably doing £1.5 - £ 1.6 million."***

Supply chain stakeholder – small installer

However, according to smaller installers this growth could a double-edged sword. Some reported that their organisations became largely dependent on work through Warm Front, often stating it accounted for 75% or more of their turnover. By contrast, the larger installers were keen to stress that they would always aim for a variety of income sources, and as such Warm Front usually represented 10-30 % of their turnover.

Smaller installers reported that while this meant they did very well under the scheme initially, they were very exposed in the later years when the volume of work reduced and when the scheme came to an end.

Looking beyond the experiences of the individual supply chain stakeholders, this evaluation has also considered what the market looks like now that the scheme has ended. Supply chain stakeholders still operating following the closure of Warm Front, reported that they have been able to transfer skills and jobs over to ECO Affordable Warmth.

However, some installers were reported to have ceased trading following the end of the scheme. A range of stakeholders reported their perception that smaller companies had been taken over by larger firms. The market was described by a few stakeholders as "more concentrated", with fewer companies involved now than previously, and of a larger average size.

> ***"As Warm Front has closed off we've seen a lot of those businesses go bankrupt. Businesses that have built to the sizes that a lot of these had couldn't afford to let their engineers and their office staff sit around twiddling their thumbs while government decided what they were going to do next. A lot of the smaller ones that were around before got absorbed by the larger ones. It's put a lot of uncertainty into the market."***

Scheme management stakeholder

Stakeholders felt that, broadly speaking, the heating supply chain had been impacted to a greater extent by Warm Front than the insulation market. This is because other schemes, such as CERT, have also allocated significant resources to insulating properties, whilst Warm Front was seen as unique in installing so many heating systems.

9. Appendices

9.1. Discussion guides

9.1.1. Stakeholder Discussion guide

Research question	Topic guide question
	Name of interviewee
	Job title
	Name of organisation
	Date of interview
	Interviewer
	[As you may know] Ipsos MORI and UCL have been contracted by DECC to carry out a process evaluation of the Warm Front scheme from 2005 to the scheme's close at the end of September this year. The evaluation will also take into account the aftercare and complaints management processes that will continue until June 2014.
	In order to understand how the process worked, and to learn lessons for the future, we will be talking to various different people who have been involved in the scheme in different ways, including householders, members of the Carillion team, and the policy team at DECC. We'll also be looking at data collected in the course of the delivery, forms and materials used, and what has already been written by others about the scheme. No single viewpoint will be complete, but your views will help us build our understanding by helping us to understand the process from your perspective.
	Your comments will feed into the overall process evaluation. It is possible that, where we think it will be helpful, we may attribute to you, in reporting, things that you tell us in the course of this interview. If there is anything which you would like to be off the record, please tell us, and we will exclude it or report it in a way which ensures your anonymity, as you prefer. Ipsos MORI is a corporate partner of the Market Research Society (MRS) and adheres to its code of conduct.
	To get the most from this process it's important that we hear the good, the bad, and the neutral. Your experience of the things that worked well, and your experiences of things that went wrong or could have been better, are equally useful.
	We may ask you about, for example, number of households that received particularly measures, in the course of this interview. Please don't feel that you need to have the exact numbers to hand, but your ballpark figures or rough proportions (e.g. about a half, perhaps one in ten) will be a useful sense-check for our more detailed look at the programme data.
	If there are questions which we ask which you feel someone else would be better placed to answer or might have different perspective on, please let us know.
	INTERVIEWER NOTE: Probe for examples of best practice and lessons learned throughout.
	Role and responsibilities
QB1 Role in Warm Front	Can I ask you to start us off by very briefly describing your role in the Warm Front programme?

QB2 Depth and length of involvement	*Probe on depth and length of involvement*
QB3 Changes to role over course of involvement	Have there been any changes to your role and responsibilities over the course of your involvement? If so, what were the reasons for this (e.g. result of programme change)?
New01 Involvement in delivering similar schemes	What, if any, schemes of a similar nature have you been involved in delivering, either with Carillion or in other roles?
General impressions of warm front	
New02 Overall impressions of success	Before we get into the details of how the delivery process worked, could you give me a short summary of your overall impressions of how successful or not the scheme has been? - In terms of delivery and management. - In terms of outcomes and impacts. What worked well about the scheme? Why (what factors were behind this?)? What worked less well about the scheme? Why? What were the main challenges in delivering the scheme? (How were they overcome?)
Management of scheme	
1.02 Alignment of operational functions in CES	Thinking about the delivery process, can you talk me through the different individuals and teams involved in Warm Front and how they worked together to deliver the scheme? [Note - this informal 'mapping' will be a sense check for our understanding of the process, and can be repeated with different stakeholder to see if/how understanding varies] How effectively, in your view, did the different elements of the delivery programme work together? e.g. call centre to complaints, finances to other departments, keeping each other up to date and up to speed.
1.04 Administration of scheme by CES - processes and checks	Can you talk us through how administration of the scheme worked day to day? Prompt on processes and checks for - eligibility checks; - surveys; - installations; - inspections; - remedial work; and - customer contact.
1.03 CES management of external supply chain	How did management of the external supply chain work? Can you describe your management framework with installers? How did you manage lead times? How did you manage capacity to deal with demand? Looking back, is there anything that worked particularly well, or that you would have done differently?

1.05 Robustness of eligibility checks	IF NOT ALREADY COVERED AT 1.04: Please can you talk me through how you assessed the eligibility of applicants for the scheme? How effective, or not, do you feel this process was for correctly identifying eligible applicants? Why do say this? What gave you confidence in the process? Any examples of when checks worked less well? Were there any instances where you felt the checks you had in place weren't sufficient? Was any information collected that you did not go on to use? (E.g. national insurance numbers) Why do you think this was? We know that eligibility criteria changed over the course of the scheme. What, if any, impact did this have on the processes to confirm eligibility for applicants?
1.06 Monitoring and QA of installations	How did you go about monitoring delivery of installations? How well did these processes work? How did you go about quality assurance? What factors were important in getting things right first time?
1.08 Reasons for remedial work	Do you have a sense of what proportion of properties had to be returned to for new or remedial work? Can you describe the processes involved? What were the reasons for having to return to a property? Is there anything that could have been done differently to help avoid this?
1.01 Effectiveness of a single scheme manager	As you may know, pre-2005 there were two scheme managers covering different areas. What impact, if any, do you think having a single scheme manager had on the delivery of Warm Front? Were there specific qualities which you feel Carillion brought to this role? Looking back now, do you think there could have been any advantages to delivering the scheme in any other way?
1.07 Monitoring and QA of CES' delivery	What monitoring and quality assurance processes were you subject to as scheme manager? - What was your experience of these processes? - Did you make any changes as a result of monitoring and quality assurance that you were subject to?
1.11 Interactions of WF with other schemes	As you may know, a number of other policies with similar objectives and similar target populations existing at the time as Warm front. What, if any impact did the existence of these policies have on the delivery of Warm Front? In particular how did this interaction affect budget planning and did it delay delivery of measures?
1.1 Success of exit planning	Can you describe how the exit planning process worked? And from your perspective, how has this process been? Prompt on: - project plan; - risks captured and mitigated; - timings on scheme closure and completion of work. How effective do you think it has been in comparison to other schemes you have been involved in
Value for money	

2.01 Cost effectiveness - marketing and referrals	Do you have a sense of whether the scheme offered value for money in comparison with the general market? For consumers? For government? What are you basing this opinion on? What processes worked for and against the value for money of the scheme?
Customer journey	
4.02 Customer experiences of WF	Can you talk us through a typical customer journey through the Warm Front scheme? How much variation do you feel there was in customer journeys, and what caused this variation? Are there different 'typical' consumers who it might be good for us to talk to in the course of this evaluation? Were there any particular points in the customer journey where there were blockages, delays or people dropped out? Why do you think this was? What do you think were the key consumer issues which impacted on the delivery of Warm Front? (e.g. re: suitability of products, installation and customer services issues, etc.) How were they managed? [If they have experience of delivering other schemes] How were these issues similar / different to those you've experienced in the delivery of other schemes? What have been the main benefits for householders under the scheme?
4.01 What were customers' expectations	What do you think customers expected from the scheme? What has informed your view of their expectations? Probe to see if a hunch, or based on direct contact with customers etc. What do you think informed customers' expectations? To what extent do you think customer expectations were met?
4.03 Customers on satisfaction	How satisfied do you think customers were with their experience of Warm Front? - In terms of delivery and management. - In terms of outcomes and impacts.
1.09 Management of complaints	How did the complaints procedure work? How well aligned were different operational functions in the context of dealing with complaints? What were the main issues complained about? Were there different types of complaints relating to different measures? Do you have a sense of how many complaints there were and how many were upheld? How confident are you in the provision for complaints between the close of the scheme and June 2014? NOTE FOR CALL CENTRE STAFF INTERVIEWS, THE FOLLOWING QUESTIONS WOULD BE USED: What was your experience of dealing with customer complaints? What was your impression of the severity of customer complaints? How well do you think the programme as a whole worked to deal with and resolve complaints, thinking about your own role and those of other team members / members of other teams.
What prompted vulnerable households that are fuel poor?	

3.01 What prompted applications	What do you think prompted Warm Front customers to apply for the scheme? Were there different prompts for households of different levels of vulnerability / fuel poverty?
3.02 Effectiveness of referrals system	How did the referrals process work? How effective was the referrals system in creating demand for the scheme? Looking back, is there anything that you would have done differently? Which strategies worked well, and which worked less well, for vulnerable customers? Are there any alternative approaches to delivery to vulnerable customers that you think may have worked more effectively? Why were these not used?
3.03 Sources of referrals	Where have referrals come from? What were the most and least successful avenues for generating referrals? How different was the process of generating referrals through these different avenues? Reflecting back on the process, was referrals the most effective and cost effective method? Are there any particular organisations or individuals involved in referrals who you feel we should speak with?
3.04 Number of households assisted	*We know that a number of different measures were available under Warm Front. Were the processes householders had to go through different for different measures? How so?*
3.05 Profile of beneficiary households	What do you think the profile was of those households assisted under the scheme (e.g. were particular types of households particularly good at accessing support whilst others missed out)? Why do you think this was? Were there any particular barriers or enablers in terms of awareness of the scheme or the process of accessing support? (e.g. impact of internet access?)
3.06 Size of grants	*We know that the size of grants available varied. How, if at all, did variation in the size of grants available (at different points in time and for different measures / households) impact on scheme delivery?*
3.07 Qualifying benefits claimed	What was the qualifying benefit(s) customers were claiming for Warm Front?
3.08 Impact of benefit entitlement check	What was the impact of the benefit entitlement checks in the scheme? Did this affect the number of applicants to the scheme? What addition income did this provide for the household? Looking back, is there anything you would change about the benefit entitlement check process?
3.09 Barriers to reaching hard to treat homes	What were the barriers to reaching hard to treat homes (solid walls, pre-1929, off gas network, no loft cavity)? How, if at all, was the process different for hard to treat homes, and how did this impact on the scheme delivery? What was the impact of the scheme on hard to treat homes?

3.1 Barriers to reaching hard to reach homes	What were the barriers to reaching hard to reach homes (rural, private landlord, ethnic minority)? How, if at all, was the process different for hard to reach homes, and how did this impact on the scheme delivery? What was the impact of the scheme on hard to reach homes?
Additional benefits / disbenefits of scheme	
5.05 Did WF create dependencies	Briefly, how would you describe the impact on the market of the Warm Front scheme? What do you think would have happened to the market over the course of the scheme had the scheme not existed? How do you think the Warm Front delivery process impacted on the market? How did market conditions impact on the Warm Front delivery process? To what extent, if at all, did the Warm Front Scheme create dependencies on income from the scheme for the installers / surveyors/ suppliers? What evidence do you have for this? Do you know what impact the end of the scheme has had on installers / surveyors / suppliers? What do you think would have happened to the market in the absence of Warm Front?
5.01 Value of work by each installer	How were installer contracts distributed across the scheme? Did particular installers receive large amounts of work? Was there a large number of smaller installers doing small amounts of work?
5.07 Role of the installer bond in encouraging / deterring installers	What role do you think the installer bond had in encouraging or deterring installers to sign-up for Warm Front? How did the processes installers had to go through with respect to the installer bond impact on this, if at all?
5.03 Proportion of installers' work on WF	Did you get a sense of what percentage of installers' work has been on Warm Front customers? How do you think installers experienced the Warm Front scheme? (In comparison to other schemes, if relevant).How do you know this? How, if at all, do you think installer experiences of the warm front scheme varied (e.g. between small and large installers, over time, if relevant). Are you aware of any complaints about Warm Front delivery or processes from installers?
5.04 Impact on suppliers of materials	How do you think suppliers of materials (Plumb Centre) experienced the scheme? How do you know this? Are you aware of any comments on or complaints about the delivery process from suppliers of materials?
5.02 Jobs created or supported through WF	How many jobs were created or supported at Carillion through the Warm Front scheme? How, if at all, did this change over time? Did you get a sense of how many jobs were created or supported in the supply chain? What has been the impact of the end of the scheme on jobs at Carillion? What has been the impact of the end of the scheme on jobs in the supply chain?

5.06 Market since the end of the scheme	What has happened to the market since the end of the scheme?
Wrap up	
QB21 Main achievements of Warm Front	What do you think have been the main achievements of Warm Front?
QB22 Uniqueness of Warm Front's achievements	*Do you think these are unique to the Warm Front? How does it differ from other grant programmes in this respect?*
QB23 Has Warm Front met its main objectives	To what extent do you think Warm Front has met its main objectives?
QB24 Constraints and barriers to further success	What do you think have been the main constraints and barriers to further success of Warm Front?
QB25 Actions taken to overcome barriers in scheme lifetime	*What actions, if any, do you think were taken to help overcome these during the lifetime of Warm Front? How effective were these?*
QB26 How constraints and barriers could have been overcome	*How do you think these constraints and barriers could have been overcome?*
QB27 Longer term impact/ legacy	What do you think the longer term impact/ legacy of Warm Front has been /will be?
QB45 Key lessons to learn from the programme	From your experience of the Warm Front programme as a whole, what are the key lessons to learn from the programme? In particular, what have been the: Positives (e.g. what has worked well, what elements of Warm Front should be retained in future policies and programmes?); and Key issues (e.g. what have been the major challenges, flaws). For each issue, what needs to be changed in order for future policy to be more effective?
	Ask for any materials that might be of use in the evaluation, e.g. forms, surveys, telephone scripts, etc. Also for any suggestions as to who might be good to talk to about the sorts of questions we have been asking.
	We may have to get in touch with you again before the end of September, if new questions emerge which we feel you'd be best placed to answer.
	Thank and close

9.1.2. Householder discussion guide

Research question	Topic guide question
Introductions	
	Interviewer introduction Moderator introduce self, Ipsos MORI (including role – independent research agency), and client - Department of Energy and Climate Change.
	Explain main aim of the discussion – to understand how you heat your home and your experience of applying for help through the Government's Warm Front Scheme. This was a scheme that helped some households to repair, replace or install a boiler or insulation. [CHECK IF RESPONDENT RECALLS THE SCHEME and help explain further if necessary].
	I'd just like to ask you a few questions about how you found out about the scheme and the application process and [IF SUCCESSFUL APPLICANT] how you have been getting on with your new heating system or insulation since it was installed.
	There are no right or wrong answers, we're just interested in hearing about your experiences. Don't worry if you cannot remember everything that happened too clearly – you can just tell us what you remember.
	The discussion will last for approximately 45 minutes (25 minutes for unsuccessful applicants)
	Reassure respondents of confidentiality and anonymity – information will not be personally attributed.
	Gain permission to record for transcription purposes (start audio recording).
3.05 Profile of beneficiary households	Participant introduction – warm-up and context Before we start talking about the Warm Front scheme itself, please can you just tell me a little bit about yourself…. § First name § Who do you live with? § What type of house or flat do you live in? Do you own this or are you renting it? Who do you rent from?
Awareness of Warm Front	
3.03 Sources of referrals	Please can you tell me how you first heard about the Warm Front Scheme? Explore spontaneously first, and then probe on following if necessary: o Word of Mouth? o Advertising? If so where? (TV, radio, internet, billboard, newspaper) o Your gas or electricity supplier? Which company is this? o Age UK? o Citizens Advice Bureau? o Energy Saving Trust? o Housing Association? o Council / Local authority? o DECC website o Eaga/ CES website o Directgov o EST Advice Centre o Consumer Focus Energy Help o Home Heat Helpline Did you talk to anyone else about the scheme when you were first hearing about it? Who? What did you talk about with them? PROBE around whether they spoke to other members of their family or household about Warm Front, or whether they sought other advice from experts

4.01 What were customers' expectations	What was your first reaction to hearing about the scheme? PROBE FULLY THEN PROMPT: • What questions did you have about the scheme when you first heard about it? • Did you ask for any further information? What information? From where/who? To what extent did this answer any questions you had? • What concerns, if any, did you have about the scheme when you first heard about it? What do you remember about what you were told about the scheme at this time? Explore spontaneously first, and then probe on following if necessary: • Who were you told / did you think was eligible for the scheme? • What types of installation did you hear were available through the scheme? (i.e. what did you expect to be able to receive as part of the scheme?) • What did you hear about how the installation would be paid for? Did you expect this to be free or did you expect to need to pay for all or some of it? • What did you hear about what you would need to do to apply for the scheme? • What did you hear about how long it might take to have an assessment done and for the heating system or insulation to be installed?
Experience of the Warm Front application process	
3.01 What prompted applications	What were the main reasons you decided to apply for the scheme. PROBE FULLY THEN PROMPT: • Financial grant/didn't have to pay full cost installation • House unbearably cold • Couldn't afford to heat house • Government run scheme • Information advice received • Received direct offer/approach • Timescales • Confidence in the organisations that offered it/were involved • Quality guarantees – accredited installers and products
3.05 Capacity to access support	How did you apply? (IF NECESSARY- by post, online or on the phone) Did you complete the application yourself or did someone do it on your behalf? IF AIDED – who helped with your application? Did you ask for their help or was this offered to you? Can you talk me through the process, as best you remember it? How did you find the application process as a whole? Did you find it easy or difficult? Which stages in particular? Why? What was easy and what did you find more difficult? PROBE FULLY Did you speak to anyone regarding any queries or help with the application? Who / which organisation was this? What was this about? Did you find this helpful or not? Why?

4 Customer journeys	When you made your application, were you told what to expect to happen next? Can you remember what information you were told at that time about the next steps? IF SUCCESSFUL APPLICATION PROBE ON: • Information about how long it would take to have your home assessed • Information about what types of heating system and insulation could be installed and what would not be covered by the scheme • Information about how long it would take to have the installation completed • Information about whether you would need to pay anything towards the installation Is there any other information that you think should have been available at the time of application that would have helped you? IF YES – why would this have been helpful? Is there anything you think could have been done differently during the application process? What? What difference would this have made?
3.08 Impact of benefit entitlement check	The Warm Front scheme ran over many years. At some points in the scheme it was possible for the applications team to help advise people about whether they were receiving all the benefits their household was entitled to. Did you have a benefit entitlement check as part of your application? What did you think about this? Did this result in any changes to the benefits you receive?
Experiences of the assessment process	
	After you made your application, the next step would have been for someone to come out to your house to assess what the scheme could do to help you. This would have involved someone coming into your home to look at your heating system, the type of walls you have and any insulation you already had installed. IF UNSUCCESSFUL APPLICANT – Did you receive this visit or were you told before this point that you would not be eligible for help under the scheme? IF UNSUSCCESSFUL APPLICANT DID NOT HAVE ASSESSMENT SKIP STRAIGHT TO SECTION 8
4.01 What were customers' expectations	ASK THIS SECTION TO ALL SUCCESSFUL APPLICANTS AND UNSUCCESSFUL APPLICANTS WHO HAD ASSESSMENT VISIT Can you remember how long it was between making your application and someone visiting your home? Was this as you expected?
4 Customer journeys	What do you remember about this first assessment visit? Was there anything you felt was good about this visit? Was there anything you felt was less good? • PROBE: Were you told who would be coming and when? • Did they come when you were expecting them to? To what extent did the assessor explain to you what they were looking at/for in your home? To what extent was the assessor able to answer any questions you had about the scheme? Did you understand what would happen next after this assessment had been done? Was there anything you thought should have been done differently at this stage?
Experiences of the installation process	

4 Customer journeys	The next step would have been for the boiler or insulation to be installed in your home. Can you remember how long it was between the first visit to assess your home and the measures being installed? Was this as you expected? IF RESPONDENT SAYS THEY EXPERIENCED A LONG WAIT: • What, if any, was the impact of this wait on your household? How able were you to keep your home warm whilst you waited for your installation? PROBE Physical / mental health / emotional impacts. • Did you receive any help or advice from anyone during this time you were waiting? • Did you receive any emergency heating measures? IF SO What were these, and who provided them? Were they effective? • Was there anything that could have been done differently to make this wait easier for you?
4 Customer journeys	What do you remember about the day(s) the installation happened in your home? Was there anything you felt was good about the visit(s)? Was there anything you felt was less good? Did the installation go as you expected, or did anything unexpected happen? What? Why was this as/not as you expected? PROBE: Did it run smoothly or was it a difficult process? Did it cause any disruption? What? How would you describe the installer? PROBE To what extend did you find the installer friendly and helpful? Professional? Respectful of your home? Tidy? To what extent did the installer explain to you what they were doing? IF HAD NEW HEATING SYSTEM INSTALLED - To what extent did the installer explain to you how to use the new system? How easy or not was it to understand this? Did you get written instructions? Do you still have these? To what extent was the installer able to answer any questions you had about the scheme? What did you think about the quality of the installation at the time? IF NECESSARY- were you confident it was of a high quality/ concerned it was low quality? What did you understand what would happen next after the installation had been done? Was there anything you thought should have been done differently at this stage?
3.06 Contributions from householders	Did you know whether the Warm Front scheme covered the total cost of the installation i.e. it was installed for you completely free of charge, or did you need to make a contribution to help cover the cost? IF ADDITIONAL CONTRIBUTION NEEDED: How did you cover this additional cost? PROBE: did you use savings? Take out a loan? Receive financial help from another organisation or your Local authority? How easy, or not, did you find it to cover this additional cost? What impact, if any, did this have on your household? As a whole, what do you think of the quality of the installation? Why do you say this? How, if at all, could the installation process have been improved?

4 Customer journeys	IF HAD NEW HEATING SYSTEM OR HEATING CONTROLS INSTALLED - How easy or difficult have you found it to use your new heating system/controls? For example, how easy or difficult has it been to set the timer, or to set the temperature that you want your house, or different rooms at? Have you needed any help to use it since it was installed? IF YES – where did you go to get this help? How useful was the advice you were given?
Impact of the measures	
4.01 Were customers' expectations met	Before you had the measure installed, what difference did you expect this would make? Why did you think that? What difference, if any, has the installation of a new boiler/ insulation made to your home? What have been the benefits of having the measure installed? PROBE: • Warmer home • Lower heating bills • Better health • Happier Which has been the greatest benefit? What, if any, have been the downsides to having the measure installed? Since the measure was installed as part of this scheme, have you gone on to do anything else in your home to repair, replace or improve your heating system or insulation? IF YES - What have you done? How have you financed this? PROBE FOR ASSISTANCE FROM OTHER SCHEMES
Overall satisfaction and complaints procedure	
4 Customer journeys	Overall how satisfied or not were you with your experience of the Warm Front Scheme? • What were you most satisfied with? Why? • What were you least satisfied with? Why? After the installation, did you receive any other visits to your home as part of the Warm Front Scheme? PROBE: • Did anyone come back later to do a check-up to make sure everything was still working? • Did anyone ever have to come back due to a problem or fault you reported? What was your experience of these follow-up visits?

4.03 Customers on complaints	Did you have any problems with what was installed? Were these resolved satisfactorily? Why/Why not? Did you ever feel that you wanted to make a complaint about any aspect of the scheme? IF YES: Did you make a formal complaint? IF MADE NO FORMAL COMPLAINT – Why was this? PROBE - understanding of where to go to make a complaint? Any concerns they had about implications of making a complaint (i.e. did they think it would affect their receipt of benefits?) IF MADE FORMAL COMPLAINT - Who did you direct your complaint to in the first instance? If unsure probe on CES/Eaga/Carillion, DECC, Installer, Local authority, local charity, local MP) IF NOT CES: Why did you choose to direct your complaint to them rather than to the scheme manager at CES/Eaga/Carillion? How would you describe the way your complaint was handled? • How easy or difficult was it to get through to someone who could answer your query? • How professionally or not do you think your query was handled? • How satisfied or not were you overall with the way it was handled? Did you involve anyone else/any other organisation in your complaint at any stage? E.g. DECC, Local authority, MP? To what extent did this help you to get your complaint get resolved?
Unsuccessful applicants only	
4 Customer journeys	Please could you explain how you were informed your application had been unsuccessful? PROBE: • Who did you hear this from? • How were you told – by phone, by email, in person? How clear or not was the explanation about why you were not eligible for help under the scheme? Do you think there is anything that could have been done differently about the way you were told about the outcome of your application? What difference would this have made to you? How did you feel about the decision that had been taken? What impact, if any, did this have for your household? Since this time, have you gone on to do anything else in your home to repair, replace or improve your heating system or insulation? IF YES - What have you done? How have you financed this? PROBE FOR ASSISTANCE FROM OTHER SCHEMES IF NO – What has stopped you repairing or replacing your heating system or insulation? What impact has this had for your household?

4 Customer journeys	IF APPLICANT CHOSE TO WITHDRAW FROM THE SCHEME THEMSELVES: Please can you tell me why you took the decision to withdraw from the scheme? Explore spontaneously first and then probe if necessary: - Related to the disruption they felt it could cause - Something going on in the household meaning it was a bad time (e.g. an illness, change of circumstance) - Timing of the scheme meaning they could not wait for the Warm Front installation and had to go ahead using other finance - Found out they would have to finance some of the installation themselves and were not able to do so
4 Customer journeys	ASK ALL At some points in the scheme, some households were able to apply for a £300 voucher if they were not eligible for the main scheme. Were you aware of the Government's £300 voucher scheme? Did you apply for this? Were you successful in your application? IF YES – How did you use the £300 voucher? What impact did this have for your household, if any?
Summing up	
4.02 Customer experiences of WF	Overall, how would you describe your experience of the Warm Front scheme? • In terms of the end result • In terms of the processes If the government was to operate similar schemes in the future, is there anything you think they should do differently? Is there anything that was particularly good that should be retained? Do you have any final comments for the Department of Energy and Climate Change or Carillion?

9.2. Technical Appendix

The scheme operator provided data on the Warm Front scheme for the period covering 1 April 2005 through to 31 March 2013 for the quantitative research. This included datasets on installers (i.e. companies that carried out Warm Front installations), inspections of gas and oil installations, applications and referrals, intervention measures, benefits being received and other information on the house and household (e.g. tenure, location, hard-to-treat and hard-to-reach status). Table 2 provides details on the different datasets used in the quantitative analysis.

Each dataset was read separately into SAS (v9.3) for cleaning and reforming, and where necessary appending. Each dataset was structured in a 'long' format, with the unique household ID (a.k.a referral ID) acting as a separate record (rows) and features of the scheme as variables (columns). The same structure was also used for installer level data.

Table 2 - Warm Front Scheme dataset details

Dataset	Level (Records)	Description (selection)
Installers	Installers (N= 1,218)	Information on installers (i.e. companies), including: name, number of measures installed, and total value of work.
Inspections	Household (N= 558,793)	Information on inspections, including: inspectors, date of creation and inspection, and working days between.
Complaints	Household (N= 47,638)	Details on complaints, including: type, status, date, resolution, installer, and deliverable.
Referral	Household (N= 2,455,075)	Details on referrals, including: date, channel, source, tenure, ethnicity, and age band.
Measures	Measure level (N= 9,937,130)	Details on each measure, service or administrative feature for a dwelling, including: type of measure installed, service provided and administration offered.
Hard to treat & Hard to reach	Household (N= 832,011)	Details on household hard-to-treat or hard-to-reach status and features.
Benefits	Benefit level (N=4,329,322)	Details on type of benefits received by households (including multiple per household)
Survey	Household (N= 493,534)	Details on referral to survey (from 2008 onward), including: date of application and survey and working days.

9.2.1. Data cleaning

After being read into SAS, each dataset was examined and 'cleaned' to create a consistent 'research ready' dataset.

Data cleaning for the Warm Front data involved checking that the date stamps attached to each record were plausible, and where necessary correcting these[33]. Other corrections included creating consistent variable categories; for example, ensuring that all household dwelling type categories were the same, such as 'terrace, detached, bungalow, flat'.

Each dataset included the following modifications or exclusions:

9.2.2. Installer data:

- Inactive installers (i.e. companies) that were listed but did not install any measures under the period provided were excluded (approximately 5 records)

9.2.3. Complaints data:

- Records where there was no complaint date and no resolution date were excluded (approximately 8 records)

Referral/ Application data:

- Records with client age greater than 107 were excluded as they were assumed to be errors (approximately 40 records)
- Dwellings that were coded as being in Scotland were excluded – Warm Front was an English scheme (approximately 26 records)

9.2.4. Measures data:

- Multiple measure records were imported for each household, i.e. households were repeated for every different measure the received
- Measure data records were recoded from a single string variable to four separate categories, including:
    - Measure group: 'Measures', i.e. efficiency interventions provided under the scheme; 'Administrative', i.e. running the scheme; 'Service', i.e. non-efficiency measures provided under the scheme.
    - Measure type by measure group: Measure included 'Heating system', 'Boiler replacement', 'Insulation', 'Draughtproofing', 'Compact Florescent Lightbulbs'; Service included 'Asbestos removal', 'Insurance', 'Material Supply', 'Surveys', 'Inspections', 'Inspections'; Administration included 'excess contribution', 'finders fees', 'guarantees', 'heating rebates', 'annual service visits'
    - Measure Subtype; Measure subtype included the many sub-categories for the type of measure, for example boiler replacement included 'gas', 'LPG', 'oil', 'solid fuels', etc.
- No records were excluded.

9.2.5. Hard-to-treat (HTT) and Hard-to-reach (HTR) data:

- HTT and HTR data came from two separate sources and were merged, a new variable was created to identify dwellings that were both HTT and HTR
- No records were excluded.

9.2.6. Inspection data:

- Inspections were only carried out for gas and oil heating installations (initially for 100% of installs and subsequently from 2010 10%), a new variable for the number of working days between the inspection being created and the inspection taking place was created.

[33] Depending on the original file source (i.e. csv or excel) the dates may be imported differently, for example 01Apr2005 could be read differently than 01/04/2005. Coding was developed to correct these occurrences.

- No records were excluded.

9.2.7. Benefits data:

- Multiple benefit records were imported for each household, i.e. a household could be in receipt of more than one benefit.
- Some benefit records were recoded for clarity and consistency.
- No records were excluded.

Survey data:

- A new variable for the number of working days was created using referral date and survey date.
- Records for individual applications that were missing a unique dwelling ID (i.e. Referral ID) were excluded (approximately 40)

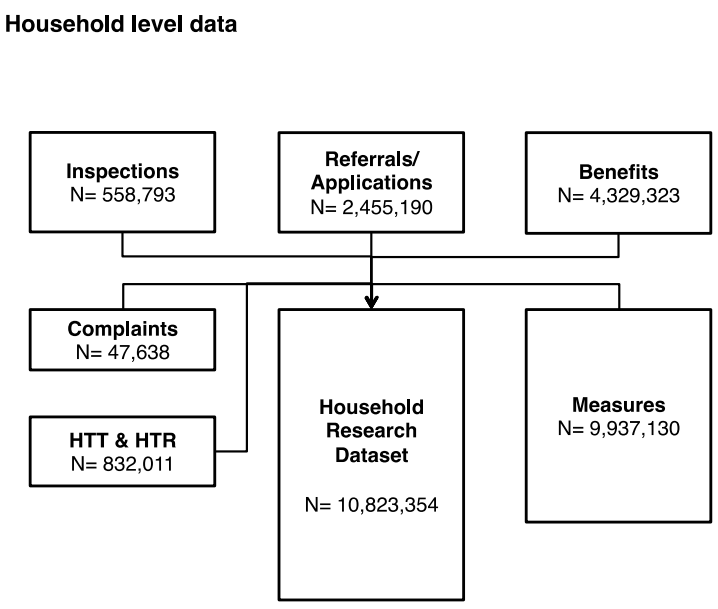
9.2.8. Research data

Following the data cleaning and formatting, a single 'research ready' dataset was prepared for use in the analysis. Two research datasets were developed for the analysis, an installer level dataset and a household level dataset.

The installer level dataset included a record for each installer, repeated for each year they were active in the Warm Front scheme.

The household level dataset merged all the datasets that included a unique household ID record. The outcome was a single dataset that contained records for each unique household that applied into the scheme (i.e. drawn from the referral/application dataset). Because not all households received a measure due to being ineligible or leaving the scheme, a dataset with 'missing' values for a number of variables were created. Figure 39 illustrates the linking of the datasets.

Figure 39 - Household research data structure



9.2.9. Research Plan

The research plan consisted of selecting the appropriate dataset (i.e. installer or household), the level of analysis (i.e. quarterly, annual, scheme level) and the appropriate variables. For each research question, the single integrated installer or household dataset was used to derive descriptive statistics or statistical models. The majority of the research undertaken in this evaluation was descriptive in nature.

Within the analysis, all records that were relevant for the research question were used, i.e. no further exclusions took place. Records with missing variables were still used for the analysis. The exceptions were those research questions that made use of statistical modelling, which were two questions looking at the likelihood of applications and complaints.

Below, Table 3 outlines each research question that was addressed along with the level of analysis and the observation unit used, which will mark the data set used for the analysis.

Table 3 - Research question and data level and unit

RQ ID	Research Questions	Level	Observation unit
1.3	Supply chain management		
1.3.1	What is the average interval (and spread) of time between applications to the WF scheme and the survey and benefit check, by type of efficiency measure and supplier?	Scheme	Household
1.3.2	What is the average interval (and spread) of time between the survey and benefit check for a measure in the WF scheme and the work allocation, by type of efficiency measure and supplier?	Scheme	Household
1.3.5	What is the average interval (and spread) of time between a Warm Front measure application and final installation date, by type of efficiency measure and supplier?	Scheme	Household
1.3.6	What is the mix of measures installed by installers and how many have been delivered by small and large companies	Scheme	Installer
1.5	Eligibility checks		
1.5.1	What is the ratio of approved applications to total submissions and by measure?	Scheme	Household
1.5.2	What is the rate of rejection by referrals to non-referral applications?	Scheme	Household
1.5.4	How has the ratio of approved to total applications change with changes to the eligibility criteria and were there differences between different applications by measure, location and household characteristics?	Scheme	Household
1.8	Return to properties		
1.8.4	What is the annual inspection rate success by installer and what factors affect inspection/failure ratio?	Scheme	Installer
1.9	Complaints		
1.9.1	What is the annual total complaints made and its rate of total annual measures installed, by type of measure?	Scheme	Household

1.9.2	What is the rate of annual total accepted complaints from total complaints, by type of measure?	Scheme	Household
1.9.3	What effect do type of interventions and household characteristics have on the rates of complaints and rate of complaints upheld?	Scheme	Household
1.9.4	What is the annual rate of complaint by type and what scheme factors affect this rate	Scheme	Household

2.1 Value for money: prices

2.1.1	What was the average price paid for interventions, by type and region, under the WF scheme?	Scheme	Supplier
2.1.2	What impact did the introduction of the e-bid system have on prices paid for interventions	Scheme	Supplier

2.2 Value for money: fees

2.2.1	What was the average in paid fees for interventions, by type and region, under the Warm Front scheme?	Scheme	Scheme

2.3 Value for money: cost-effectiveness

2.3.1	What effect did different marketing routes have on number and source of applications to the Warm Front scheme, by type of measure, household characteristic?	Scheme	Household

3.2 Effective of referral system

3.2.1	What proportion of applications to the Warm Front scheme were from referrals, overall and by type of measure?	Scheme	Household
3.2.2	What proportion of Warm Front scheme applications from referrals were rejected, overall and by type of measure?	Scheme	Household
3.2.3	What household and dwelling factors affected the proportion of referral applications, by type of measure, compared to non-referral applications?	Scheme	Household

3.3 Referral providence

3.3.1	What is the rate of translated Warm Front referrals by source and engagement mechanism?	Scheme	Local authority
3.3.2	What is the average cost of referrals and are there differences by source and engagement mechanism and translation rate?	Scheme	Local authority

3.4 Households assisted

3.4.1	How many households were assisted under the Warm Front scheme, overall and by type of measure?	Scheme	Household
3.4.2	What was the distribution of applications by energy performance of dwellings, by type of measure?	Scheme	Household

3.5 Household profile

3.5.1	What is the distribution of installed measures under the Warm Front scheme by household and dwelling characteristics?	Scheme	Household
3.5.3	Are there differences in the distribution of rejected applications compared to accepted applications by household and dwelling feature?	Scheme	Household

3.6 Grant size

3.6.1	What was the average grant (and spread) provided under the WF scheme annually and over the scheme period?	Scheme	Household
3.6.2	What impact did scheme factors have on the average (and total) grant amount given under the WF scheme?	Scheme	Household
3.6.3	What impact did the size of the grant provided under the WF scheme have on the installation rate, by type of measure?	Scheme	Household
3.6.4	What effect did household contributions have on installation rate, by size and source of contribution and by type of measure?	Scheme	Household
3.6.5	What effect did the ratio of the contribution to grant have on the installation rate, by type of measure?	Scheme	Household

3.7 Qualifying benefits

3.7.1	What was the difference in benefit claims by benefit type and region?	Scheme	Household
3.7.2	What was the qualifying rate for benefits claimed by benefit type and region?	Scheme	Household
3.7.3	What differences were there in the qualifying rate for benefits, by intervention type and household characteristics?	Scheme	Household

3.8 Impact of benefit checks

3.8.1	What was the average rate of application to the WF scheme by type of benefit by year and overall?	Scheme	Household
3.8.2	What impact did the introduction of benefit checks have on approved applications for WF scheme, by benefit type?	Scheme	Household
3.8.4	What was the change in the applications to surveyed properties by benefit?	Scheme	Household

3.9 Hard-to-treat homes

3.9.1	What is the proportion of 'hard-to-treat' homes that have applied to the WF scheme compared to estimates of total HTH by regional area?	Scheme	Household
3.9.2	What proportion of 'hard-to-treat' homes made a contribution under the WF scheme, by type of measure and household characteristic?	Scheme	Household
3.9.3	What was the average cost (and spread) of contributions made by 'hard-to-treat' homes under the WF scheme?	Scheme	Household

3.9.4	What is the rate of referral and intervention approval for 'hard-to-treat' homes in the WF scheme	Scheme	Household
3.9.5	What is the distribution of measures applied for by type for 'hard-to-treat' homes?	Scheme	Household

3.10 Hard-to-reach homes

3.10.1	What is the proportion of 'hard-to-reach' households that applied for WF scheme?	Scheme	Household

4.1 Complaints

4.1.1	What were the most frequent complaints made in the Warm Front scheme and when were these made through the customer journey?	Scheme	Household
4.1.2	Does the frequency of complaints and their type differ by household feature and intervention type and what is their likelihood?	Scheme	Household

4.3 Satisfaction

4.3.1	What is the overall proportion of complaints made by households compared to total number of households assisted and do these differ by household features (e.g. hard to reach, hard-to-treat) and intervention type.	Scheme	Household

5.1 Value of work undertaken

5.1.1	What is total monetary value (£'s) of the Warm Front scheme installations (material + labour + administration) undertaken by installer, by organisation size?	Scheme	Installer
5.1.2	What is the average monetary value (£'s) (and spread) of installations by organisation size, type of measure and supplier over the total and annual period?	Scheme	Installer
5.1.3	What are the differences in monetary value (£'s) by installation type undertaken in the Warm Front Scheme by installer and over the period of the scheme?	Scheme	Installer

5.2 Jobs created

5.2.2	What is the installation rate of installers by type of measure?	Scheme	Installer

9.3. Research question mapping

DECC Q Ref	Evaluation objective	UCL question
1	**Management of scheme**	
1.01	How effective was the model of a single scheme manager in ensuring delivery of the scheme?	
1.02	How effectively were the operational functions aligned?	
1.03	How did the scheme manager manage the external supply chain (i.e. their management framework with installers, lead times, whether they ensured there was sufficient capacity to deal with demand)?	What is the average interval (and spread) of time between applications to the WF scheme and the survey and benefit check, by type of efficiency measure and supplier? What is the average interval (and spread) of time between the survey and benefit check for a measure in the WF scheme and the work allocation, by type of efficiency measure and supplier? What is the average interval (and spread) of time between the work allocation for a measure in the WF scheme and the installation, by type of efficiency measure and supplier? What impact did the e-bid system have on the work allocation to installation interval? What is the average interval (and spread) of time between a Warm Front measure application and final installation date, by type of efficiency measure and supplier?
1.04	How was the scheme administered by the scheme manager (what processes and checks were in place for eligibility checks, surveys, installations, inspections, remedial work, and customer contact)?	
1.05	How robust were the processes to confirm eligibility for applicants to the scheme?	What is the ratio of approved applications to total submissions and by measure? What is the rate of rejection by referrals to non-referral applications? What are the most frequent reasons for applications being rejected? How has the ratio of approved to total applications change with changes to the eligibility criteria and were there differences between different applications by measure, location and household characteristics?
1.06	How was delivery of installations monitored and	

	quality assured?	
1.07	How was the scheme manager's delivery of the scheme monitored and quality assured?	
1.08	How many times have Warm Front had to return to a property to undertake new or remedial work? What was the reason for this?	What is the annual rate of return to properties by suppliers to undertake additional or remedial work on Warm Front measures, by type of measure, reason and location? What are the most frequent complaints in dwellings that have had a return visit from a supplier? What effect did alternative engagement mechanisms (e.g. call centres) have on the rate of return by suppliers to undertake additional or remedial work on Warm Front measures?
1.09	How many complaints were there and how many were upheld?	What is the annual total complaints made and its rate of total annual measures installed, by type of measure? What is the rate of annual total accepted complaints from total complaints, by type of measure? What effect do type of interventions and household characteristics have on the rates of complaints and rate of complaints upheld?
1.1	How successful has the exit planning of the scheme been (e.g. project plan established and risks captured and mitigated, timings on scheme closure and completion of work)?	
1.11	How was Warm Front delivery affected by other policies (e.g. CERT, £300 cash back scheme, in particular how did this interaction affect budget planning and did it delay delivery of measures?)	

2	Value for money	
2.01	Did the scheme offer value for money in comparison with the general market? In particular; - Price Prices paid for installations (normalised and e-bid) and how these compare to the wider market. - Fees and whether these were competitive given what they were for - Cost-effectiveness of marketing/referrals.	What was the average price paid for interventions, by type and region, under the WF scheme? What impact did the introduction of the e-bid system have on prices paid for interventions What was the difference in the prices paid under Warm Front as compared to available known market prices? What impact did the introduction of the e-bid system have on the difference in the prices paid under WF scheme compared to known market prices?
2.02	Did the scheme offer value for money in comparison with the general market? In particular; - Cost-effectiveness of marketing/referrals.	What was the average in paid fees for interventions, by type and region, under the Warm Front scheme? What was the difference in the paid fees under Warm Front as compared to available known market fees? Was there a change in fee paid for interventions, by type and region, under the Warm Front scheme?
2.03	Did the scheme offer value for money in comparison with the general market? In particular; - Cost-effectiveness of marketing/referrals.	What effect did different marketing routes have on number and source of applications to the Warm Front scheme, by type of measure, household characteristic?

3	What prompted vulnerable households that are fuel poor?	
3.01	What prompted Warm Front customers to apply for the scheme?	What are the most frequent cited reasons for applying to the Warm Front scheme, by type of measure, and what effect do household and dwelling characteristics have an the applications?
3.02	How effective was the referrals system in creating demand for the scheme?	What proportion of applications to the Warm Front scheme were from referrals, overall and by type of measure? What proportion of Warm Front scheme applications from referrals were rejected, overall and by type of measure? What household and dwelling factors affected the proportion of referral applications, by type of measure, compared to non-referral applications? What household and dwelling factors affected the proportion of applications made by referrals? What difference was there in the rate of application by local authority?
3.03	Where have referrals come from and was it the most effective and cost effective method?	What is the rate of translated Warm Front referrals by source and engagement mechanism? What is the average cost of referrals and are there differences by source and engagement mechanism and translation rate? What factors of the dwelling affect differences in referral costs?
3.04	How many households were assisted and which measures were installed under the scheme?	How many households were assisted under the Warm Front scheme, overall and by type of measure? What was the distribution of applications by energy performance of dwellings, by type of measure?
3.05	What was the profile of those households assisted under the scheme (e.g. were particular types of households particularly good at accessing support whilst others missed out)?	What is the distribution of installed measures under the Warm Front scheme by household and dwelling characteristics? Are there differences between those dwellings assisted by the Warm Front scheme and the expected market (i.e. total number of benefit claimants) for WF measures, by local area and type of measure? Are there differences in the distribution of rejected applications compared to accepted applications by household and dwelling feature?

3.06	What was the average grant provided and how did this differ over time. In addition to what extent did this effect how much households had to contribute themselves?	What was the average grant (and spread) provided under the WF scheme annually and over the scheme period? What impact did scheme factors have on the average (and total) grant amount given under the WF scheme? What impact did the size of the grant provided under the WF scheme have on the installation rate, by type of measure? What effect did household contributions have on installation rate, by size and source of contribution and by type of measure? What effect did the ratio of the contribution to grant have on the installation rate, by type of measure.
3.07	What was the qualifying benefit customers were claiming for Warm Front?	What was the difference in benefit claims by benefit type and region? What was the qualifying rate for benefits claimed by benefit type and region? What differences were there in the qualifying rate for benefits, by intervention type and household characteristics?
3.08	What was the impact of the benefit entitlement checks in the scheme (i.e. did this increase the number of applicants to the scheme, what addition income did this provide for the household)?	What was the average rate of application to the WF scheme by type of benefit by year and overall? What impact did the introduction of benefit checks have on approved applications for WF scheme, by benefit type? How many households received a benefit following a check, and what impact was there on the rate of approved installations? What was the change in the applications to surveyed properties by benefit?
3.09	What were the barriers to reaching hard to treat homes (solid walls, pre-1929, off gas network, no loft cavity) and what was the impact of the scheme on them?	What is the proportion of ‘hard-to-treat’ homes that have applied to the WF scheme compared to estimates of total HTH by regional area? What proportion of ‘hard-to-treat’ homes made a contribution under the WF scheme, by type of measure and household characteristic? What was the average cost (and spread) of contributions made by ‘hard-to-treat’ homes under the WF scheme? What is the rate of referral and intervention approval for ‘hard-to-treat’ homes in the WF scheme What is the distribution of measures applied for by type for ‘hard-to-treat’ homes?
3.1	How did Warm Front impact on hard to reach homes (rural, private landlord, ethnic minority) and what was the impact of the scheme on them?	What is the proportion of ‘hard-to-reach’ households that applied for WF scheme overall and compared to estimated number of ‘hard-to-reach’ households within a local area?

4	**Customer journey**	
4.01	Did the scheme meet customer expectations (what were customer expectations)?	What were the most frequent complaints made in the Warm Front scheme and when were these made through the customer journey? Does the frequency of complaints and their type differ by household feature and intervention type and what is their likelihood? What proportion of WF scheme applications were made and/or approved for other measure?
4.02	What were the customer journey like/ their experience under the Warm Front scheme?	
4.03	What was the level of customer satisfaction / complaints?	What is the overall proportion of complaints made by households compared to total number of households assisted and do these differ by household features (e.g. hard to reach, hard-to-treat) and intervention type.
5	**Additional benefits / disbenefits of scheme**	
5.01	What has been the value of work undertaken by each installer in the scheme?	What is total monetary value (£'s) of the Warm Front scheme installations (material + labour + administration) undertaken by installer, by organisation size? What is the average monetary value (£'s) (and spread) of installations by organisation size, type of measure and supplier over the total and annual period? What are the differences in monetary value (£'s) by installation type undertaken in the Warm Front Scheme by installer and over the period of the scheme?
5.02	How many jobs have been created or supported through the Warm Front scheme?	What is the total number of installers (i.e. employee id enumeration) by supplier? What is the installation rate of installers by type of measure?
5.03	What percentage of installers work has been on Warm Front customers?	
5.04	What has been the impact of the Warm Front Scheme on the suppliers of materials to the Warm Front scheme (Plumb Centre)?	
5.05	Did the Warm Front Scheme create dependencies for the installers / surveyors/ suppliers?	
5.06	What has happened to the market since the end of the scheme?	What is the annual total proportion of installations by type installed under the WF scheme compared to estimates of total installations undertaken in the UK during the scheme?
5.07	What role did the installer bond have in encouraging or deterring installers to sign-up for Warm Front?	

9.4. Scheme timelines

Scheme year (April to March)	Scheme month	Materials	Ebid	Surveying, inspections and aftercare	Inspections	Aftercare	Benefits	Grants	Budget	Expendature	Marketing	Management and guidance
2005/06		Installers purchase own materials	Direct allocation	Installer surveys	100% of installations inspected	2 years of aftercare	Benefit entitlement checks offered to applicants who appear inelligable	Maximum grant £2,700 (£4,000 for hard to treat houses)	£190m	£190m		CES become single scheme manager
2006/07									£315m	£315m		
2007/08									£350m	£350m		
	May-07						Benefit entitlement checks offered to all applicants, regardless of eligiability					
2008/09									£395m	£395m		
2009/10		Materials centrally purchased by CES - Graham Group and Plumb Center		CES start technical surveys using own, in-house team			Benefit entitlement checks end	Maximum grant £3,500 (£6,000 for hard to treat houses)	£369m	£369m		
	Nov-09		Phase in of Ebid									
2010/11		Materials centrally purchased by CES - Plumb Center only							£366m	£366m		
	Oct-10								Spending review announced scheme buget reduced	Spending review announced scheme buget reduced	Marketing stops	
	Nov-10		Ebid in full operation									
	Dec-10										Budget reached, scheme closes early	
2011/12					Inspection regime changed from 100% of gas and oil heating installations to 10%	Aftercare reduced from 2 years to 12 months.	Eligibility criteria changed - DLA and child tax credit dropped as qualifying benefits.		£145m	£108.6m	Networker teams disbanded	
2012/13									£100m	£98m		
	Sep-12						Scheme eligibility criteria widened again.					
	Jan-13											
	Feb-13		Switch away from Ebid, back to direct allocation									
2013/14												
	Jun-13											CES teams start to disband

9.5. Scheme timescales

Table 4 - Timescales for the Warm Front scheme

Activity	Process	Timescale
Heating measure	From allocation to installation	70 working days
Insulation measure	From allocation to installation	40 working days
E-bidding works subject to a customer contribution	From notification that customer contribution has been made, to installation	28 working days
Application to survey	Application to survey	21 working days

9.6. Benefits

Table 5 - Benefits claimed by Warm Front applicants

Benefit Type	Frequency	Percent
Attendance Allowance	272,979	6.31
Child Tax Credit And Severe Disability Element	11,063	0.26
Not reported	675,156	15.59
Constant Attendance Allowance	4,319	0.1
Child Benefit	159,446	3.68
Child Tax Credit	752,488	17.38
Council Tax Benefit	362,419	8.37
Disabled Child Premium	2,162	0.05
Disability Premium	85,275	1.97
Disability Living Allowance	611,071	14.11
Disabled Persons Tax Credit	470	0.01
Disabled Worker Premium	104	0

Enhanced Disability Premium	1,132	0.03
Enhanced Pensioner Premium	219	0.01
Housing Benefit	162,623	3.76
Higher Pensioner Premium	255	0.01
Industrial Injuries Disablement Benefit	7,115	0.16
Income Support	249,455	5.76
Income Based Job Seekers Allowance	50,990	1.18
Lone Parent Benefit	60,008	1.39
Maternity Certificate (Mat B1)	13,230	0.31
Mobility Supplement	10,716	0.25
NHS Tax Exemption Certificate	7,867	0.18
No Benefit	23,658	0.55
Pension Credit	556,737	12.86
Pensioner Premium	1,198	0.03
Income Based Employment And Support Allowance	20,448	0.47
Severe Disability Premium	1,976	0.05
State Pension As Main Source Of Income	37,428	0.86
Benefit Not Required	10,398	0.24
Working Tax Credit	165,325	3.82
War Disablement Pension	6,427	0.15
Working Families Tax Credit	5,165	0.12
All benefits received by households	4,329,322	100

9.7. Measure costs

Cost of measures by year (excluding VAT)	2006			2007		
Measures	**Mean**	**Median**	**Max**	**Mean**	**Median**	**Max**
CFL	8.08	8.09	8.09	8.09	8.09	80.85
Cavity Wall Insulation	372.17	373.07	1,608.92	392.71	391.81	2,346.07
Draught proofing	135.44	129.13	445.35	141.28	134.75	408.17
Electric Storage Heating	582.74	545.98	2,307.46	635.26	580.11	2,436.33
FIDI Hot Water Tank	496.23	438.10	1,441.63	535.40	463.06	2,131.50
Boiler Replacement Gas	1,646.83	1,687.05	3,999.10	1,603.07	1,687.52	3,579.43
Gas Central Heating	1,518.98	1,535.63	3,709.88	1,515.95	1,551.56	2,795.70
Hot Water Tank Jackets	16.06	15.97	63.71	16.82	16.71	37.49
Loft Insulation	316.12	295.68	2,004.51	329.83	308.54	2,528.60
New Gas Supply	424.65	508.91	4,671.94	373.71	462.71	2,665.93
Heating Repairs	52.19	40.77	2,691.91	51.75	42.37	3,439.43

Cost of measures by year (excluding VAT)	2008			2009		
Measures	**Mean**	**Median**	**Max**	**Mean**	**Median**	**Max**
CFL	8.08	8.09	8.09	8.20	8.09	16.63
Cavity Wall Insulation	416.26	409.66	2,661.68	434.77	416.80	2,526.11
Draught proofing	147.76	140.67	351.42	152.88	143.31	426.48
Electric Storage Heating	631.87	598.91	2,318.70	670.32	644.35	3,049.34
FIDI Hot Water Tank	472.04	426.23	1,921.47	568.13	484.31	2,430.42
Boiler Replacement Gas	1,565.55	1,673.25	3,576.24	1,838.91	1,896.06	5,781.06
Gas Central Heating	1,495.51	1,564.33	3,123.75	1,742.40	1,723.62	3,136.39
Hot Water Tank Jackets	17.52	17.37	55.22	17.88	17.64	39.46
Loft Insulation	348.63	325.00	2,413.75	350.84	329.33	2,539.06
New Gas Supply	308.65	278.25	1,837.50	475.99	568.05	4,491.42
Heating Repairs	56.75	44.43	2,777.02	237.15	54.78	5,789.60

Cost of measures by year (excluding VAT)	2010			2011		
Measures	**Mean**	**Median**	**Max**	**Mean**	**Median**	**Max**
CFL	8.32	8.32	8.32	8.32	8.32	8.32
Cavity Wall Insulation	416.89	401.63	2,321.92	411.52	398.06	1,401.60
Draught proofing	143.65	133.29	306.15	145.08	135.33	434.49
Electric Storage Heating	771.72	707.99	3,362.52	718.59	658.44	3,987.38
FIDI Hot Water Tank	606.14	486.06	2,426.10	551.89	437.08	1,772.51
Boiler Replacement Gas	1,615.53	1,672.11	4,945.53	1,622.38	1,573.62	7,480.52
Gas Central Heating	1,466.30	1,585.50	3,329.68	1,590.60	1,555.18	3,638.33
Hot Water Tank Jackets	17.45	17.13	44.10	16.68	17.13	46.05
Loft Insulation	322.01	306.18	1,839.92	333.35	309.49	2,066.40
New Gas Supply	51.10	-	2,341.92	38.76	-	5,355.65
Heating Repairs	264.36	61.11	5,493.64	278.78	71.40	5,010.08

Cost of measures by year (excluding VAT)	2012			2013		
Measures	**Mean**	**Median**	**Max**	**Mean**	**Median**	**Max**
CFL	.	.	.	.	.	.
Cavity Wall Insulation	383.57	357.00	1,657.94	467.30	391.13	1,547.70
Draught proofing	149.79	137.35	293.49	151.57	137.35	250.74
Electric Storage Heating	648.38	588.00	2,709.00	788.82	691.95	2,783.55
FIDI Hot Water Tank	571.99	447.76	1,315.15	564.85	512.06	787.50
Boiler Replacement Gas	1,198.23	1,104.76	7,455.38	1,414.02	1,365.00	5,670.59
Gas Central Heating	1,372.01	1,282.85	3,438.33	1,667.32	1,650.22	2,916.17
Hot Water Tank Jackets	14.71	15.75	18.27	15.75	15.75	15.75
Loft Insulation	314.70	286.62	1,040.55	351.37	305.71	1,260.00
New Gas Supply	33.34	-	3,033.89	-	-	-
Heating Repairs	293.41	227.86	3,082.36	335.73	262.52	3,070.45

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