

# Don't be late! Findings from reported perceptions and complaints of energy efficiency retrofits in low-income housing in England

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## Abstract

Between 2000 and 2013, the Warm Front Scheme sought to reduce heating fuel expenditure in vulnerable households in England, i.e. those on various forms of benefits or income support. The scheme assisted more than 2.4 million households through providing energy efficiency retrofits. An evaluation of the scheme was undertaken for the period 2005-2013 when over 1.5 million households were assisted. During the delivery of the scheme, support was provided for application, installation and post-installation support. Approximately 48,000 households called in to make a complaint during the evaluation period. Using the database of complaints collected by the call centre, the nature, content and issue, and the resolution of the complaint were examined. For households with a retrofit the complaints were connected along with the timing of the complaints. The findings show that while most installations were trouble-free, a substantial minority of customers experienced problems with their installation and that the proportion of complaints increased over the course of the scheme, particularly in the final two years. This appears to be, in part, a result of the increase in complex and major retrofits, but also to be due to complaints from unsuccessful applicants, following tightening of the eligibility criteria. Unsuccessful applicants were, understandably, generally less satisfied. Other areas of dissatisfaction amongst applicants focused around poor communication during wait times, and faults arising with what had been installed. This research examines an often under-reported part of retrofit programmes, i.e. the nature of the complaints related to the delivery of the programme and the retrofits, and how they were dealt with. For scheme designers and providers, understanding what aspects of the programme process are working or not is essential to ensuring a positive re-enforcement around retrofits and their uptake.

## Introduction

Currently, one in ten English households are defined as being in 'fuel poverty'. Many of these households have low incomes, are at higher risk of living in cold homes, and are likely to experience other social and health problems (Thomson et al., 2013). Beginning in 2000, the Warm Front Scheme (WFS) sought to reduce heating fuel expenditure in vulnerable households in England, i.e. those on various forms of benefits or income support (DECC, 2014a). In January 2013, the scheme was closed after assisting more than 2.4 million households with retrofits that focused on improving dwelling energy performance by reducing space and hot water heating demand and electricity use, including: efficient space heating and hot water systems, wall and loft insulation, and draught-proofing.

The Department of Energy and Climate Change (DECC) had responsibility for the scheme during the final eight years and initiated several evaluations during its programme life with the aim of both improving its delivery and also its impact. In the close out period, i.e. the final six months of the scheme delivery, a process evaluation of the scheme was undertaken for the period 2005-2013 when over 1.5 million households were assisted. Although the WFS was being discontinued, DECC were interested to know about the delivery process in order to determine if the scheme administrator, who had responsibility for the delivery of the scheme retrofits, was effective against a set of core objectives around management, cost, and customer satisfaction. The WFS was unique compared to other programmes because it was offered through a single service provider, rather than through energy

suppliers as most other energy efficiency programmes had been delivered (Rosenow, 2012). In addition, the process evaluation would provide learning lessons for future policies being developed by the government, especially for low-income and vulnerable households who have a greater risk of being in fuel poverty and remain a priority for state assistance. The process evaluation focused on the customer journey<sup>1</sup>, in particular the application, acceptance, assistance and aftercare associated with the scheme. One area of concern under the customer journey theme was why and when customers made a complaint and whether features of the delivery process impacted on the complaint.

Understanding why and when complaints occur, their motivating factors and reasoning, are an important element of understanding the customer journey. Customers and consumers make complaints for numerous reasons, including: dissatisfaction with products or services; reputation of the service/product provider; ease of making complaints; willingness of organizations to offer redress; consumer personality, attitudes and motives; costs and benefits of complaining, and social norms, to name a selection (Bearden and Mason, 1984). At the same time, it is also recognized that many consumers and customers do not complain (Chebat, 2005), which makes understanding the nature and motivations around those customers that do complain particularly important for programme development and deployment.

Related to this is how organizations respond to complaints and what processes work to improve satisfaction and why. A review article of organizational responses to customer complaints identified several important dimensions that should be considered in dealing with complaints, including: timeliness, facilitation, redress, apology, credibility, and attentiveness. Organizations that are able to understand how they deal with complaints in these terms have a greater ability of not only improving post-complaint satisfaction, but also to gain insight into the customer behaviour, intentions and word-of-mouth (Davidow, 2003).

There are few studies that have focused on understanding complaints associated with energy programme delivery, their nature and the impact the programme processes had on complaints. This study is particularly timely as many countries develop and deploy energy efficiency retrofit programmes that are meant to deliver considerable greenhouse gas mitigation.

During the delivery of the scheme, a call centre was offered to provide support for households during their application, installation and post-installation period. The call centre also handled complaints for all households who applied to the scheme, whether they ultimately received a retrofit or not. Approximately 48,000 households called in to make a complaint during the evaluation period. As part of the evaluation process, the Department of Energy and Climate Change (DECC), sought to determine the frequency and nature of the complaints made under the scheme, to understand how they might impact on (and be impact by) the delivery process, and how they were resolved.

The aim of this research is to examine the complaints made under the Warm Front Scheme in order to identify how effective the delivery of the scheme was in meeting customer expectations and to determine how complaints were affected by the delivery process in order to improve future programmes. This research examines the type of complaint and their relationship with the delivery process and retrofits provided, the length of time between an installed retrofit and a complaint made, and the costs of remedial works undertaken following complaints. The research questions posed by DECC were:

1. How many complaints were made regarding the scheme and what are the nature of the complaints; and how do these break down by: a) type of complaint (i.e. install defect, damage to the property etc.), and b) by type of retrofit installed (e.g. gas or oil boiler, insulation etc.)?
2. What is the average length of time from installation to complaint; and a) does this vary by type of installation (e.g. gas boiler vs oil boiler vs insulation); and, b) how has this varied over time in terms of when the installation was originally put in?
3. How do complaints get resolved and how many (proportion of) complaints get upheld on average and how this varies by retrofit?

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<sup>1</sup> The customer (or consumer) journey describes the experience of the customer, from initial contact, engagement and aftercare.

## Background

The Warm Front scheme (WFS), which ran from June 2000 to April 2013, was the primary tool through which the English government tackled fuel poverty<sup>2</sup> (DTI and DEFRA, 2001). The main aims of the WFS were: to minimise the risk of illness due to cold and damp in the most vulnerable households<sup>3</sup> in England; to improve household energy efficiency in vulnerable households and therefore reduce greenhouse gas emissions; and, to alleviate fuel poverty. The fuel poverty strategy included a suite of policies to target the three main factors that influence fuel poverty, including: dwelling energy efficiency, fuel prices, and household income.

The WFS provided a range of energy efficient heating and insulation retrofits to private tenure households in receipt of certain income related benefits. The WFS eligibility criteria from 2005 to 2011 included households in receipt of at least one of the principal means tested or disability related benefits (e.g. Child Tax Credit, Pension Credit, Employment and Support Allowance, Working Tax Credit, Income Support, Disability Living Allowance, and others). In April 2011, a further eligibility requirement was that households also had to be living in properties that were poorly insulated and/or did not have a working central heating system (defined as having an energy performance rating- known in the UK as the Standard Assessment Procedure (SAP) rating<sup>4</sup> of 63 or below).

**WFS Evaluation.** During the close-out period of the WFS, DECC undertook an end-of-scheme process evaluation that focused on understanding the scheme delivery process in three main areas: 1) management of the scheme, 2) value for money, and 3) the customer journey. In this research on customer complaints, we focused on the last area. The overall process evaluation included a qualitative component comprising interviews with different actors within the scheme delivery, including government department officials, the scheme provider, and energy assessors and installers. The qualitative component also included interviews with a number of households who were both successful and unsuccessful when applying to the scheme. The aim of the interviews was to understand the customer journey by providing context from those designing and administering the scheme, the nature of the workmanship undertaken by installers and their interaction with the households, and general level of satisfaction with the scheme.

**Customer journey.** The process involved applying to the scheme, either online, through the mail or by telephone, where the applicant would have a benefit entitlement check to determine their eligibility. Following a successful application, a Warm Front engineer carried out a technical survey to determine what energy efficiency retrofits were needed in the dwelling. Trained installers for the WFS would then carry out the installation, which would typically include insulation, draft-proofing and/or heating system work. Installations were then subject to an inspection. The available grant maximum changed during the WFS period with a peak of up to £3,500 (from £2,700) (or £6,000 from £4,000 where oil heating or renewables were recommended).

An interesting component of the WFS was that the retrofits being delivered were (for the most part) offered free of charge to the household. As such, the retrofit being delivered was related to the eligibility criteria of the household and the most appropriate retrofits available to improve the energy

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2 As defined by the UK government, a household was considered to be in fuel poverty if it they would need to spend at least 10% of their income to heat the house to an acceptable level. In July 2014, the UK Government produced a consultation report that revised the definition of fuel poverty that focused on poor households (i.e. income below poverty line, including notional energy bills) and dwellings with high energy costs (i.e. greater than the median), known as low-income, high-costs (LIHC) (DECC, 2014b).

3 Under WFS, vulnerable households were defined as those households containing children, or those who are elderly, sick or disabled.

4 Government's tool for assessing the energy performance of dwellings. The higher the SAP number the better the energy efficiency performance of a dwelling.

performance of the home covered under the scheme. This meant that applying to the scheme was one of the first points whereby expectations would be impacted; this phase was controlled by the scheme provider. Applications were made through three routes, direct applications, third part agents, such as local councils and care groups, and agents acting on behalf of the scheme provider directly. Following the application, for those successful, households entered into the assessment phase whereby an energy performance assessor would determine what retrofits were needed. The assessment phase offered another point impacting expectations which would be affected by the assessors and issues such as duration between application and a visit. This assessment would be passed back to the provider and then allocated to an installer who would schedule a date to install the specified retrofit. In this installation phase, expectations could be affected by the installer and their engagement with the household. Once installed, in the early part of the scheme, the household may have a follow up inspection of the retrofit, though these were reduced in the final four years of the scheme. At anytime during this process, customers could contact the call centre to make a complaint regarding the scheme.

## Research Methods

The database of complaints, alongside information on the household, retrofits, and the installers, was used to examine the occurrence and association between complaints and scheme processes and types of retrofits, the duration of time between installation and complaints and the cost of remediation associated with complaints. In this section the data as provided by the scheme administrator is described followed by details on the analysis method.

**Scheme Data.** The scheme administrator provided data on the Warm Front scheme for the period covering 1 April 2005 through to 31 March 2013 for the quantitative research. The scheme administrator provided collected data on a number of attributes related to the household application, the referral process, the benefits received by the household, the efficiency retrofits provided to successful applications, limited dwelling characteristics, information on auditing and inspections, and the number and nature of complaints received through the scheme call centre. Table 1 provides a brief summary of the data. The complaints data was connected, where available, to the retrofit(s) provided, along with any available information on the household and dwelling.

**Analysis method.** To examine the type and nature of the complaints made within the Warm Front Scheme and to address the research questions, scheme data was used to determine how many complaints were made and, from the detailed log of the complaint collected by the administrator, the nature of the complaint made. This data was then matched against details of the home to determine the type of retrofit provided, along with dates of installation and service, if carried out, and the cost of any remediation work required.

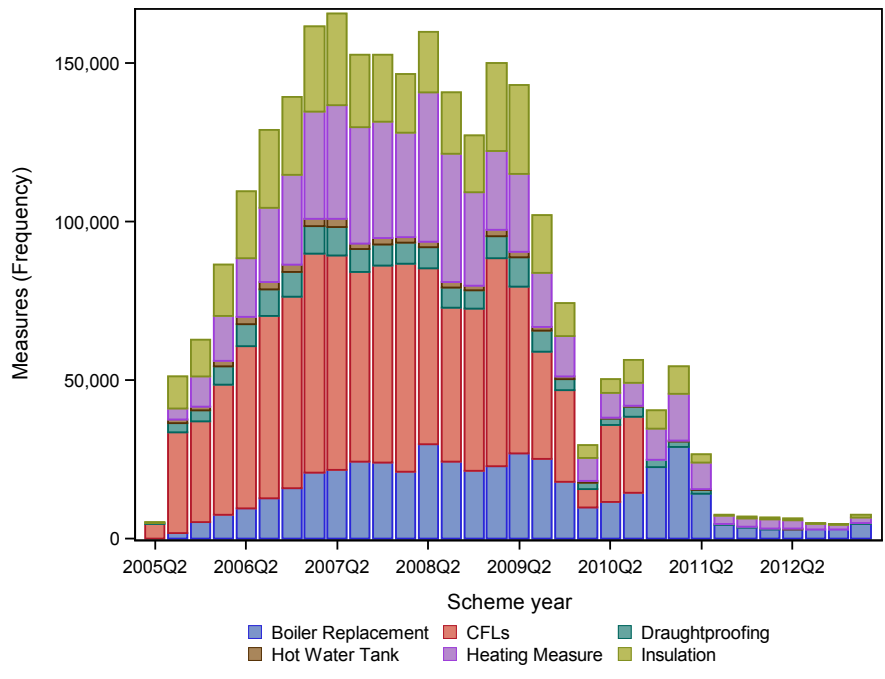
The complaints data provided by the Warm Front Scheme administrator included information on the date of a registered complaint, whether the complaint was upheld, the type of problem (e.g. regulations, installer management, aftercare) and its resolution and the date resolved. The information on the type of complaint is contained in a field call 'complaint category'. However, it contains mostly missing values (82% missing) and is in a semi-structured text format (i.e. there are not consistent categories). The subject of the complaint is contained in two fields labelled 'Aspect' and 'Problem Summary', which contain no missing values and are also in a free text format (i.e. written). The nature of the complaint was classified using the subject of the complaint. The text was imported into NVivo and a word frequency was generated for the 150 most frequent words. The selected words were visually inspected for consistency and context (i.e. how they were originally used in the text field) to ensure proper coding and a summary of the most frequent words was generated from the 'aspect category'. Using this data, a number of comparative analysis were undertaken to address the research questions posed.

**Table 1.** Warm Front Scheme Dataset Details

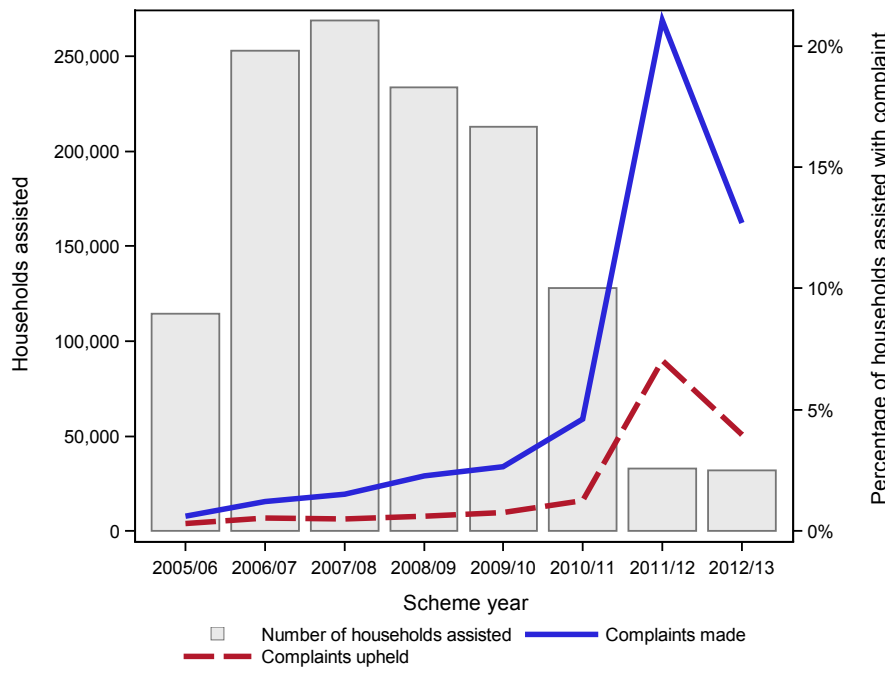
<b>Dataset</b>	<b>Level (Records)</b>	<b>Description (Selection)</b>
Installers	Installers (N= 1,218)	Information on installers (i.e. companies), including: name, number of retrofits installed, and total value of work.
Inspections	Household (N= 558,793)	Information on inspections, including: inspectors, 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.
Retrofits	Retrofit level (N= 9,937,130)	Details on each retrofit, service or administrative feature for a dwelling, including: type of retrofit installed, service provided and administration offered.
Hard to treat & 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.

## Results

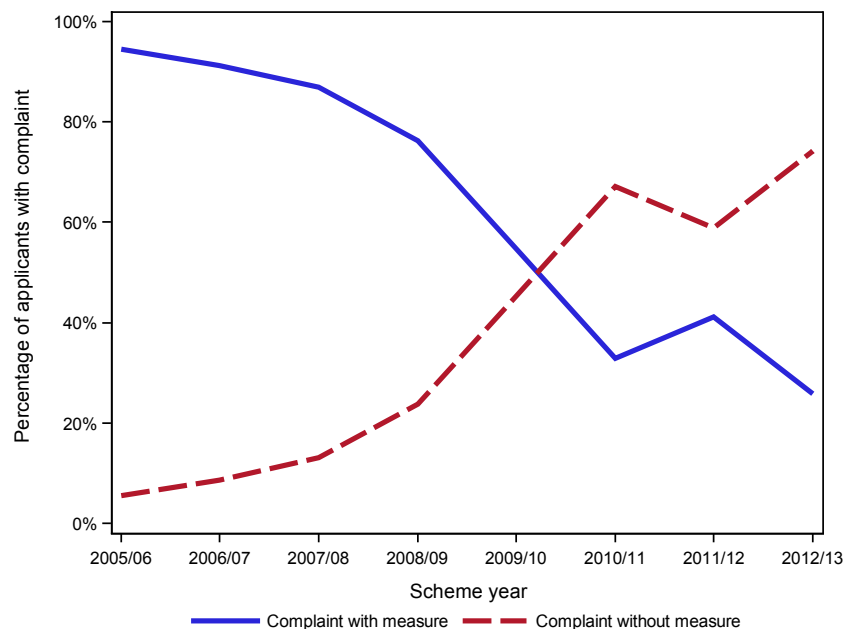
During the evaluation period, just over 1.5 million households were assisted with a retrofit (see Figure 1). Using the call centre database, the analysis showed that the number of complaints in relation to the number of retrofits installed increased over the course of the scheme, and increased quite a lot in the final two years of the scheme (see Figure 2). The increase was thought (as describe in the exploratory interviews, see DECC 2014) in part to be both the result of the increase in complex and major retrofits. In the latter part of the scheme there was an increased focus on complex retrofits such as gas boiler replacements and heating repairs, and the removal of retrofits such as compact florescent light bulbs (CFLs), from the selection of retrofits provided under the WFS. Also, towards the end of the scheme there was a tightening of the eligibility criteria which led to an increased proportion of applications that were turned down, which also coincided with an increase in complaints likely related to unsuccessful applications (see Figure 3).



**Figure 1.** Total number of retrofits installed over the evaluation period



**Figure 2.** Number of complaints made as a proportion of households assisted



**Figure 3.** Complaints made by successful and unsuccessful applicants to the scheme

### Nature of complaint.

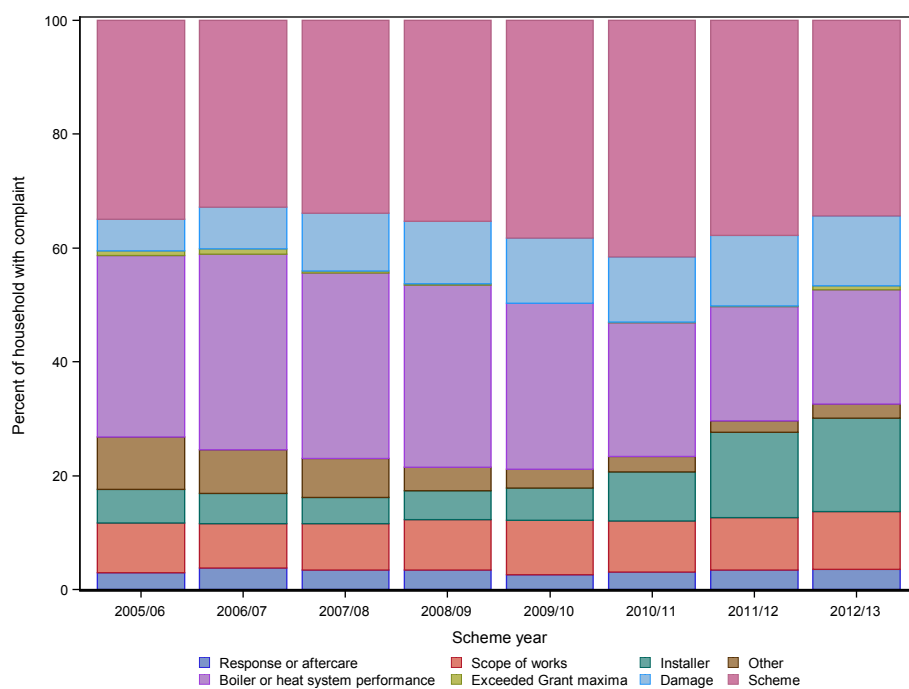
Complaints tended to focus on issues with gas boiler replacements and heating repairs, which comprised some of the more disruptive retrofits provided under the WFS. A summary variable of the complaint ‘aspect category’ was generated from grouped together similar words and complaint features, comprising 30 categories (Table 2). The largest single complaint was related to boilers or heating system performance. Figure 5 shows the same data but with a further summarised aspect category by type of retrofit, which shows that complaints around boilers tended towards aspects of performance and ‘scheme’<sup>5</sup>. Figure 6 shows that the proportion of complaints related to boilers reduced towards the end of the scheme, while complaints related to response or aftercare increased.

**Table 2.** Complaint aspect category frequency

Aspect Category	Frequency	Percent
<i>Aftercare</i>	686	1.44
<i>Allocation of retrofit</i>	329	0.69
<i>Appointment missed or cancelled</i>	2,182	4.58
<i>Asbestos</i>	95	0.2
<i>Boiler or system performance</i>	12,846	26.96
<i>Boiler performance</i>	43	0.09
<i>Concerns not captured</i>	210	0.44
<i>Contribution</i>	162	0.34
<i>Damage or mess to home or belongings</i>	4,874	10.23
<i>E-bid</i>	424	0.89
<i>Exceeded grant maxima</i>	2,368	4.97
<i>Inspections</i>	133	0.28
<i>Installer conduct</i>	858	1.8
<i>Insulation</i>	148	0.31

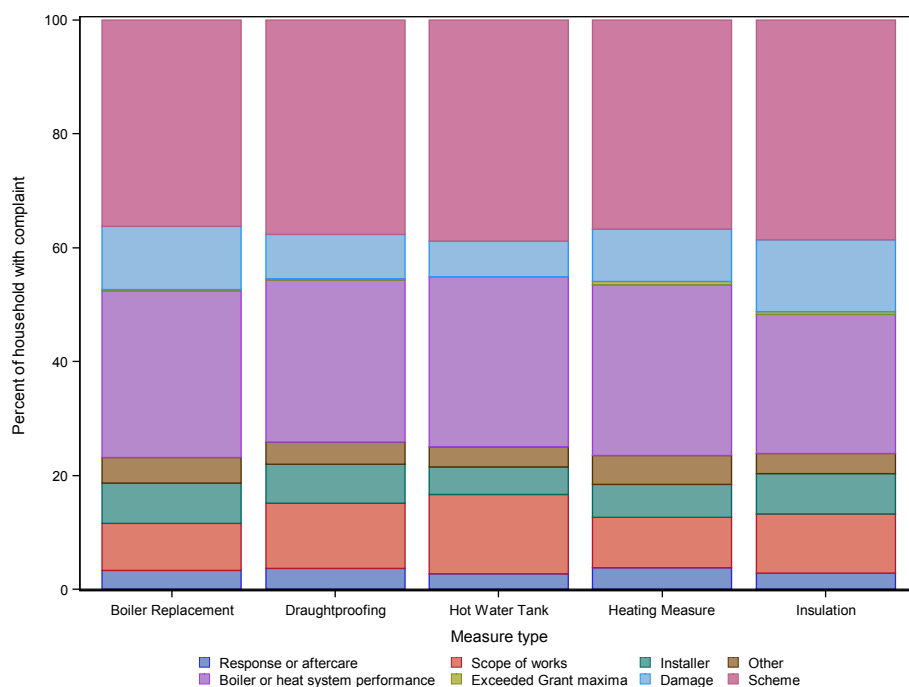
<sup>5</sup> Scheme denotes complaints related to: response time, surveys, electronic bidding, scheme closure, and inspections within the complaint aspect category.

<i>Leaks</i>	1,120	2.35
<i>No heat or hot water</i>	758	1.59
<i>Not covered by guarantee</i>	710	1.49
<i>Not eligible for grant</i>	1,482	3.11
<i>Other</i>	1,182	2.48
<i>Quality of advice</i>	2,573	5.4
<i>Remedial works required</i>	2,406	5.05
<i>Resolution unsatisfactory</i>	615	1.29
<i>Response time</i>	1,406	2.95
<i>Safety</i>	105	0.22
<i>Scheme Closure</i>	362	0.76
<i>Scope of works</i>	4,102	8.61
<i>Survey</i>	529	1.11
<i>Timescales</i>	4,317	9.06
<i>Workmanship</i>	629	1.32
<i>All</i>	47,647	100



**Figure 4.** Percentage of complaints by summarized aspect category per year





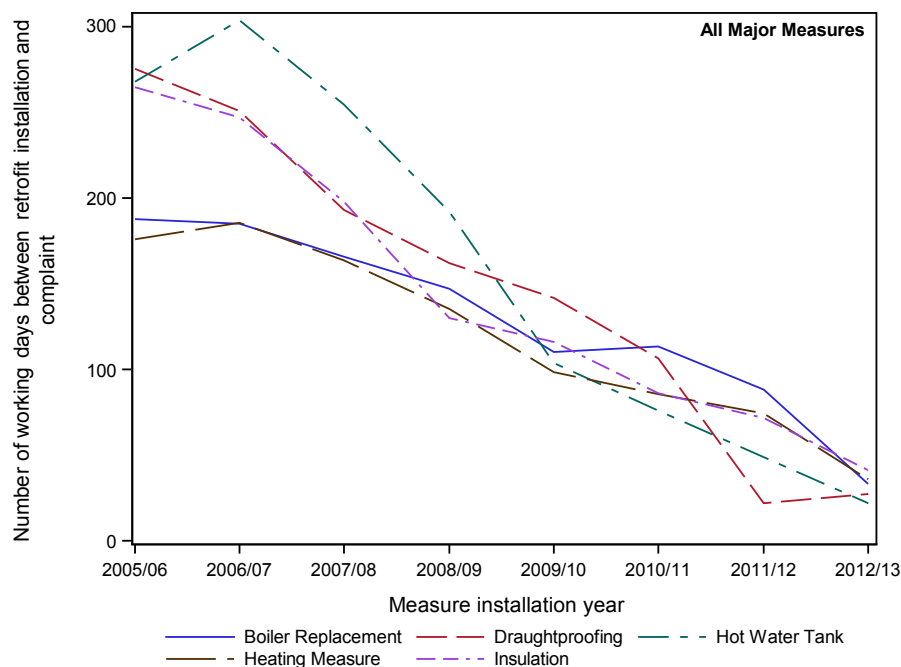
**Figure 5.** Percentage of complaints by summarized aspect category by retrofit type

### Complaints over time

Using data on the date of the installed retrofit and the date of a registered complaint. Figure 6 shows the change in length of time between an energy efficiency retrofit and a complaint made over the course of the scheme period, 2005/06 to 2012/13. Table 3 shows that the mean length of time between the installation and a complaint across all retrofit types was 156 days, which varied by type of retrofit. Those retrofit that can be considered as being most ‘interactive’ with the user and also more regularly used have the fewest days between the installation and a complaint with 143 and 148 days for boilers and heating retrofits respectively. Draught-proofing and insulation had the next longest period between installations and complaints. It is not clear what drives the change in the length of time between a retrofit and complaint as the scheme progresses; however, anecdotal evidence from the survey (not included here) suggests that this could be related to the quality of the installation in the latter part of the scheme (DECC, 2014a).

**Table 3.** Summary statistics for the length of time between an energy efficiency installation and complaint

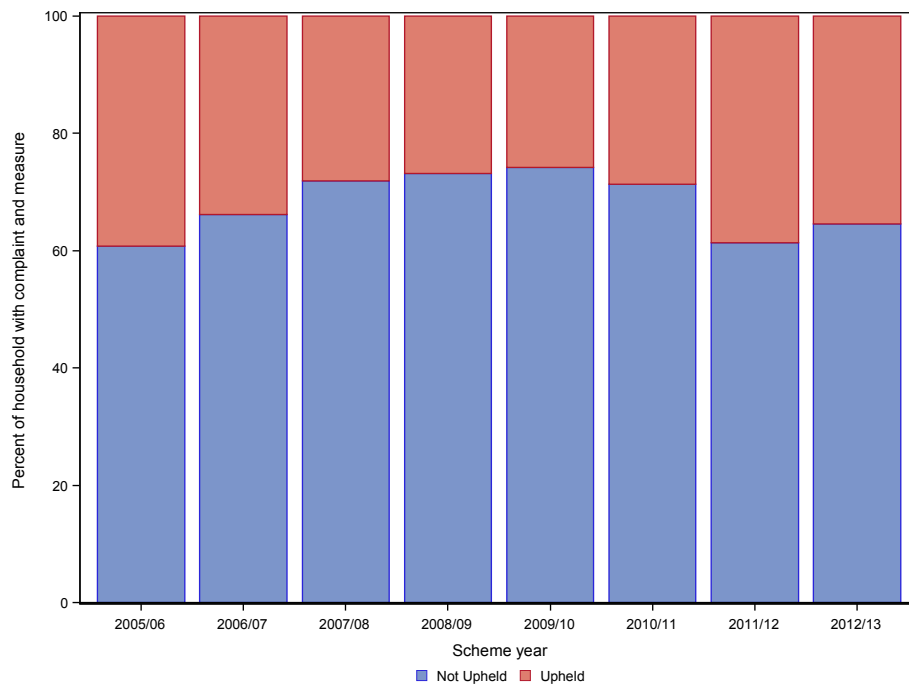
Retrofit type	Number of working days between retrofit installation and complaint			
	N	Median	Mean	Std Dev
<i>Boiler Replacement</i>	3056	102	143	136
<i>Draught-proofing</i>	348	181	196	152
<i>Hot Water Tank</i>	144	200	234	189
<i>Heating Retrofit</i>	3360	99	148	144
<i>Insulation</i>	1308	130	185	167
<i>All</i>	8216	108	156	147



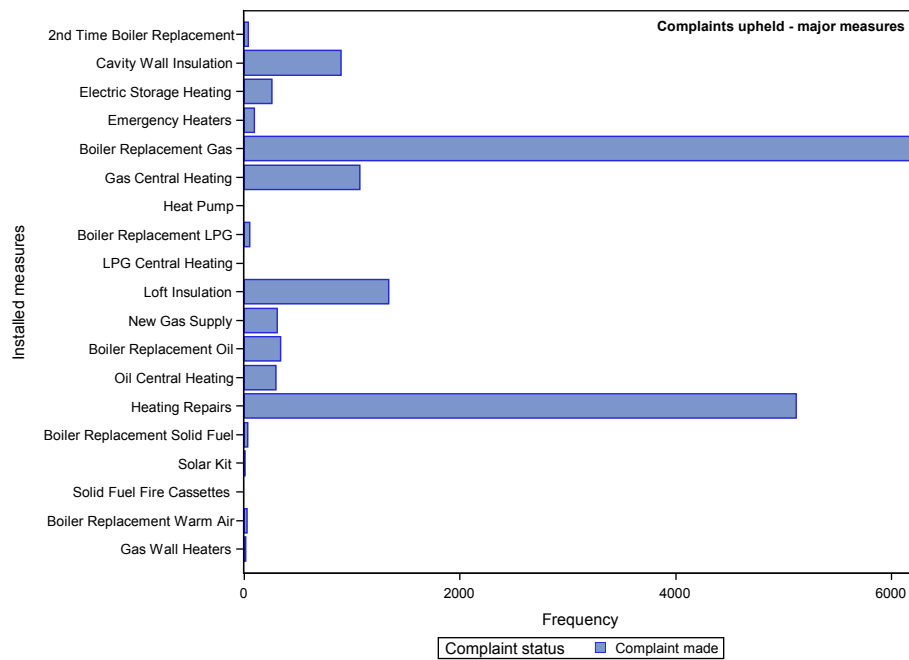
**Figure 6.** Mean number of working days between installation and complaint per year for all retrofits

### Dealing with complaints.

The percentage of complaints upheld is on average 32% across the scheme years. The latter years 2011/12 and 2012/13 show an increase from 26% in 2010/11 to 38% and 33% respectively. Figure 7 shows these percentages over the study period. Figure 8 shows the frequency of complaints made and upheld by major retrofits. The most frequent complaints upheld relate to gas boilers, heating repairs and loft insulation, of which gas and heating were the most frequently installed retrofits (see Figure 4). It is not clear what the criteria for complaints being upheld is. Figure 9 shows upheld complaints as a percentage of the type of retrofits installed by year. The majority of complaints made across the scheme years are related to boiler and heating retrofits, which were the most numerous types of retrofits installed and also have a higher degree of interaction requirements from the household (e.g. control settings).

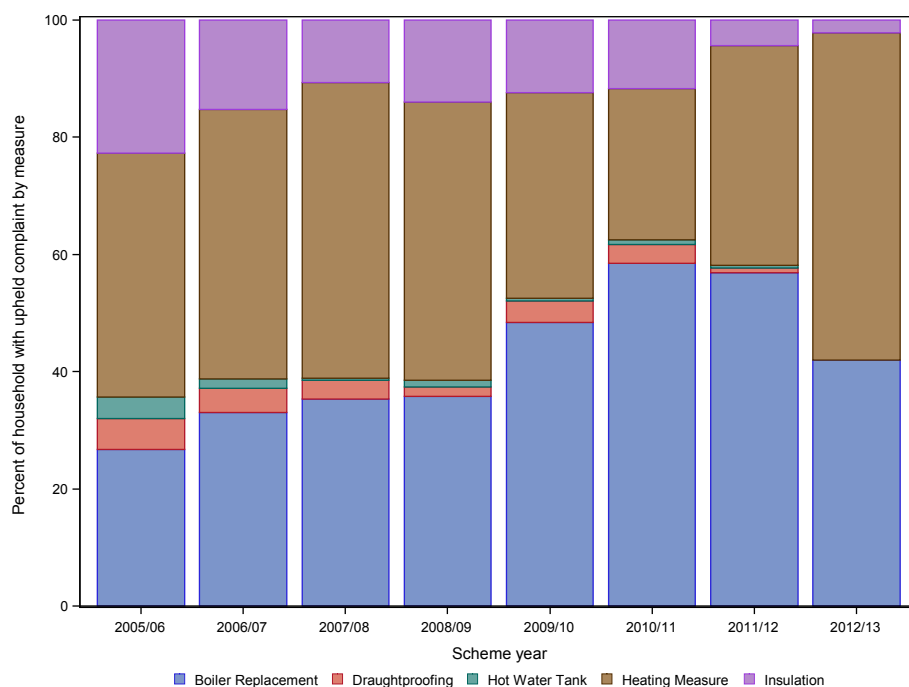


**Figure 7.** Proportion of complaints upheld and not upheld by year



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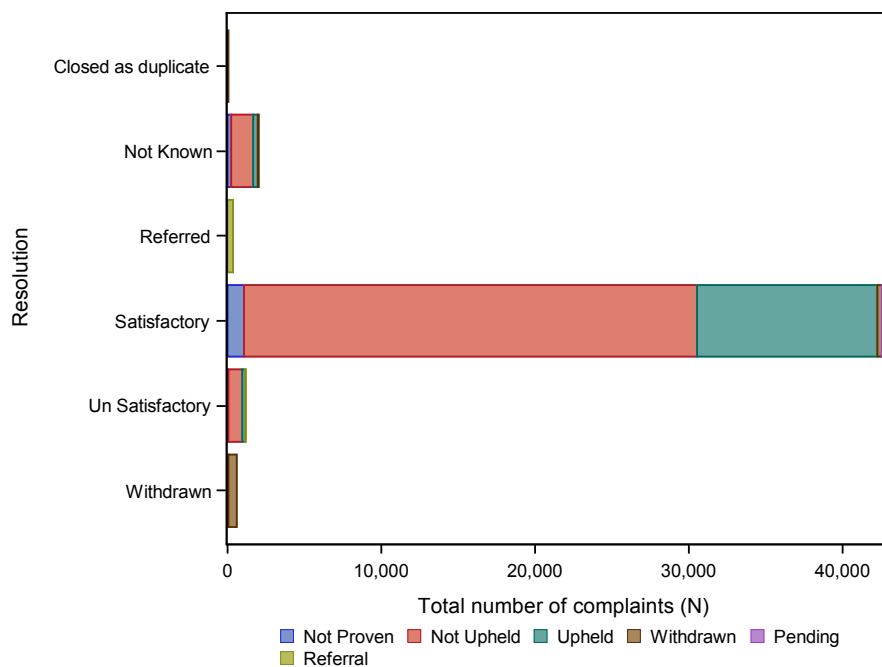
**Figure 8.** Frequency of upheld complaints by major retrofit



**Figure 9.** Percentage of upheld complaints by type of retrofit by year

The scheme administrator classified complaints as: ‘referred,’ ‘satisfactory,’ ‘unsatisfactory,’ or ‘withdrawn’. There was no description for what fell within these categories, however, Figure 10 shows how complaints were resolved. The analysis shows that a large majority of complaints were classified as ‘satisfactorily resolved’. However, within the related qualitative research, interviews found that in a number of cases, applicants did not feel that their complaints had been satisfactorily resolved<sup>6</sup>. The interviews found that advice was inconsistent in dealing with complaints. For example, some customers were told that faults could not be addressed because the installation had already been signed off or that the warranty had elapsed. Others reported that customer service staff could be rude, unsympathetic, unpleasant or unhelpful. Also, there was a perception among customers that because they were getting support for free that they should not be complaining.

<sup>6</sup> The interviews were conducted under non-attributable anonymity and therefore the resolution status of those customers interviewed was not determined from the collected call centre data.



**Figure 10.** Complaint resolution by final complaint status

## Discussion

From the qualitative surveys (DECC, 2014a), customers who were satisfied with the Warm Front Scheme spoke about the efficiency and speed of the process, which suggests that many households had an overall positive experience of the application, assessment, installation and aftercare. Many households spoke of how the efficiency retrofits addressed an unmet heating need, offered relief against concerns of fuel bill payments, provided improvements in comfort, and for some wellbeing.

Yet, there were still a number of customers (~4% of total assisted household during the evaluation period) that experienced problems with their journey through the WFS. Using the database of complaints collected by the call centre, the nature, content and issue, and the resolution of the complaint were examined. For households that received a retrofit the complaints were also connected to the energy efficiency retrofits received along with the timing of the complaints. The findings show that while most installations and retrofits were trouble-free, a substantial minority of customers experienced problems with their installation. The number of complaints in relation to the number of retrofits installed under the scheme increased over the course of the scheme, and was particularly high in the final two years of the scheme. This appears to be, in part, a result of the increase in complex and major retrofits, but also to be due to complaints from unsuccessful applicants, following tightening of the eligibility criteria. The nature of the complaints ranged from the application process, interaction with the assessor and installer, concerns about timing of delivery, complicated systems with little assistance, mess or damage done to the property, and at times a lack of empathy regarding their concerns. There were also households who were unsatisfied with their being ineligible for the WFS, which likely reflects both an unmet need and changes in the eligibility criteria through the scheme

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 retrofits, were particularly disappointed. Other areas of dissatisfaction amongst applicants focused around poor communication during wait times, and faults arising with what had been installed.

Complaints are an important part of understanding both the concerns and issues being faced by

customers navigating and experiencing the energy efficiency retrofit process. As with any other type of activity, governments, energy suppliers, scheme administrators and installers can all learn from how their services and products are perceived by the consumers they interact with. Whilst it is unlikely that the success or failure of a programme would rest on the experience of an individual, the sentiment and perceptions of the experience among the wider public may impact future energy efficiency schemes.

## Conclusions

This research examines an often under-reported part of retrofit programmes, i.e. the nature of the complaints related to the delivery of the programme and the retrofits, and how they were dealt with. There is a general lack of evaluation focused on the delivery of energy efficiency retrofit programmes and the feedback, both positive and negative, that are received through formal and informal mechanisms. For scheme designers and providers, understanding what aspects of the programme process are working or not is essential to ensuring a positive re-enforcement around retrofits and their uptake. We find that understanding complaints within the energy programme delivery process is an important factor that has been widely under reported.

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