



# Home Energy Pay As You Save Pilot Review

Department of Energy and Climate Change  
and the Energy Saving Trust

September 2011



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The Department of Energy and Climate Change and The Energy Saving Trust believes all the information contained in this report to be correct and true, at the time of publication, September 2011. However, this report does contain information provided by third party organisations and though we have sought to verify the information, we take no responsibility for any discrepancies that are present.

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## Executive Summary

The Pay As You Save (PAYS) pilot was announced in November 2009. The aim was to trial a range of generous financing repayment options to incentivise householders to install energy efficient and microgeneration measures in their homes. The initiative was led by the Department of Energy and Climate Change in partnership with the Department for Communities and Local Government and it was administered by the Energy Saving Trust.

Five partners, from both public and private sectors, were selected through a competitive tender process, to run pilot schemes. Each proposed and implemented pilots, with different delivery approaches, broadly based on the following key principles being offered to householders:

- ‘Pay As You Save’ funding of up to £20,000 per property for energy saving measures.
- Free energy assessment to establish and recommend suitable measures and on-going advice to help householders reduce their energy consumption.
- Repayment periods up to a maximum of 25 years.
- Zero percent interest rate.
- Optional householder contribution.
- Feed-in Tariff (FIT) benefits when installing solar photovoltaic panels (solar PV panels).

The PAYS pilot differed in several respects from the current Green Deal proposals. The Green Deal is the Coalition Government’s initiative to encourage energy efficiency improvements paid for by savings from energy bills and will be available from autumn 2012. PAYS householders were able to choose packages of measures that would not pay back within their chosen repayment timeframe. Under the Green Deal only finance packages where savings are more than repayments will be eligible<sup>1</sup>. In addition, Feed-in Tariff benefits will not be included in Green Deal finance.

Although the Green Deal proposes a different financial model to that of the PAYS pilot models, the pilot still provides valuable insights into delivering financial packages to encourage energy saving installations in homes.

This report provides a review of the PAYS pilot schemes, with a focus on householder attitudes and preferences to the different delivery approaches. Its findings are based on householder survey research, supplemented with feedback and administration data from delivery partners.

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<sup>1</sup> Customers who take out a Green Deal will be able to contribute their own finance towards energy efficiency measures, although this contribution will not be included in the calculation of Green Deal finance.

The key objectives were:

- 1 To understand householder attitudes and preferences for PAYS schemes, in particular around:**
  - a) The types of pilot partners that householders would prefer to deliver such schemes and would prefer to make repayments to.
  - b) The elements of PAYS finance packages, in particular the relationship between repayments and savings.
  - c) The energy saving measures, within PAYS packages, that householders desire and take up.
  - d) How to encourage take up and overcome the barrier of high capital costs, particularly for more expensive energy efficiency and microgeneration measures.
  - e) How to market and communicate these finance packages to householders.
  
- 2 To understand the viability of different PAYS pilot schemes' delivery and finance models, with focus on:**
  - a) The different delivery approaches in delivering energy efficiency and microgeneration measures to householders' homes.
  - b) The different approaches to the home assessment and the calculations of savings and repayments.

## Householder take up

The five PAYS pilots signed up 311 households across England:

- B&Q worked in partnership with the London Borough of Sutton and BioRegional to sign up 67 homes in Sutton (B&Q/Sutton LBC).
- British Gas signed up 80 homes in Surrey and Sussex (BG).
- Birmingham City Council, supported by the West Midland Kick Start Partnership signed up 23 homes (BCC).
- Stroud District Council worked in partnership with Severn Wye Energy Agency to sign up 49 homes (Stroud/SWEA).
- Gentoo Group signed up 92 residents in their social rented housing in Sunderland (Gentoo).

In total 811 energy efficiency and microgeneration measures were installed. On average, two to three measures were installed per household, with eight measures being the maximum number of installations in any one home. The average total value of PAYS packages ranged from £4,194<sup>2</sup> in the Gentoo pilot to £13,217 in the B&Q/Sutton LBC pilot. Over 70% of householders

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<sup>2</sup> Gentoo year 1 package average.

chose finance package options that had long repayment periods of 25 years, so making monthly repayments more manageable.

Double glazing was the most popular measure with 154 householders choosing to install the measure. Solar PV panels were the second most popular measure with 131 householders installing the technology in their homes. External solid wall insulation was the joint-fifth most popular measure, alongside draft proofing, with 72 installations of each being installed in homes.

This review is based on research collected from householders, partners and installers involved in the PAYS pilot. The majority of the research focused on the householder experience. Over the course of the pilot, a sample of 182 individual householders, of the 311 householders signed-up to PAYS schemes, were interviewed to gather feedback around their attitudes, perspectives and experiences of the PAYS pilot. Therefore, in most cases householders were interviewed after the installation of energy saving measures in their homes, to enable the collection of information on the whole householder experience.

Data collection was split over three phases. Of the 182 individuals interviewed, 136 were interviewed through a quantitative telephone survey in phase 2 and 3. Therefore, the majority of statistics and charts in this report are based upon responses from this quantitative survey. The householders interviewed in phase 1 were interviewed through a similar, but semi-structured, survey, to inform the quantitative survey of phase 2 and 3.

A different approach was taken to capture the experiences of the Gentoo householders. Their householder journey was quite different to other householder journeys (from the four other pilots) and researchers encountered difficulties when surveying older Gentoo residents using a structured questionnaire over the telephone. Therefore, 29 of the 34 householders were interviewed face-to-face or through focus groups using another similar, but more open ended, survey.

In addition to the main survey, a further 46 in-depth qualitative interviews were carried out with householders at different stages of the pilot. These were designed to gather detailed information around particular topic areas, such as, householders' decisions to install more costly measures like solid wall insulation. Interviews were also conducted with a sample of 43 householders who ceased to participate in the pilot schemes, to find out why they stopped participating.

The partners delivering the pilot schemes – and some of the installers involved in the pilot – were interviewed, at different stages of the pilot, to gather lessons around the management and administration of the pilots.

## Householder profile

Findings from the quantitative and semi-structured surveys of householders suggested that the majority of PAYS householders were fairly environmentally engaged. To take part in the pilot<sup>3</sup>, householders had to apply online or by telephone, thereby opting themselves into the process. Therefore, it may be that householders who were already engaged in energy saving behaviour were the first to hear about the pilot and apply. The householder survey also showed that a large number of householders were already carrying out some form of energy efficient behaviour and were also sufficiently aware of additional actions they could be taking. Many participant householders were 'early adopters' (i.e. those who had already installed basic insulation measures, such as cavity wall, loft insulation and draught proofing) and used PAYS to help them invest in advanced energy saving measures, such as solid wall insulation and solar PV panels. PAYS, therefore, in many cases enabled those already engaged with home energy saving to take additional desired action.

## Householder motivations

The householder survey revealed that, for most householders, potential financial savings was the key motivation to taking energy saving action in the home. The low monthly repayments, long repayment periods, zero per cent interest and additional benefits such as the availability of FITs, were the most commonly cited reasons stated for joining the scheme. As well as saving money, some householders wanted to make their homes warm and cosy; others wanted to be 'greener' and PAYS enabled them to take action and save money.

Though many packages disclosed from the outset that repayments would be higher than estimated energy bill savings, many householders still proceeded to take up a PAYS package. The Stroud/SWEA pilot demonstrated that householders were willing to make their own financial contribution. Twenty nine householders made a contribution to their package, at an average of £2,638.13, ranging from £17.17 to £10,928.01. The Gentoo pilot showed that householders in the social rented sector were willing to have energy efficiency improvements installed in their homes and to take on a small charge for the installations.

Householders did not seem to be rigorously verifying the predicted saving calculations provided by the home assessments. Over half of householders had not attempted to verify the predicted savings, by even a basic means of assessment. However, the majority of householders were confident that the predicted savings and repayments they had been provided with would be achieved. Many who had not sought verification of the savings reported that they were confident that they would save something, especially with energy prices forecast to go up, and they viewed PAYS as an attractive financial opportunity. Although bill savings were cited as an important motivation to sign-up to PAYS, upon the installation of energy saving measures householders did not seem concerned with checking that their bills were showing savings. This may be because householders were already confident that they could afford the monthly repayments, agreed in the contract with the delivery partner. This finding is also supported by evidence from householders suggesting that when they were deciding on their financial

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<sup>3</sup> Gentoo householders were recruited mainly through a door to door promotional approach.

package, they tended to think more about the affordability of the monthly repayments rather than the total package cost.

Assessing the savings and benefits of PAYS schemes to householders was not an aim of this review. At the time, it was too early to observe actual financial and comfort impacts in homes as a result of installations, from meter or energy bill readings, as most households had not lived with their installations for long enough to allow a comprehensive assessment of the impacts. The pilot partners were all allowed to apply different methods for modelling savings for householders, therefore, the predicted savings provided to householders were not comparable across pilots and very different in some cases.

### **The influence of the assessment**

All PAYS householders received home energy assessments, but these differed between the pilots. Despite the different approaches taken by partners to deliver the household energy assessments, the householders across all pilots reported similar levels of satisfaction. Householders recognised the key benefit of the assessment to be providing authoritative guidance on the measures they should install. The findings demonstrated that the assessment could have a positive impact in influencing householder choice – particularly if they had intended to install measures not appropriate for the property – and helping to reassure them (through sharing calculations) that they would see some bill savings.

85% of PAYS householders interviewed had an idea of what measures they wanted to install before the assessment; in almost half of the cases the assessment influenced them to change their minds over some of the measures. Householders also reported that being able to see and touch more examples of different types of technology in homes similar to theirs would have helped the decision-making process.

### **Delivery lessons**

The majority of householders surveyed reported that they welcomed the delivery partner taking responsibility for the PAYS process, but still wished to be kept regularly informed and to have the final say at all decision stages. Based on questions in the householder survey around preferences for different partners delivering the PAYS schemes, householders did not seem to have a particular preference for a type of partner to deliver the pilot. The key attributes of delivery partners, valued most of all by householders, were impartiality, security and energy expertise.

Converting consumers to become 'signed-up' householders took time and effort. Partners highlighted the importance of a robust screening process to gauge eligibility and commitment to reduce drop out. The partners interviewed reported that they invested more time and effort than originally anticipated into customer care, setting up the PAYS agreement and managing the energy saving installations. Partners estimated that to provide an adequate level of advice, support and hand-holding to take householders through their journey, to the point at which they installed energy saving measures, it could take up to two to three days per household.

Partners felt that they managed expectations very carefully. The vast majority of householders, as a result of this, reported that they were satisfied with the pilot process. Householders cited timely, convenient and minimal numbers of household energy assessments as important factors. Individuals were happy to tolerate short-term disruption to get quick installations rather than installing measures over a longer period. The quality of service was also an important factor for householders, including the assessment, recommendations and the quality of installation. Delivery partners felt that the energy assessors (advisors) working on the pilot required an advanced level of experience and knowledge in order to provide detailed advice on energy efficiency and microgeneration measures, as well as basic financial advice.

Partners also highlighted other areas that were resource intensive such as properties requiring bespoke solutions, coordinating the site works, addressing various installation issues and general 'making good'. Often several versions of the repayment schedule had to be produced by partners for householders while they were still making their decisions on which mix of measures to include in their final package.

## Conclusions

These findings provide valuable insights into delivering finance packages for energy saving measures of the proposed Green Deal.

The findings presented in this review, across all five pilots, have provided a wealth of insight into how the different delivery approaches have driven householders to sign up to different PAYS financial packages and install a variety of energy saving measures. Each pilot was a success in its own right, and each pilot has shown that despite the challenges, innovative solutions can be identified to overcome many of the barriers associated with delivering energy saving measures into homes.

## 1. Introduction

In autumn 2009, the Energy Saving Trust was appointed by the Department of Energy and Climate Change to manage the £4million Home Energy Pay As You Save pilot.

The Home Energy Pay As You Save scheme gave households the opportunity to benefit from energy efficiency and microgeneration technologies, such as solid wall insulation and solar photovoltaic panels (solar PV panels), in their homes with no upfront costs. It enabled householders to reduce their energy bills and reduce their household CO<sub>2</sub> emissions.

The Pay As You Save (PAYS) concept is a financial model to help householders pay for energy efficiency improvements and microgeneration installations, enabling householders to overcome one of the perceived barriers – that of the upfront capital cost. The costs of refurbishment for a property are spread over a substantial length of time, where the repayments are less than the predicted savings made from installing measures<sup>4</sup>. PAYS householders in many pilots had the choice, upfront, of installing measures that would not pay back within their chosen repayment timeframe. Figure 1 illustrates the delivery mechanism.

In late 2009, the Energy Saving Trust ran a competitive application process to identify partner organisations to take on the delivery of the pilots. As a result, five partner organisations<sup>5</sup> were selected to deliver the PAYS pilot projects. The pilots were chosen for their different approaches to delivering schemes, so that lessons could be learnt about the effectiveness of different delivery models, financial mechanisms and householder attitudes and preferences for the different models. The pilots were delivered by the five partners from November 2009 to July 2011.

By the end of the pilot, the scheme had successfully signed up and delivered energy saving measures into a total of 311 homes across England.

- B&Q worked in partnership with the London Borough of Sutton and BioRegional to sign up 67 homes in Sutton (B&Q/Sutton LBC)
- British Gas signed up 80 homes in Surrey and Sussex (BG).
- Birmingham City Council, supported by the West Midland Kick Start Partnership signed up 23 homes (BCC).
- Stroud District Council worked in partnership with Severn Wye Energy Agency to sign up 49 homes (Stroud/SWEA).
- Gentoo Group signed up 92 tenants in their social rented housing in Sunderland (Gentoo).

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<sup>4</sup> The concept links the repayment charge to the property, not the person. This was not able to be tested at the time of the pilot due to legislation.

<sup>5</sup> From here on in they are referred to as 'partners'.

The PAYS pilot and this review aimed to better understand householder attitudes and preferences for elements of the PAYS model, and to learn lessons from a number of different finance delivery models, in a limited number of homes across England. The pilot review ran from January 2011 to July 2011.

The diagram below illustrates how the PAYS mechanism worked during the pilot.

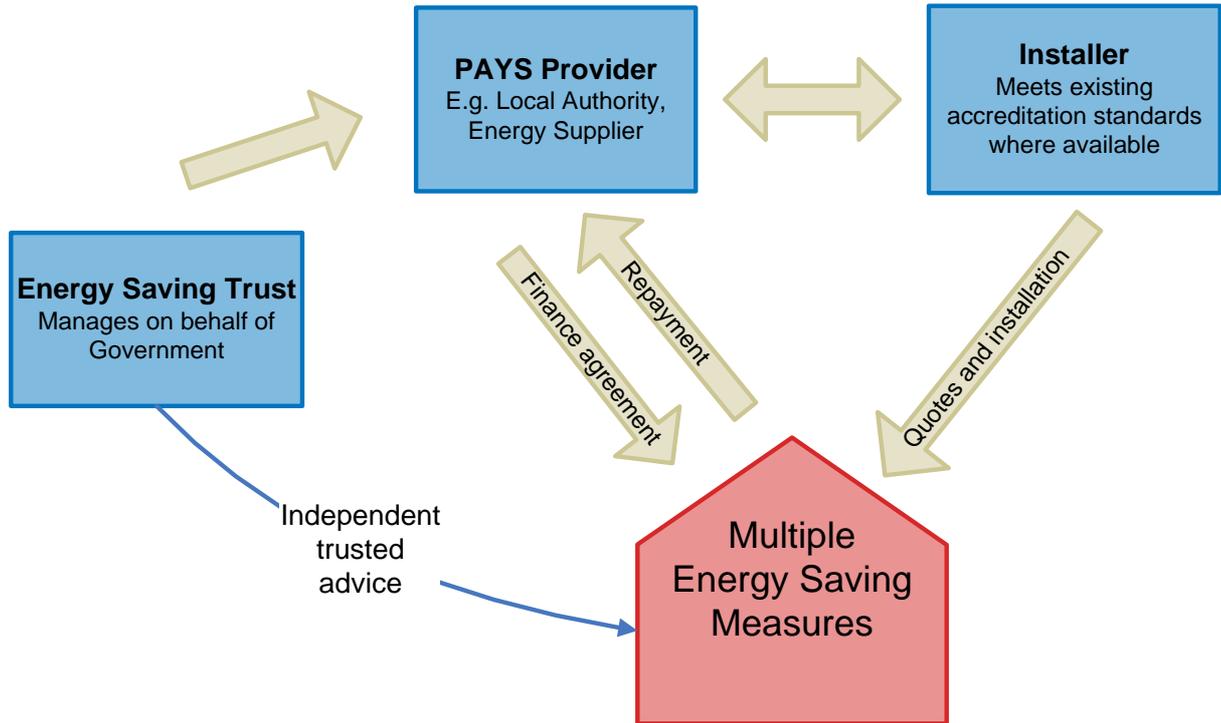


Figure 1 - PAYS pilot delivery mechanism (Source: PAYS partner application pack, November 2009)

The pilot was managed by a team at the Energy Saving Trust (EST), with input and advice from an Advisory Board and management on key decisions from a Project Steering Board. The Advisory Board was made up of key external stakeholders including Consumer Focus, Energy Retail Association, Knauf Insulation and the National Insulation Association. The Project Steering Board consisted of Energy Saving Trust, the Department of Energy and Climate Change and the Department for Communities and Local Government.

### 1.1 Partners and pilots

The section below outlines the different delivery approaches across the pilots.

Partner (Partner abbreviation)	Area	Original target <sup>6</sup> no.of homes	Pilot Description
B&Q UK and London Borough of Sutton (B&Q/Sutton LBC)	Sutton	100	B&Q UK led a PAYS project in partnership with the London Borough of Sutton and the Bioregional Development Group (BDG). To deliver the project B&Q UK developed training for Eco Advisors and introduced a 'Shop Within A Shop' at their branches in Sutton and New Malden. Homeowners were allocated a project manager to help them through the entire process. London Borough of Sutton managed the repayment process and Bioregional provided additional support on training and evaluation.
British Gas (BG)	Surrey & Sussex	100	British Gas provided a holistic approach to householders, to manage all aspects of the PAYS product from customer acquisition to installation of the measures. This project aimed to test the energy supplier billing route.
Birmingham city council (BCC)	Birmingham	160	The Birmingham PAYS pilot formed part of the wider multi-million-pound programme, called Birmingham Energy Savings Scheme, to deliver energy efficiency and microgeneration to thousands of homes across Birmingham. Birmingham City Council project managed the assessment process and installation of measures. A third party, West Midland Kick Start Partnership, provided the loan administration and financial advice services through its contractors Street UK.

<sup>6</sup> Target number of homes refers to the number the delivery partner originally proposed to achieved within their tender bid for PAYS funds. The actual number of homes installations were delivered to is outlines in Table 8, [Section 3.1](#).

Stroud District Council /Severn Wye Energy Agency (Stroud/SWEA)	Stroud	50	Stroud/SWEA delivered their PAYS project as part of the wider programme of carbon reductions across Stroud called 'Target 2050'. Stroud District Council managed the repayment process; SWEA managed the installation process throughout and provided advice/hand-holding.
Gentoo Group Ltd (Gentoo)	Sunderland	100	Gentoo Group is a registered social landlord in the North East. They tested PAYS as a financial model within social housing working on a mixture of void and occupied properties. Gentoo managed and delivered all aspects of the pilot from engagement to delivery through various internal departments, Gentoo Green, Gentoo Construction and Gentoo Sunderland.

Table 1 - PAYS partner and pilot summary

## 1.2 The PAYS financial offer

At the start of the pilot, each pilot partner bid in for a portion of the overall £4million of capital funds available for the pilot. This funding was provided by the Department of Energy and Climate Change and managed and distributed by the Energy Saving Trust. Each partner was allocated a share of the available funds, based on the number of households they aimed to target and deliver PAYS installations to, outlined in their tender bids (see Table 1, [Section 1.1](#)). This number of homes targeted was not necessarily the number of homes PAYS energy saving measures were delivered to in the end. Funding covered only the capital cost of measures; partners had to contribute pilot delivery costs.

The pilot partners' financial offers were based around key principles – listed below - being offered to householders. These were set by the Department of Energy and Climate Change and the Energy Saving Trust at the beginning of the pilot. These included:

- Upfront capital funds of up to £20,000 available per PAYS householder/participant: In setting up the PAYS pilot an average value of £10,000 per customer was envisaged, with a cap of £20,000.
- Repayment periods were set between 10 years and 25 years, with flexibility built-in.
- Zero interest attached to repayment packages.
- Optional householder contribution
- Feed-in Tariff (FIT) benefits were allowed to be included into the calculations of the savings and repayments where solar PV had been installed conforming to guidelines.

The partners were able to customise their offers, within reason. The table below summarises the pilot partners' offers.

Partner	Packages offered
B&Q/Sutton LBC	<p>B&amp;Q was the front face of the pilot, managing and running the delivery. Sutton London Borough Council managed the finance side; providing up to £20,000 per household, though there were exceptions which exceeded this amount.</p> <p>The B&amp;Q/Sutton LBC pilot was the only pilot that included a subsidy of 40% to encourage uptake on all measures. The subsidy enabled householders to get better measure package deals. The subsidy did not have to be paid back by the householder.</p> <p>Sutton London Borough Council chose to register the charge on the land registry to provide security. As a result, a small fee was incurred to set this up, which the customer had to pay.</p> <p>Length of package options: 10 or 25 years</p>
British Gas (BG)	<p>British Gas managed both the finance side and the delivery side of the pilot.</p> <p>Finance of up to £20,000 was offered; the finance offer was treated as a non-secure personal loan.</p> <p>The offer was open to British Gas and non-British Gas customers.</p> <p>BG realised that to make the packages fit with the PAYS concept, solar PV would have to be a leading measure. Five PV options were offered to the householder depending on the size of the PV panel installed and related energy savings. These options were chosen based on the previous knowledge and expertise of BG. However, householder demand during implementation led to an additional 2 options being offered; both 6 panelled units 1.75 &amp; 2.1 kWp.</p> <p>Length of package options: 10 or 25 years</p>
Birmingham City Council (BCC)	<p>Birmingham City Council managed the pilot and was supported by the third party finance provider West Midland Kick Start Partnership. Birmingham also provided access to loan administration and financial advice services through Kick Start contractor Street UK before the loan was offered.</p> <p>Finance of up to £20,000 was offered. The finance offer was treated as a non-secure personal loan.</p> <p>Length of package options: 10 or 25 years. A limited number of packages of lengths between 10 and 25 years were also offered.</p>

<p>Stroud/SWEA</p>	<p>The partnership between Stroud District Council and SWEA saw SWEA deliver the energy saving expertise and Stroud District Council deliver the finance element. It was the only project to impose a lower cap of £10,000, as they felt this would help the money to go further and would encourage customers to make a contribution to their own packages if they desired packages over the £10,000 cap.</p> <p>Length of package: PAYS finance up to £10,000 to be repaid in up to 25 years. SWEA realised that it was difficult to ensure repayments were less than the savings from the installed measures, particularly with no subsidy other than the Feed-in Tariff for microgeneration. Therefore, they offered options to householders that allowed repayments to be more than the savings. They also offered a variety of options of differing repayment lengths between 5 and 25 years.</p> <p>Stroud District Council, as a local authority dealing with the financial side, chose to register the charge on the land registry to provide security. As part of the financial offer approval process, Stroud/SWEA required proof from householders that they had obtained approval for the PAYS charge from their mortgage provider. In most cases this was approved without any problems. However, three customers had to pay a small fee of £30 and one customer was declined permission.</p>
<p>Gentoo</p>	<p>Gentoo managed the whole process for their tenants. Gentoo calculated a weekly charge ensuring this was less than the predicted savings. However they did not communicate the total cost of measures to tenants. A variation to the tenancy agreement was issued to include an additional energy efficiency charge. The tenant, therefore, had to agree to this additional charge and was given a two week cooling-off period, between preliminary and final agreements to do so. The need for an agreement prior to the works did cause some problems. As in the first year of the pilot it was not easy to establish what the end financial charge would be, prior to the measures being installed. This was due to difficulties in separating costs of works for the PAYS properties from the Gentoo wider modernisation programme. As a result Gentoo did have to reissue tenancy variations. In the second year (year 2) of the pilot, the sign-up process was revised to resolve this issue.</p> <p>Two different packages were offered to householders, a different one in each of the financial years the pilot was delivered over (phase 1; 2009-10 and phase 2; 2010-11).</p> <p>Length of packages offered:</p> <ul style="list-style-type: none"> <li>- 20 years for package 1 in 1<sup>st</sup> year</li> <li>- 25 years for package 2 in 2<sup>nd</sup> year; to include external wall insulation and to offset the high cost of this measure a subsidy of up to 64% was applied. The subsidy did not have to be paid back by the householder.</li> </ul>

Table 2 - PAYS financial offer summary

## 1.3 The householder journey

A framework for the process the householders would need to go through to obtain the energy saving and microgeneration installations in their homes was set out by the Energy Saving Trust in the application form for pilot partners. The delivery partner application pack is available on request from the Energy Saving Trust. Table 3 lists out the steps in the householder process.

The partners were required to follow this common process but were also permitted to customise their delivery approach, within reason, as they saw fit to successfully deliver the desired outcome of signing up householders to the PAYS schemes. This stimulated innovative and different approaches to be developed between partners; the five pilots were chosen specifically for their different delivery proposals.

Figure 2, the pilot logic map, provides a visual representation of how the PAYS pilot is intended to work. Logic maps are tools, used during planning and reviewing of programmes, to articulate the underlying and implicit assumptions of what changes will occur during a programme intervention, such as the PAYS pilot, to achieve its intended effects. The map highlights the key actions and delivery steps that were designed to happen during the pilot, in order for the anticipated and desired changes to be achieved. Figure 2 shows a generic PAYS pilot logic map; bespoke logic maps for each pilot schemes are contained in the Appendix of this document.

<b>Stage 1 – Householder engagement</b>
The householder is made aware of the scheme via a piece of marketing, word of mouth or from a referral.
<b>Stage 2 – Application</b>
The householder makes contact with the scheme to discuss criteria and their eligibility. They will be given advice on the finance packages and the measures that may be eligible for them. If the householder is suitable, and keen, to proceed they are taken through a robust screening process to gauge eligibility and reduce dropout. The partner arranges a time with the householder for an assessment of the property.
<b>Stage 3 – Home energy assessment<sup>7</sup></b>
The project partner carries out the energy assessment of the property. The assessment is carried out and at this point the assessor discusses suitable measures with the householder. Multiple assessments of the property may be required.
<b>Stage 4 – Recommendation report</b>
The project partner provides a report to the householder; this is either at the end of the assessment or shortly after. The report details advice on: <ul style="list-style-type: none"> <li>• Eligible measures suitable for the property</li> <li>• Suitable financial packages and related savings and repayments</li> </ul>
<b>Stage 5 – Consideration</b>
The householder has a period of time to consider the report with continued access to hand-holding from the project partner for any further questions or information.
<b>Stage 6 – Decision to Contract</b>
The householder makes the decision on what measures are to be installed and what financial package they are interested in. In most cases, at least two repayment terms were offered; 10 years and 25 years.
<b>Stage 7 – Additional assessments and final costing</b>
Before the contract is finally agreed, the project partner either carries out or contracts an installer to carry out further detailed assessments, if necessary, for particular measures to ascertain if they are applicable for the property. This may require multiple assessments of the property. Then they provide final costing for the chosen measures for the householder. This includes savings and repayments.
<b>Stage 8 – Signed Contract</b>
The householder agrees the measures and financial package. The installation agreement is also finalised and the householder signs this off.
<b>Stage 9 – Installation</b>
The project partner or contracted installer carries out the agreed work.
<b>Stage 10 – Sign-off of work</b>
The householder signs off the measures and completes a customer satisfaction survey. This is then followed by a quality inspection.
<b>Stage 11 – Exit strategy and on-going support</b>
The householder receives on-going advice and support from either the partner or their local Energy Saving Trust Advice Centre.

Table 3 - Common Householder Process (customer journey)

<sup>7</sup> The term ‘home energy assessment’ is used in this review, as opposed to ‘home energy survey’ in order to not confuse the reader with the ‘householder and partner surveys’ undertaken during the research for this review, outlined in Section 2.

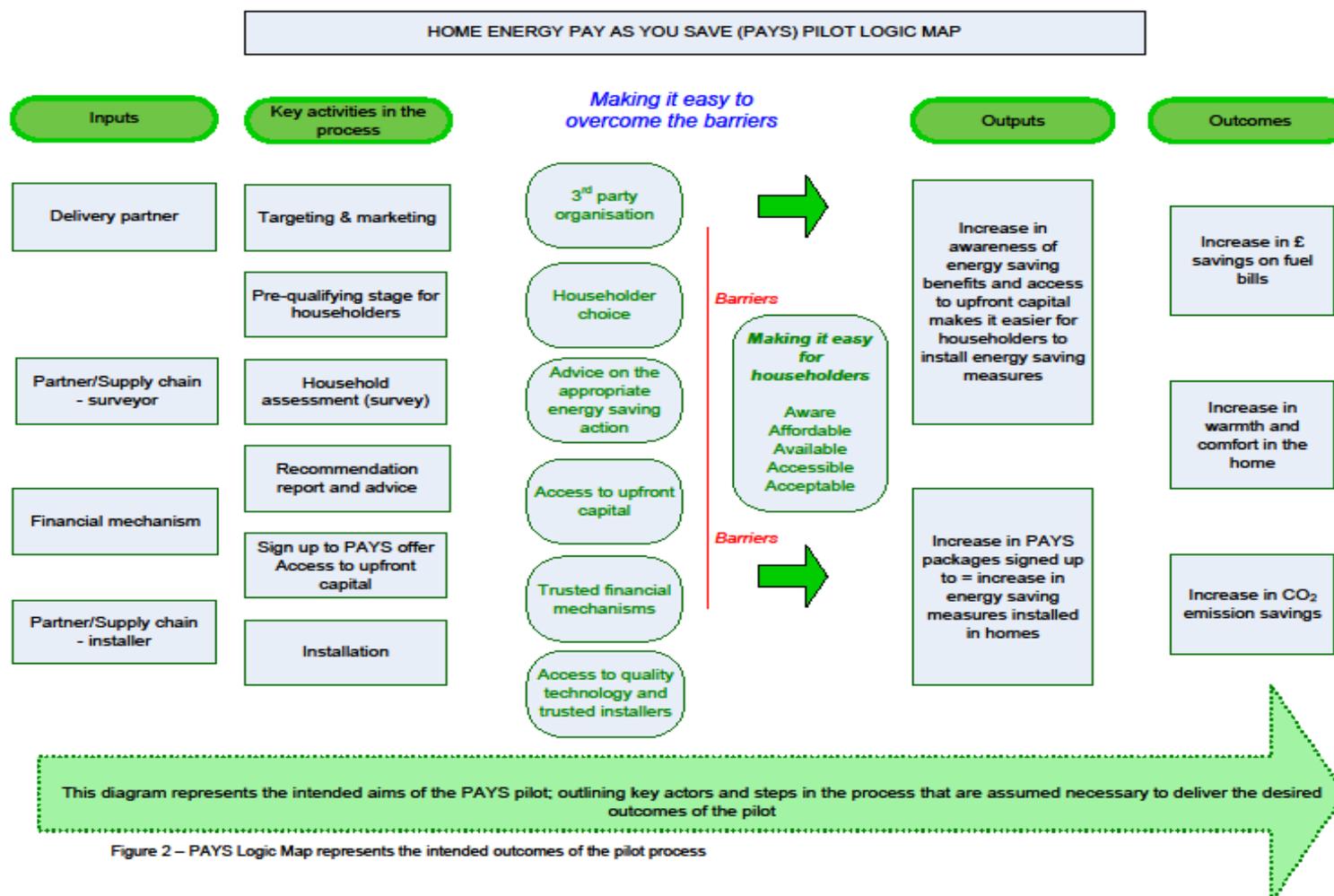


Figure 2 – PAYS Logic Map represents the intended outcomes of the pilot process

Figure 2 - PAYS Logic Map

## 2 Review scope

This review of the Home Energy Pay As You Save Pilot was undertaken to better understand householder preferences for the PAYS schemes and the different delivery approaches taken by pilot partners.

### 2.1 Review Objectives

- 1 **To understand householder attitudes and preferences for PAYS schemes, in particular around:**
  - a) The types of pilot partners that householders would prefer to deliver such schemes and would prefer to make repayments to.
  - b) The elements of PAYS finance packages, in particular the relationship between repayments and savings.
  - c) The energy saving measures, within PAYS packages, that householders desire and take up.
  - d) How to encourage take up and overcome the barrier of high capital costs, particularly for more expensive energy efficiency and microgeneration measures.
  - e) How to market and communicate these finance packages to householders.
  
- 2 **To understand the viability of different PAYS pilot schemes' delivery and finance models, with focus on:**
  - a) The different delivery approaches in delivering energy efficiency and microgeneration measures to householders' homes.
  - b) The different approaches to the home assessment and the calculations of savings and repayments.

#### 2.1.1 The PAYS review also looked to explore:

The following areas were explored, where possible:

- a) Householders' attitudes towards a whole-house / multi-measure package.
- b) The importance of various 'trigger points' in driving consumer investment decisions.
- c) The practicalities of delivering whole-house / multi-measure packages within an area, determining barriers and benefits.
- d) The capacity of local supply chains to respond to demand.
- e) The requirements for supporting the development of the market for less widely installed technologies (solid wall and microgeneration) as a precursor to increased rollout.
- f) The integration of energy efficiency measures into cyclical works and maintenance of social housing.

- g) The upgrade of individual void properties while they were empty and of properties at the point of transaction.
- h) The effectiveness of coordinating various household carbon saving funding streams.

## 2.1.2 Exclusions of the review

The PAYS pilot review was not intended to:

- Test the PAYS concept of attaching the financial charge to the property. This is because legislation at the time of the pilot did not allow this to be possible.
- Provide ex-post actual energy savings, CO<sub>2</sub> savings or financial savings from energy bills or meters after energy saving measures had been installed. This is because the review was to focus on householder preferences and learn delivery lessons from partners. It was not set up to provide householder bill data or meter readings over a number of years.
- Provide a full cost benefit analysis of the pilot. As this was a pilot review, it was not seen as necessary to undertake data collection for a cost benefit analysis. The pilot funding, provided by DECC, was for capital costs for installations. Administration and management costs were covered by the partners and, therefore, data was not provided by partners.

## 2.1.3 Sections addressing the objectives

The findings, in this report, are presented in line with, and following, the householder journey (outlined in the previous section). Findings, therefore, related to an objective are not only contained in one section, but appear in many sections, due to the interrelated nature of the PAYS scheme and its objectives. However, the list below aims to outline where key findings addressing specific objectives can be found in this report.

- 1 **To understand householder attitudes and preferences for PAYS schemes, in particular around:**
  - a) The types of pilot partners that householders would prefer to deliver such projects and would prefer to make repayments to.
    - Addressed in [section 3.4.3](#).
  - b) The elements of PAYS finance packages, in particular the relationship between repayments and savings.
    - Addressed in [section 3.1](#) and [3.9](#).
  - c) The energy saving measures, within PAYS packages, that householders desire and take up.
    - Addressed in [section 3.6](#).
  - d) How to encourage take up and overcome the barrier of high capital costs, particularly for more expensive energy efficiency and microgeneration measures.
    - Addressed in [section 3.3](#), [3.4](#) and [3.9](#).

- e) How to market and communicate these finance packages to householders.
  - Addressed in [section 3.2](#) and [3.8.5](#).

## 2 To understand the viability of different PAYS pilot schemes' delivery and finance models, with focus on:

- a) The different delivery approaches in delivering energy efficiency and microgeneration measures to householders' homes.
  - Addressed in [section 3.5](#), [3.7](#) and [3.10](#).
- b) The different approaches to the home assessment and the calculations of savings and repayments.
  - Addressed in [section 3.5](#).

## 2.2 Research methodology

This review is based on research collected from householders, partners and installers involved in the pilot process.

Householders were signed up to pilots continually over the delivery period of the pilot; therefore, the research period to collect data for this review was concurrent with most of the pilot delivery period. Preparatory research work commenced in January 2010. Data collection commenced in March 2010, following the engagement of the first householders by partners, and continued until July 2011, when the last householders received installations.

The data collection was split across three phases to ensure that information and lessons were captured from the start to the end of the pilot. This also allowed feedback from householders to be captured before too much time had passed, ensuring that they could recall all the details relating to their PAYS experience. Where possible, the majority of householders were interviewed after energy saving measures were installed in their homes, to enable data around their whole householder journey to be captured.

The three phases were:

- Phase 1: Data collection March – May 2010
- Phase 2: Data collection July – September 2010
- Phase 3: Data collection December 2010 – March 2011
- Phase 3 was extended until the end of June 2011, due to the delays in the delivery of the Birmingham and Gentoo pilots. The extension allowed further information on these pilots to be collected.

Databuild Research and Solutions Ltd were contracted to carry out the objective third party data collection.

## 2.2.1 Householder participant survey

Multiple research methods have been used to collect the necessary data for this review. However, the main research method used was a quantitative telephone survey with householders signed up to the PAYS pilot.

At the end of the pilot, 311 householders had been signed up to the PAYS scheme and involved in the process from start to finish ([see section 3.1 for full PAYS householder sign up details](#)). This review carried out interviews with 182 of the 311 householders across the three data collection phases. This sample of 182 unique householders surveyed represents 59% of the 311 householders involved in the PAYS pilot. Table 4 shows the samples sizes surveyed.

The majority of householders were interviewed post energy saving installations in their homes (i.e. immediately after installation of measures). However, a limited number of ten householders were interviewed twice; at the beginning of their involvement in the PAYS process and again at the end of their involvement in the process, after they had received installations. These ten householders were comprised of two householders from the B&Q/Sutton LBC pilot, four from the BCC pilot and four from the Stroud/SWEA pilot. Therefore, in total, 192 interviews were carried out with 182 unique householders.

Pilot target	Unique householders interviews	Householders signed up	% of sample interviewed
B&Q/Sutton LBC	43	67	64%
British Gas	53	80	66%
BCC	16	23	70%
Stroud/SWEA	36	49	73%
Gentoo	34	92	37%
<b>Total</b>	<b>182</b>	<b>311</b>	<b>59%</b>

Table 4 - Householder survey sample achieved for all interviews with unique householders signed up to PAYS schemes (Databuild Report to the Energy Saving Trust, data as of 30th June 2011)

It should be noted that PAYS householders were a self-selecting sample. Householders applied to be involved in the PAYS pilot through an open online or telephone process, with the exception of the Gentoo householders. In addition, before householders were officially signed up to the pilot by partners, each pilot partner had its own screening criteria for householders to ensure they were eligible to participate in the PAYS scheme. This included credit checks and establishing the appropriateness of particular properties for different types of energy saving measures.

To ensure a representative sample of householders in each pilot were interviewed, a quota was set to ensure that at least 60% of householders in each pilot were interviewed at least once. This was not the case for Gentoo; this is explained later in this section ([see 2.3 Limitations of](#)

[the data](#)). The recruitment of householders for the survey aimed to ensure that householders installing packages with a mix of energy saving measures were interviewed.

Of the 182 householders interviewed, 136 were interviewed through a telephone quantitative survey, in phases 2 and 3. The sample of 136 unique respondents surveyed through the quantitative survey represents 44% of the 311 householders involved in the PAYS pilot. The majority of statistics and charts in this report are based upon responses to this quantitative survey from phases 2 and 3. Table 5 illustrates details of the householder interview samples across the three data collection phases.

As a result of finding it challenging to gather information around the experiences of the Gentoo householders by the telephone (due to many of the householders being elderly and hard-of-hearing) an alternative approach to surveying this group was taken. To gather the necessary data required for the review, several site visits to Gentoo housing were arranged in order to interview householders face-to-face or in group discussions. In total, 29 Gentoo householders were interviewed across the three phases in this way, using a similar, but more open-ended survey approach to the quantitative survey. Some of the open-ended responses from these non-quantitative surveys could not be directly translated into the coded ratings and options in the quantitative survey. Therefore, the bases of the charts and statistics in this report will vary depending on whether Gentoo results are included or excluded. In many cases Gentoo results are not included in charts but are referred to separately within the pertinent section.

The phase 1 householder respondents were interviewed through a more semi-structured survey approach in order to obtain detailed responses early on in the process, which could then be used to inform the quantitative survey questions and codes for phases 2 and 3. The topic areas covered in both types of survey were very similar; however, there were more open-ended responses provided in the semi-structured interviews in phase 1. Responses to the semi-structured interviews in phase 1 are included in findings when they can be sensibly coded into the quantitative householder survey; otherwise, they are referenced only where they contradict the survey results.

The table below shows the numbers of interviews carried out with householders at different stages of the PAYS process.

Pilot scheme	Data collection phase			
	Phase 1	Phase 2	Phase 3	Overall
	Semi-structured interviews	Structured	Structured	
B&Q/Sutton LBC	6	28	11	45
British Gas	6	40	7	53
BCC	0	13	7	20
Stroud/SWEA	5	25	10	40
Gentoo	5	12	17	34

Total interviews	22	118	52	192
Subtotals	Phase 1	Phase 2	Phase 3	Overall
Total unique householder interviews	22	116	44	182
Total interviews (quantitative survey)	0	111	35	146
Total unique householder interviews (quantitative survey)	0	109	27	136

Table 5 - Householder interviews across the phased data collection (Databuild Report to the Energy Saving Trust, data as of 30th June 2011)

Ten householders, mentioned above, were interviewed more than once. Base line data was not collected from householders before their participation in the pilot process. Collecting baseline data from householders was challenging, as partners often did not provide householder contact details until they were signed up into the process and the household survey stage was already taking place. With limited resources available it was decided that collecting data from householders at the end of the process was more of a priority over data from householders before to their involvement. No comparative data was collected from other areas, as comparing PAYS areas to other non-PAYS areas was not an aim of the review.

A structured questionnaire was developed and used for the quantitative telephone survey to gather data around the attitudes, perceptions and experience of the PAYS householders.

Key areas investigated through data collection were:

- Householder profile
- Motivations for participation
- Preferences around financial and measure offers
- Assessment and installation phase experience and satisfaction
- Influences upon package selection
- Effectiveness and influence of PAYS (to date)
- Satisfaction with the whole process

## 2.2.2 Householder in-depth interviews

As the review focused on a pilot that was exploratory in nature, a qualitative approach was invaluable in seeking to better understand householder preferences and choices and to learn from them.

In-depth qualitative interviews were carried out with 46 householders engaged with PAYS, at a range of different stages of their householder journey – before, during and after installations. The selection of householders to be interviewed was based upon their measure package choices or the relevance of their responses, from the quantitative householder survey, to the area being explored in the qualitative research. Gentoo householders were not interviewed through this qualitative approach, as they received a service through the Gentoo scheme. This involved limited choice over decisions around measure packages as the properties are owned by the landlord, Gentoo.

Key topic areas the qualitative interviews focused around:

- Perceptions of the offers and the financial charge over time.
- Understanding the motivations of individuals choosing to install solid wall insulation and larger, more costly measure packages.

The qualitative in-depth interviews were split across the following areas:

Pilot scheme	Data collection phase		
	Phase 2	Phase 3	Overall
B&Q/Sutton LBC	7	7	14
British Gas	9	11	20
BCC	5	1	6
Stroud/SWEA	6	0	6
Gentoo	N/A	N/A	N/A
<b>Total</b>	<b>27</b>	<b>19</b>	<b>46</b>

Table 6 - Householder qualitative interviews (Databuild Report to the Energy Saving Trust, data as of 30th June 2011)

## 2.2.3 Household who ceased to participate interviews

A sample of 43 householders who ceased to be involved in the pilot (non-participants) was surveyed – through a quantitative telephone approach – to understand why they stopped participating in the pilot.

The sample contained both householders who had ended participation of their own volition and also those whose process had been cancelled by the partner. Both groups were identified and selected for interview through partner progress reports submitted to the Energy Saving Trust

and through screening out those recorded in these reports as still participating. It is difficult to report the proportion that these 43 householders represent of the total number of householders who ceased to be involved in the pilot. This is because the pilot partners all recorded cancelled participants in different ways at different stages along the process. This data therefore, provides an understanding for some of the reasons why some participants ceased to participate, but may not be representative of all the householders that ceased to participate.

The table below shows the numbers of interviews conducted with those that had engaged but then ceased to participate, across the different phases and pilots. Gentoo tenants were not included in the sample as they were signed up in a different way to the householders from all the other pilots.

Pilot target	Phase 1	Phase 2	Phase 3	Overall
B&Q/Sutton LBC	0	4	5	9
British Gas	3	12	11	26
BCC	0	2	1	3
Stroud/SWEA	0	2	3	5
Gentoo	0	0	0	0
Overall	3	20	20	43

Table 7 - Householder interviews with those who ceased to participate (Databuild Report to the Energy Saving Trust, data as of 30th June 2011)

### 2.2.4 Partners and Installers in-depth interviews

Qualitative interviews with all the delivery partners (and partnership organisations) involved were carried out to learn about their experiences in delivering the pilots. Interviews were undertaken during phase 1 and phase 2 of the data collection period.

Six installers who were involved in installing measures in homes during the pilot were interviewed to learn lessons about the installation process. These interviews were carried out in phase 3 of data collection.

At the start of the review process, in phase 1, seven qualitative interviews with wider stakeholder bodies were conducted to understand their interests in, and expectations of, the PAYS pilot. This is not included in the review but helped shaped the delivery and review of the pilot itself.

Questionnaires and topic guides, used in data collection, are available on request from the Energy Saving Trust.

## 2.2.5 Other data sources

Other data sources were used to supplement the data collected through interviews.

Sources included:

- Monthly monitoring data on progress, reported by the delivery partner for each pilot.
- Monthly monitoring data on progress, reported by the Energy Saving Trust to DECC.
- Additional delivery partner monitoring information and evaluation information provided at the partners' discretion.

## 2.3 Limitations of the data

The sample sizes on which results for this review are based on are small and not representative of the wider English or UK householder population. The results contained in this review are to be used only in respect to the review of the PAYS pilot and not to be extrapolated. Unweighted results are therefore reported in this review (i.e. the results have not been grossed up to the total population of householders participating in the PAYS pilot, as many packages were unique).

Efforts were made to achieve as large as possible sample sizes with the resource and time available. The target was to sample approximately 50 - 60% of the total number of householders signed up to each pilot and achieve similar sample sizes across all pilots. This was achieved with the exception of the Gentoo pilot.

In the case of Gentoo, the sample interviewed was smaller; 34 of an overall 92 householders, which represents 37% of all the householders signed up to the Gentoo pilot. The main reason for this was due to many of the Gentoo tenants involved being very elderly and therefore, difficult to interview through a quantitative telephone questionnaire approach. An alternative approach – of face to face and group interviews – was used on the Gentoo housing site to obtain the necessary data.

The Gentoo research sample has been treated differently to the other pilot samples. This approach was taken because:

- The householders from the Gentoo sample were a very different demographic. The Gentoo householders were tenants in the social rented sector rather than the owner occupiers participating in all the other PAYS pilots.
- Gentoo chose to communicate and deliver the pilots to their tenants in a different way from other pilots. Gentoo tenants were interviewed using a different questionnaire, appropriate to their experience and situation. Therefore, results are not always comparable with other pilot results.

The Birmingham City Council pilot was delayed, meaning that they did not sign up as many householders as expected to the pilot. However, most of those that were signed up were interviewed; out of the 23 signed up, 16 householders were interviewed. In total, 20 interviews were conducted, as four householders were interviewed twice, at the start and at the end of the process.

It should be noted that, for the quantitative survey, the questionnaire was routed so that householders could be asked different questions depending on the pilot they were participating in, their stage in the pilot process at the time of the interview, which phase they were interviewed in, and their specific measure package choices. Therefore, sample sizes and response rates may differ throughout the report depending on the base and research data being quoted.

## 3 Findings

### 3.1 Householder sign-up to PAYS

The PAYS pilot succeeded in signing up and installing energy efficiency and microgeneration measures in 311 households. Table 8 below shows the breakdown of householder<sup>8</sup> sign-ups by pilot project and pilot stage.

The 311 households signed up was against an original target of 510 households. The original target household figure is based on the target figures, which partners proposed to deliver energy saving measures to, within tender bids for PAYS funds. Although the final number signed-up was lower than the original target, the pilot succeeded in signing agreements for a variety of measures. The main reason found for the lower than expected numbers of sign-ups was a higher than anticipated average package cost. This resulted in a reduction in the number of packages that could be provided within the designated funding. In addition, the Birmingham City Council pilot experienced a number of issues, which delayed the roll out of their pilot, therefore, they were not able to sign up as many householders as originally anticipated. The number of householder applications was reported by partners as high and, therefore, was not attributed as a reason for the lower numbers of householders signed up. For further information on the marketing of the pilot [see section 3.2, Marketing and Targeting](#) and [see section 3.10, Delivery and supply chain lessons](#).

Most of the installations were delivered by the end of March 2011. However, due to delays encountered early on in the pilot, final installations on the B&Q/Sutton LBC, Stroud/SWEA and Gentoo pilots were delivered between April and July 2011.

Pilot scheme	Pilot target	Homes signed up 2009-10	Homes signed up 2010-11	Total
B&Q/Sutton LBC	100	33	34	67
British Gas	100	52	28	80
Birmingham City Council	160	0	23	23
Stroud/SWEA	50	20	29	49
Gentoo	100	46	46	92
<b>Total</b>	<b>510</b>	<b>155</b>	<b>160</b>	<b>311</b>

Table 8 - PAYS sign ups (Base: 311, Source: Energy Saving Trust Progress Report to DECC, 30th June 2011)

<sup>8</sup> The term 'householder' is used in this report to refer to householders participating in the PAYS pilot only, unless otherwise stated. The term 'participant' and/or 'respondent' is used in some contexts to refer to the PAYS householders

### 3.1.1 Average value of packages

Listed below is the average value of PAYS financial packages taken up by householders; to show a typical package value. Both B&Q/Sutton LBC and Gentoo (for Gentoo's second half of the pilot – year 2 – for householders with solid wall insulations) included subsidies in their packages. Therefore, average package values for these pilots are shown both including and excluding subsidy.

The average (or mean) package values range from<sup>9</sup>:

- B&Q/Sutton LBC: £13,174 (excluding 40% subsidy); £7,904 (including 40% subsidy)
- British Gas: £11,004
- Birmingham City Council: £12,043
- Stroud/SWEA: £8,820
- Gentoo: Package 1 £4,194 (no subsidy), Package 2, £9,342 (excluding subsidy) and £2,820 (including subsidy)

Overall, the average monthly repayment for a PAYS householder was calculated to be £31.97 across all pilots and £39.74 if Gentoo householders were excluded from the data.

In a small number of cases packages exceeding the £20,000 cap were approved. It provides evidence that there is appetite among some householders for the installation of a number of large costly measures, such as solid wall insulation, amongst some householders. Householders who took up these packages were aware from the outset that repayments would very likely exceed the expected savings.

There were twelve packages exceeding the £20k cap with an average value of £23,711. All of these high value packages were part of the B&Q/Sutton LBC pilot, so they had a 40% subsidy applied to the total cost. Ten out of twelve packages included significant amounts of external or internal solid wall insulation (SWI). Of these ten packages, solid wall insulation accounted for 69% of costs, with the average solid wall insulation cost being £16,297.50 (cost to the householder of £9,778.50 excluding 40% subsidy). A UK average solid wall insulation cost figure is estimated to be £10,000<sup>10</sup>, but the properties of householders installing solid wall insulation as part of PAYS tended to be larger than the average UK property.

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<sup>9</sup> The median package value was also calculated; the median is the middle figure from the data set, when the data is listed in order. The median can be used if the data is skewed and where the mean is less appropriate (or when the importance of outliers is to be reduced). Median data was similar to the mean though differed in the cases of: B&Q/Sutton LBC £11,883 (excluding 40% subsidy); Birmingham City Council £11,038; Stroud £10,000; British Gas and Gentoo medians were the same as the means.

<sup>10</sup> This is based on an average of £5,500-£8,500 for internal solid wall and £10,500-£14,500 for external solid wall.

### 3.1.2 Lengths of finance repayments

Householders, with the exception of Gentoo, chose their repayment period. Gentoo householders in year 1 were given a 20 year repayment period and in year 2 the longer 25 year repayment period, due to the more costly measure of solid wall insulation being installed. The Gentoo pilot showed that householders in the social rented sector were willing to have energy efficiency improvements installed in their homes and to take on a small charge for the installations, where it was predicted that savings would exceed this charge. For reference, Table 2 in section 1.2 states repayment terms per pilot.

The majority of PAYS householders, around 70%, chose to take an agreement with a longer repayment period of 25 years, in order to make the monthly repayments smaller, despite a number of different shorter repayment options being available. B&Q/Sutton LBC and British Gas householders were only given the options of 10 or 25 years; over 70% of B&Q/Sutton LBC householders and 100% of BG householders chose the 25 year option. Nearly 70% of householders from Birmingham City Council’s pilot chose the 25 year period option. The Stroud/SWEA pilot householders were able to choose a number of different repayment periods between 5 and 25 years, though around 70% still opted for the 25 year repayment period and the remaining 30% opted for a variety of different options between 8 and 20 years.

The chart below shows average repayment lengths of the charge that householders signed up to across the pilot.

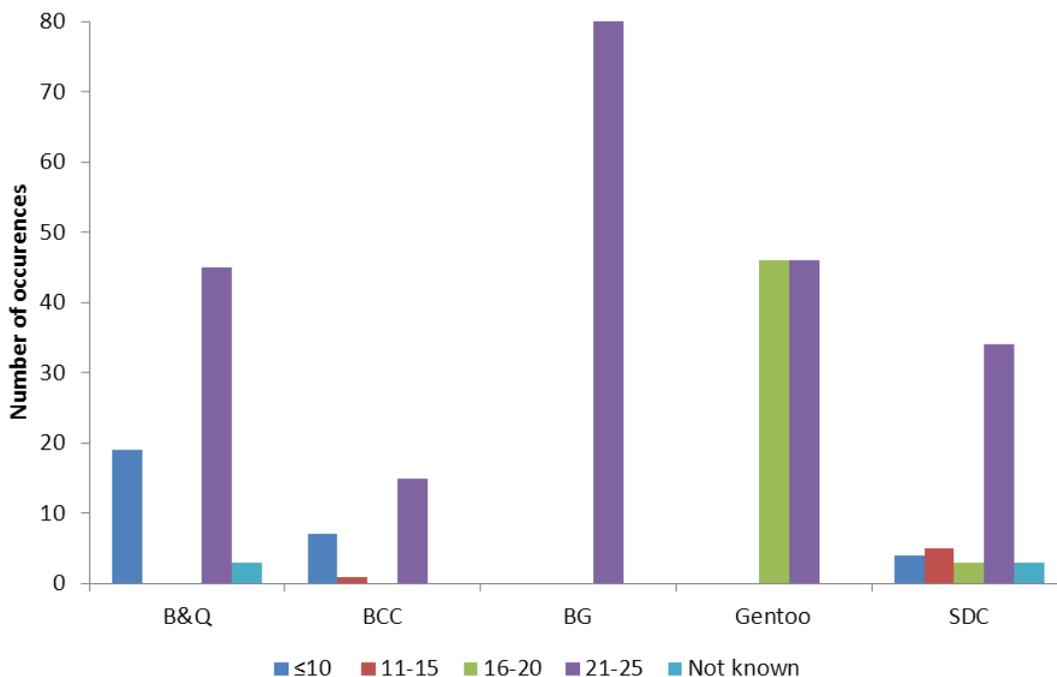


Figure 3 - Average repayment lengths of the charge householders signed up to across the pilots (Base: 311, Source: Energy Saving Trust Progress Report to DECC, 30th June 2011)

### 3.1.3 Self-contribution to packages

In all projects (except the Gentoo pilot, where this would not have been appropriate in the social-rented situation) PAYS customers were allowed the option to contribute their own money, in the form of an upfront capital payment, towards the cost of work.

Stroud/SWEA was the only pilot that had significant customer contributions. This was based upon the rule in this pilot that if the financial offer was over £10,000, householders were required to contribute (or apply for a cheaper package). 53% of Stroud/SWEA customers made an average contribution of £2,501.23. This accounted for 13% of the total cost of the work.

This has shown that householders were willing to contribute their own finances to install energy efficiency and microgeneration measures in their home. Furthermore, although high-value packages account for only a small percentage of the uptake, it is clear that some householders were willing to make significant investment in energy saving measures.

A small number of qualitative interviews were conducted with those that had signed up to a high cost package and / or solid wall insulation in order to understand more about the householder and how they had reconciled the potential drawbacks of such packages. The perceptions of three of the individuals interviewed are reported below in the summary boxes for Householder A, B and C. While it is important to note that these individuals cannot be fully representative of all those taking up this type of package across the pilot, all three were similar in that they were confident of achieving savings that would counter-balance their investment.

#### **Householder A**

Householder A chose to install a biomass boiler package that alone cost more than £20,000. The householder had to pay around £1,500 towards this in addition to the PAYS finance, and mentioned that they would have considered contributing up to around £3,000 in order to get the measures they wanted. The respondent said they did not feel that the financial package was too much to take on, and that they can appreciate the savings they are making compared to buying oil for the old heating system.

### Householder B

Householder B had several measures installed, including PV panels, solar thermal hot water and an air source heat pump. They had recently moved into a new house and wanted to build an extension as well as make the property as efficient as possible.

The PAYS scheme allowed the respondent to continue with the wider refurbishment while still installing energy efficient measures. The respondent thought that if the full finance had not been available for all the measures, he would have sacrificed the solar thermal hot water system, on the basis that the solar PV installation would generate income through the Feed-in Tariff.

The household does not feel uneasy about the size of the financial package that they have taken on, as their energy bills before the installations were very high and they are confident they will make large savings.

### Householder C

Householder C had internal SWI around the front of the house and external SWI on the rear and sides of the house. No planning permission was required. The respondent was already aware of SWI before PAYS, and the assessment confirmed her thoughts that it was a good idea for her house.

The householder was not shown any pictures and did not visit a house with SWI before the installations. However, she thinks that this would have been a good idea as the external insulation *'doesn't look as perfect as it could have been'*.

Householder C chose external SWI on the back of house to avoid having to refurbish a bathroom and insulate internally, and chose external on the sides because internal SWI would have meant narrowing a staircase, which was not feasible.

The cost of getting SWI done had put the householder off until she found out about PAYS. The householder would still have considered getting SWI without PAYS, but because of the cost of this measure, it would probably have been 5 - 10 years in the future. She also mentioned that her neighbours are now showing an interest in getting SWI installed.

## 3.2 Marketing and targeting

- Partners reported that pilots were oversubscribed and delivered minimal targeting and marketing efforts in order to gain initial interest for the pilot scheme places. Partners believed that of the marketing delivered, the most successful channels were national and local press, following up on existing warm leads and word of mouth.
- 55% (311 / 561) of householders who had received a home energy assessment went on to sign a formal contract agreeing to have measures installed in their home. This shows a rate of 45% of householders ceasing to be involved in the pilot after becoming involved in the process.
- Most householders that cancelled their own participation reported it was due to financial reasons. Partners cancelled PAYS processes because the householders in question were found, after further inspection, to be ineligible for the scheme. Cancellations generally occurred following the assessment stage, but before householders signed the contract.
- The proportion of householder cancellations meant that partners had incurred costs for householders who were not continuing through the process to the end. This emphasised the need for a comprehensive pre-qualifying stage to filter out ineligible and uncommitted customers.

### 3.2.1 Marketing approaches

Due to the limited marketing and targeting activity that partners delivered, such approaches could not be tested in full – as originally anticipated when objectives were set at the beginning of the pilot. Partners found that they did not have to undertake significant marketing to gain sufficient up-take in numbers to fill the PAYS pilots. Most pilots delivered a small amount of marketing activity and in addition there was also free coverage by both press and organisations unrelated to the pilot partners.

Of the marketing that was delivered, the partners reported that the most successful channels were the press, following up on existing warm leads developed by partners, and word of mouth. Marketing efforts could have a significant influence on the types of customers interested in the scheme and what measures they could be interested in (e.g. British Gas's promotion of solar PV). A summary of the marketing that did occur is in the table below:

Pilot	Targeting	Marketing channel	Pre-qualification approach
B&Q/ Sutton LBC	Limited	- Local paper article in the <i>Sutton Guardian</i> - LBC Sutton Council Website - information and registration - In B&Q stores - B&Q marketing leaflets	1 <sup>st</sup> stage was a Pre-Qualifying questionnaire on the website and 2 <sup>nd</sup> stage was an energy advisor questionnaire over the phone.
British Gas (BG)	BG customer segmentation and profiling	- Key article featured in the <i>Guardian (UK wide)</i> - Direct Mail to 25,000 BG customers - Information on the website	Pre-Qualifying questionnaire carried out over the phone to verify eligibility.
Birmingham City Council (BCC)	Comprehensive customer segmentation and profiling	- Information on the website - Energy Saving Trust website - Energy Saving advice network referrals	Pre-qualifying questionnaire over the phone.
Stroud/ SWEA	Use of warm leads of exiting scheme Target 2050	- Small-scale local marketing through local press & direct mail - Word of mouth	Most of the leads were from Target 2050, who had received energy assessments previously.
Gentoo	Identified housing stock through the modernisation programme	- Face to face discussions with the householder and the Housing Manager - On the website	Face to face discussions by the Gentoo Housing Manager.

Table 9 - Summary of marketing efforts by partners

Further detail collected from partners around their marketing efforts is included below:

#### **B&Q/Sutton LBC**

- The B&Q/Sutton LBC scheme set out a strong householder engagement strategy – B&Q/Sutton LBC to work closely with both partners to market the concept to customers in the Sutton area, starting with the Low Carbon Zone of Hackbridge.
- Full page advert to market the scheme included in January 2010's *Sutton Guardian* (an example is below). This resulted in 150 phone calls to the B&Q/Sutton LBC call centre. In addition to this, within one day of the launch, 20 people registered their interest using the on-line form on the Sutton Council Website and this continued to increase. In February 2010, the website was updated and closed to further enquiries because it was felt there were sufficient enquiries to process (nearly 400 by that stage).

- B&Q established a small ‘store within a store’, which was aimed to be a one-stop shop for eco transformation. Eco Advisors were trained to advise householders on how to make their homes more sustainable.
- Householders who expressed an interest in the scheme completed a pre-qualifying questionnaire on the Sutton website. They then received a call from a trained advisor from B&Q/Sutton LBC who explained the scheme and assessed suitability.



**Make £10,000 worth of energy efficiency improvements to your home for as little as £5 a week...**

**The scheme**

- London Borough of Sutton Energy Efficiency Scheme in partnership with B&Q
- £10,000 comprises of a FREE £4,000 government grant and a £6,000 interest free loan
- Buy now pay later with repayments that will be less than your savings
- Reduce your energy bills, your carbon footprint and make your home more energy efficient
- A limited trial of 100 homes only

**How to apply**

- To qualify for this fantastic pay as you save scheme visit our website at [www.sutton.gov.uk/pays](http://www.sutton.gov.uk/pays)
- Register your name and address and complete an initial application form
- We will contact you to confirm eligibility
- To ensure your property is suitable, we will then arrange an initial survey
- If your property is chosen we will contact you and arrange to have the work completed



Figure 4 - B&Q marketing example

### British Gas (BG)

- A Guardian article was released in the south east in December 2009 that generated an excellent response with BG receiving over 500 enquiries.
- Following this, in February, a direct mail was started – aimed to market to 150,000 householders – using selected market research and BG’s segmentation model analysis. Batches of 12,500 every couple of days were released in order to manage demand. After the release of two batches of 12,500, over 100 enquiries were received, therefore, further mail outs were stopped to manage existing enquiries. These enquiries plus the enquiries from the Guardian article were felt sufficient to achieve the original target of the 100 homes BG were aiming for (in the end 80 homes were achieved). Additional queries from householders, who were not eligible to the PAYS scheme, were still kept as contacts and redirected to other BG schemes.

**Solar technology is easy to look after**  
We make sure our solar PV panels are really reliable, even in tough environmental conditions. They're easy to maintain and should be covered by most home buildings insurance. Just check the panels from time to time – you'll often find that rainwater cleans them for you. If you're ever unsure, just give us a call and we'll be happy to advise you.

**Sign up for your free energy survey today**  
Call us free on  
**0800 316 0072**



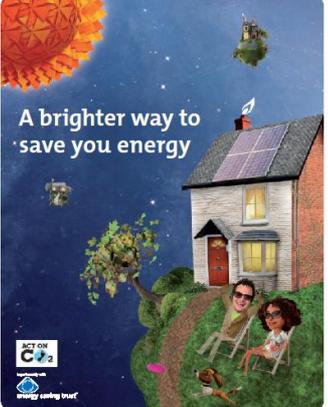
**How else could you save?**  
Loft and cavity wall insulation helps to make homes as efficient as possible by stopping heat escaping through the walls and roof. It not only keeps you cosy, it also helps save money.

**Top up your loft**  
Even if you already have loft insulation you may not have enough. Most of the loft insulation we see is only 50mm deep—about 20% of the recommended thickness. Our survey will find out if you need a top-up. We can normally work around anything you may have stored in your loft.

**Insulate your walls**  
Wall insulation is done from the outside so there's very little fuss or mess, which means you can get on with your daily routine inside. And it helps you save around £157 year on your energy bills.



**A brighter way to save you energy**



**ACT ON CO<sub>2</sub>**  
energy saving trust

**British Gas**  
Leading after your world

Generated at: Mon Feb 15 15:40:42 2010

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Figure 5 - British Gas marketing example

### Birmingham City Council

- Comprehensive market profiling was carried out as part of the wider Birmingham Energy Saver's programme. This included using data from Experian, Ecocentre, the Energy Saving Trust and the Council's own intelligence. The data was mined using different segmentation techniques to identify the most appropriate wards to target for Birmingham Energy Savers and the PAYS pilot. Three key wards were identified; Aston, Lozells & East Handsworth, and Northfield. The segmentation clearly showed the householder type, property type, household income and green segment.
- Birmingham had originally planned to engage customers via a variety of routes including targeted door knocking, community group meetings, presentations to the local mosques' etc. However, in the end marketing was limited to householders who had expressed an interest in PAYS through national media coverage and referrals from the Energy Saving Trust Advice Centre.

### Stroud/SWEA

- Direct mail was the main approach. The marketing for this project was targeted and limited to direct mailing to warm leads developed under the existing Target 2050 project. Through Target 2050, 183 householders had already received property assessments over the previous year. Some of these customers have had a long timeframe to think about the proposed measures they would like to install and PAYS presented them with the perfect opportunity of a financial mechanism to help them to take action.
- Promotions in local media and press were the other limited marketing activities delivered.
- Stroud/SWEA required no additional marketing in year two of the pilot. Instead, they followed up with those who had expressed an interest in year one. In addition, they also received a number of enquires generated by word of mouth, which helped to increase the number of customers. As a result Stroud/SWEA was conscious to manage demand carefully to avoid raising too many leads.

### Gentoo

- A marketing and communications plan was developed and implemented by Gentoo. Gentoo have an intimate knowledge of their property stock and they identified the appropriate properties eligible for the package of measures. Any marketing was carried out through existing engagement channels such as tenant associations and word of mouth. Properties at the bottom of Gentoo's rolling household improvement list were offered the package in order to allow for earlier improvements.
- Gentoo aimed to select households for PAYS for both void and occupied properties. They focused on properties that had the most inefficient boilers and glazing and also households that are currently lower down the heating upgrade programme where householders were willing to pay for upgrades. However, due to the difficulties in finding suitable void properties during the first year of the pilot, and the effect of the efficiency works in prolonging void turnaround times, Gentoo selected only occupied properties in the second half of the pilot period.
- In year one of the pilot Gentoo identified occupied properties by carrying out localised events on a street by street basis. These were often done in conjunction with existing events/activities such as 'bingo nights' to maximise opportunities. In year two Gentoo reviewed their housing stock to identify and target properties that would benefit from external wall insulation. This resulted in the identification of 46 properties on one street. Once identified, they consulted with residents to gauge interest.
- To select void properties, Gentoo Sunderland focused on the 2,000 void properties that they retrofit per annum. When retrofitted, these properties are advertised on the Choice Based Allocations Scheme (the additional energy efficiency charge is also made clear). This ensures that potential tenants make a choice to select a property with an additional charge before a tenancy agreement is signed.

### 3.2.2 Targeting and marketing lessons

Key findings around the marketing and targeting of PAYS drawn out from the qualitative interviews with the partners included:

- B&Q/Sutton LBC had a problem finding properties that had already completed the hard-to-treat energy efficiency measures – such as external wall insulation – and that could therefore be used as exemplar homes to show potential householders what the measures look like when installed.
- The exemplar home network in Stroud, part of Target 2050, has proven to be a valuable tool in educating homeowners on the measures available, including internal and external solid wall insulation and enables people to talk directly to householders.
- Marketing efforts could have a significant influence in driving customers to take up particular measure packages. For example in the case of British Gas marketing solar PV saw a predominately solar PV uptake. In other pilots, a wider mix of measures were offered and taken up.
- While effective at raising interest, the *Guardian* article did contain inaccuracies that had to be refuted by the British Gas customer service staff.

- Up to 50% of the PAYS customers participating in the British Gas pilot were not British Gas energy customers.

### 3.2.3 Conversion rates

The figures below show the conversion rate between different stages in the customer journey. The data gives some indication of conversion rates, however, not all marketing data from partners was provided.

Most partners opted to market and target to only a small select number of householders, such as Stroud/SWEA, using existing warm leads of householders who were interested in their Target2050 scheme. Other partners opted to deliver a broader marketing campaign, such as British Gas, who delivered a large direct mail campaign to over 25,000. Householders with enquiries who were not eligible for PAYS were kept as contacts and rerouted to other BG schemes. Neither, the local Sutton Guardian article by B&Q/Sutton LBC or the Guardian article by British Gas readership has been estimated in these marketing figures.

Pilot Scheme	Homes marketed / targeted	Homes assessments	Homes signed up to contract	Homes with all measures installed
B&Q/Sutton LBC	325	89	67	67
British Gas	25,000 plus <sup>11</sup> ; resulting in over 600 enquiries	173	80	80
Birmingham City Council	129	88	23	23
Stroud/SWEA	276	87	49	49
Gentoo	124	124	92	92
<b>Total</b>	<b>25,000 +</b>	<b>561</b>	<b>311</b>	<b>311</b>

Table 10 - Conversion rates between stages of the customer journey (n= 26,255, Source = Partner progress reports to the Energy Saving Trust, data as of 30th June 2011)

55% (311/561) of householders who received a home energy assessment actually went on to sign a formal contract agreeing to have measures installed in their home. This means that just over half of the householders who seriously considered a PAYS package actually converted into taking up PAYS; 45% ceased to be involved in the pilot.

<sup>11</sup> 25,000 plus were marketed to through BG's UK-wide direct mail; two batches of 12,500 were released. The Guardian article audience has not been included in this figure.

Birmingham City Council experienced a relatively high cancellation rate between the energy assessment and the signing of the finance agreement. There was no one reason identified for the cancellations, but generally Birmingham City Council felt that customers were concerned about entering into a long-term financial commitment in view of the difficult economic situation.

Interviews were carried out with a sample of individuals who ceased their involvement. Out of 46 individuals interviewed in the sample, 28<sup>12</sup> (just under two-thirds) of the householders the partner had discontinued their involvement in the process. There were two key reasons for delivery partners to do this:

- The customer failed a credit check
- Their household was not suitable for the set of measures that the partner was offering to install

18 (just over a third) of the 46 individuals reported that it was their own decision to cancel their participation in the pilot. The predominant reason for their cancellation was financial (i.e. they did not want to take on the repayments). Other reasons included potential disruption, customers not being recommended (or allowed) the measures that they wanted to install, or the pressure of having to make a decision in a short timeframe.

Most opted to cease their participation after the home assessment stage, once they had received detailed information concerning actual savings and repayments specific to their property, but before they had to sign the contractual agreement. Most of the 18 respondents had not envisaged these issues arising before expressing interest in the pilot. Several respondents felt that there was something that could have been done to enhance the prospect of their signing up to the pilot and not cancelling; these mostly focused around the quality of customer care.

In total, partners reported twelve cancellations post-signature of a finance agreement reported by partners. These cancellations were mainly due to a change in the customer's circumstances or measures being identified as unsuitable at the technical assessment stage (e.g. homes being ineligible for solar PV due to issues of shading).

The proportion of participant cancellations meant that partners had incurred costs for householders who were not continuing through the process; as most of householders had already received a home energy assessment before their participation was cancelled. This emphasises that a comprehensive pre-qualifying stage is needed to filter out ineligible and uncommitted customers.

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<sup>12</sup> Overall this figure may well have been higher, but figures could not be representative due to the way partners recorded the cancellation of householders in the process very differently.

### 3.3 Profile of PAYS householders

- The householders from all the pilots, excluding the Gentoo pilot, had a broadly similar demographic profile. PAYS householders were owner occupiers, often living in larger than average properties, middle-aged/retired and reasonably affluent. Householders were fairly environmentally engaged. Many were already carrying out some form of energy efficient behaviour and were also aware of additional actions they could be taking.
- The householder survey revealed that many householders were ‘early adopters’ (i.e. those who had already installed basic insulation measures such as cavity wall and loft insulation) - using PAYS to help them invest in the advanced energy saving measures, such as solid wall insulation and solar PV. PAYS, therefore, in many cases enabled those already more engaged with home energy efficiency to take additional desired action.
- The householders in all pilots except Gentoo were disproportionately likely to be working in – or have worked in – a profession related to building improvement or energy. Certain groups of householders were likely to be able to contribute some of their own money towards certain measures, though not necessarily willing.
- The Gentoo tenants had a very different profile to the other pilot householders. They were mainly elderly residents and were often not engaged at all with ‘energy efficiency’ from an environmental perspective. However, many were interested in warmth / comfort and in reducing energy bills.
- The majority of householders from all pilots, 85%, said they knew what they paid for electricity and gas every month or quarter; all were able to quote amounts paid per month / quarter.

#### 3.3.1 Householder profile

The survey of householders in the non-Gentoo pilots<sup>13</sup> revealed that more than half of respondents received an annual household income of over £40,000.<sup>14</sup> According to the ONS in

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<sup>13</sup> Non-Gentoo pilots refers to all pilots (B&Q/Sutton LBC, BCC, BG, Stroud/SWEA) with the exception of Gentoo.

February 2011 the annual average regular pay for the UK was £22,526. Therefore, in many cases PAYS householders were more affluent than average UK householders, however, this may not always be the case as many PAYS properties were inhabited by a number of individuals living off the reported household income. There were respondents in the lower income brackets (i.e. less than £20,000 per annum) that were retired, therefore, may have had higher income prior to retirement and have substantial wealth in terms of savings / assets.

Most householders who were asked about their occupation were in A-C1 roles, including teachers, solicitors, accountants and a journalist, although other roles included gardeners, potters and a PhD student<sup>15</sup>. A large number (around a fifth) were in roles connected to the building or energy industry, including engineers and installers.

The chart below shows the breakdown of householders' annual household incomes:

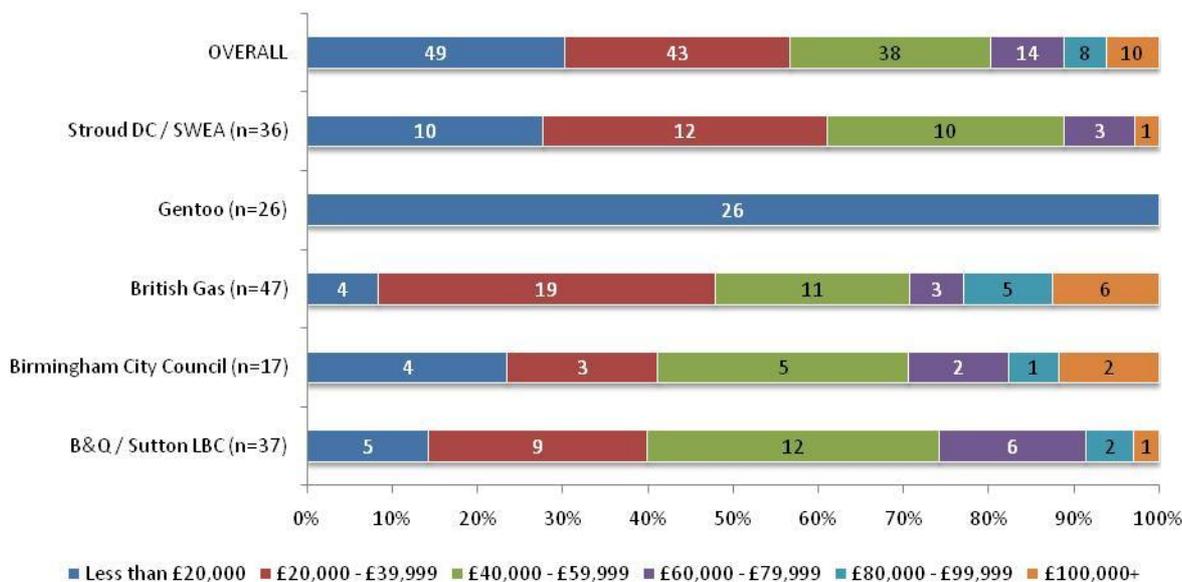


Figure 6 - Householder income bands across the PAYS pilots (n= 169, Source: Quantitative householder survey)

The majority of householders in the non-Gentoo pilots were middle-aged; two-thirds of phase 3<sup>16</sup> householders were aged 40 - 59 years and around a quarter were retired. This is similar to the Energy Saving Trust's advice network's main customer base age group (approximately 75% are over 45 years<sup>17</sup>). Almost all householders in the Gentoo pilot were elderly / retired. The chart below illustrates the age range of householders.

<sup>14</sup>A small number of respondents did not wish to answer this question; therefore numbers in the bars do not necessarily total the 'n' number for each pilot.

<sup>15</sup> Only householders in Phase 3 were asked about their occupations.

<sup>16</sup> Only householders in Phase 3 were asked about their age.

<sup>17</sup> Consumer evaluation survey data 2010

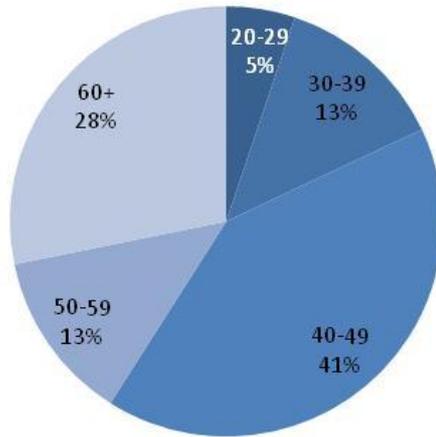


Figure 7 - Breakdown by age of Phase 3 respondents outside of the Gentoo pilot (n=39, Source: Quantitative householder survey). The data reflects only the age of the respondent, not their household.

### 3.3.2 Environmental engagement

Respondents<sup>18</sup> were asked to rate how ‘green’ they thought their lifestyle was on a scale of one to five (1 = being not at all green, to 5 = being very green). Respondents were generally positive about their environmental behaviour. 91% of respondents rated themselves at between a 3 and a 5; none rated themselves at only 1 out of 5. The chart below compares self-rating responses across the other pilots:

<sup>18</sup> Respondents in phase 2 and 3 were asked

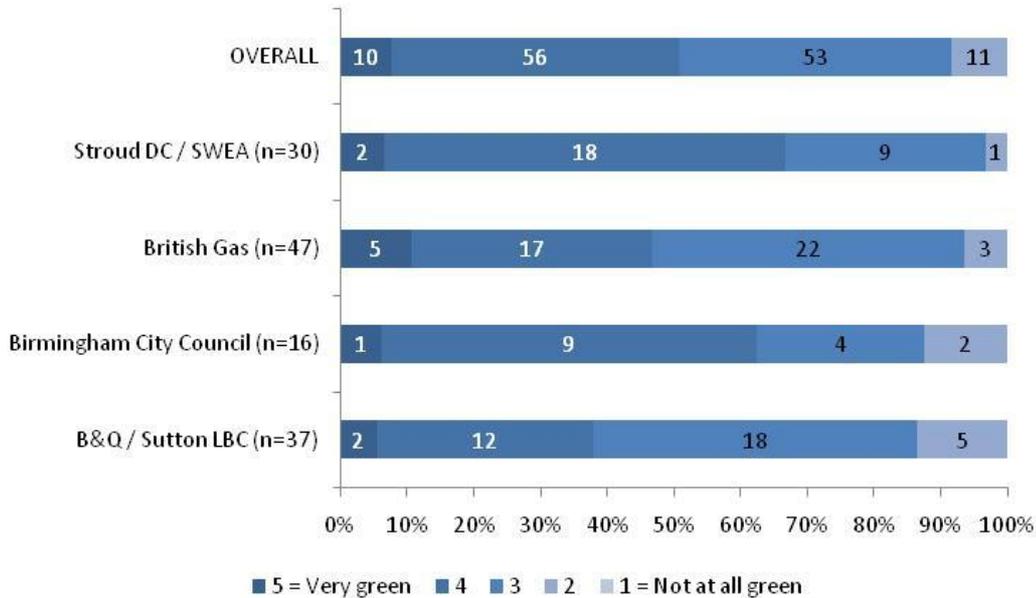


Figure 8 - How green householders felt they were (self-rating, n= 130, Source: Quantitative householder survey)

Participating Gentoo respondents were not asked to rate themselves against this question during the householder survey<sup>19</sup>. However, their responses showed that they were still keen to reduce energy use and have a warmer home. Most knew exactly what they were paying for their energy and some had bought energy efficient appliances for their home.

When all other non-Gentoo respondents were asked to justify their rating, many said they had indeed taken substantial steps to reduce their carbon impact; this included installation of energy saving measures in the home. Most respondents felt that they were above average in terms of being 'green' regardless of their self-rating. Yet many, especially those rating themselves at a 2 or 3, also felt that there was more that they could do to improve.

- *"I have my own chickens and own a combi-boiler which is very efficient. Also I got rid of my car years ago."* [Householder, Stroud / SWEA]
- *"We do composting so we are fairly green. Although on the other hand I have just bought a dishwasher for convenience ... I used to cycle to work, but now I can't as I live too far away so I have to drive."* [Householder, British Gas]

85% of respondents said they knew what they paid for electricity and gas every month or quarter. All were able to quote exact amounts paid per month / quarter, though such figures do

<sup>19</sup> The first phase of interviewing Gentoo householders revealed that the householders did not always respond to terminology around 'energy efficiency' or 'being green'. Therefore, it was decided to remove this from the questionnaire.

not necessarily equate to actual energy consumption and were not verified (e.g. through requesting copies of bills).

- *“...The bills have been multiplying and I’ve been trying to change things to drive them down. We close doors, turn off the computer and lights when not being used. We also recycle and compost on a regular basis.” [Householder, Stroud / SWEA]*

A DEFRA commissioned survey<sup>20</sup> of the UK general public in 2009 found that 27% of respondents felt they were environmentally friendly in ‘most’ or ‘everything’ they did, comparable to the 50% of PAYS householders selecting a 4 or 5 in the chart above. Therefore, over half of PAYS householders could be considered to be at a level of environmental awareness achieved by just over a quarter of the wider population. This implies a high level of knowledge about energy efficiency and about opportunities to take action (even what they aren’t doing but could be doing).

- *“We do try to be as green as possible, although I know there are people who do lots more than us. We recycle as much as we can, and with the insulation, double glazing and new boiler which we got as part of PAYS, I think we are reasonably energy efficient.” [Householder, B&Q / Sutton LBC]*

Many owner occupier PAYS customers had a good level of insulation in their homes before engaging with the scheme.

- *“We have loft insulation, wall insulation, double glazing and we recycle. We don’t use the car and we avoid planes.” [Householder, Stroud / SWEA]*

This again emphasises the fact that they had already taken some action to reduce energy consumption in their home. It also reduced opportunities to install the low-cost, low disruption energy efficiency measures and it increased the focus on microgeneration and higher cost energy efficiency measures.

### 3.3.3 Property types

The types of properties (of householders) signed up to the pilots were broadly similar, with the exception of the Gentoo housing mix. The chart below illustrates the property mix:

- All properties participating in pilot projects were owner occupied with the exception of those in the Gentoo pilot. Gentoo householders were categorised as tenants within the social rented sector.
- Householders from all pilots, except Gentoo, often owned larger than average properties. i.e. non-Gentoo pilots averaged over three bedrooms per participating property. A large proportion of the Gentoo properties were bungalows.

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<sup>20</sup>2009 Survey of Public Attitudes and Behaviours towards the Environment  
<http://www.defra.gov.uk/statistics/files/report-attitudes-behaviours2009.pdf>

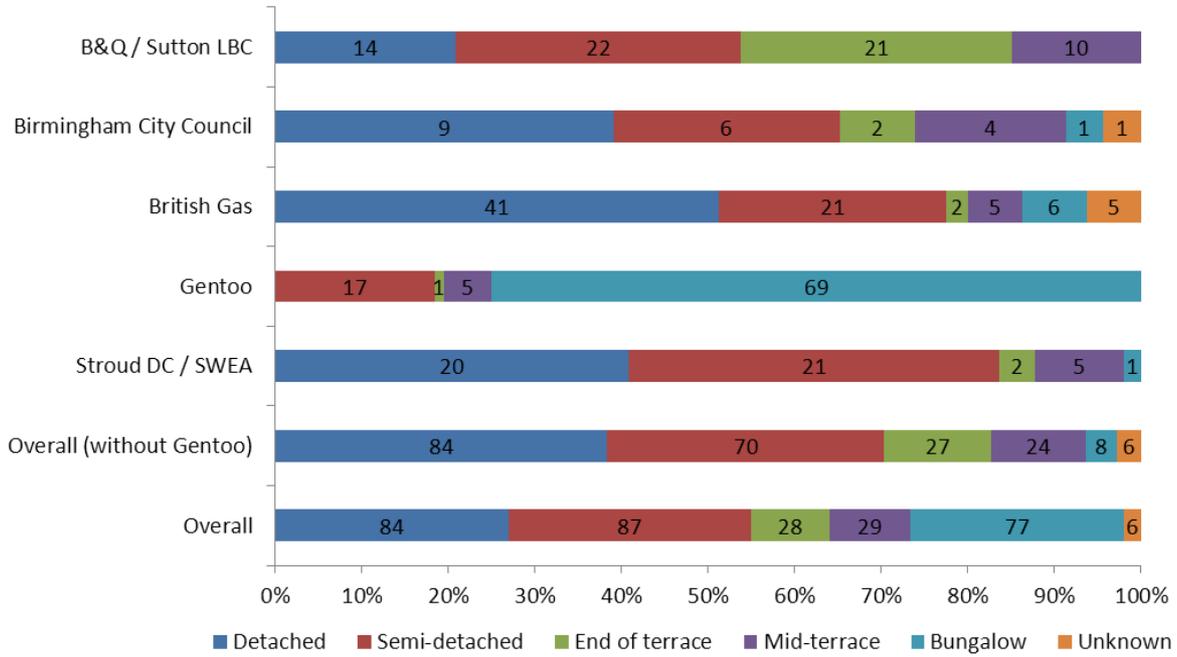


Figure 9 - Breakdown of participating properties by house type (n=277 Source: Information from MRPs)

### 3.4 Householder motivations for participation

- The inclusion of low monthly repayments, lengthy repayment periods and additional benefits such as Feed-in Tariffs meant that the potential net financial benefits of participating in PAYS were the primary motivations mentioned by householders entering the scheme\*.
- One third of those motivated by bill savings were also motivated by reducing their environmental impact. Gentoo householders were the least likely to report reducing environmental impact as an important motivator to them, comfort and bill savings were more commonly reported by this group.
- Based on questions in the householder survey around preferences to different partners delivering the PAYS schemes, householders did not seem to have a particular preference for a type of partner to deliver the pilot. However, similar attributes of delivery partners, preferred by householders were reported to include: security, impartiality and energy expertise.
- Few respondents mentioned increased property value as a primary motivation for installing measures and improving home energy efficiency, despite a feeling among many that improvements made through the PAYS scheme would impact positively on the value of their home.

*\*(Under the Green Deal only finance packages where savings are more than repayments will be eligible. Feed-in Tariff benefits will not be included in Green Deal finance).*

#### 3.4.1 Motivations to reduce energy consumption

Respondents were asked about their motivations to make improvements to their home energy efficiency and reduce energy consumption. Householders could choose multiple reasons – from the following options bill savings, reducing environmental impact, improving warmth/comfort, increasing property value – or specify another reason.

Financial savings were reported as the primary motivation for householders to reduce energy consumption in the home. Reducing environmental impact was the second most common motivation reported; improving comfort in the home reported as the third most common motivation. Around one third of those householders motivated by financial savings were also motivated by reducing their environmental impact. Householders in the Stroud/SWEA pilot were the only group to be more likely motivated by reducing environmental impact than by the

financial benefits of action. Gentoo householders were the most likely to more commonly report improving comfort and bill savings than reducing environmental impact.

Few respondents mentioned increased property value as a motivation for improving home energy efficiency, despite a feeling among many (subsequent to the installations) that improvements made through the PAYS pilot would impact positively on the value of their home. Feedback from householders during the interviews implied that this was because the aesthetic elements of properties were deemed to be more important to sales and many people were motivated to make capital cost improvements through PAYS because they expected to stay in the property for the foreseeable future. Changes, therefore, were made with their comfort in mind, not that of a future buyer.

The chart below shows that many householders have multiple drivers to action.

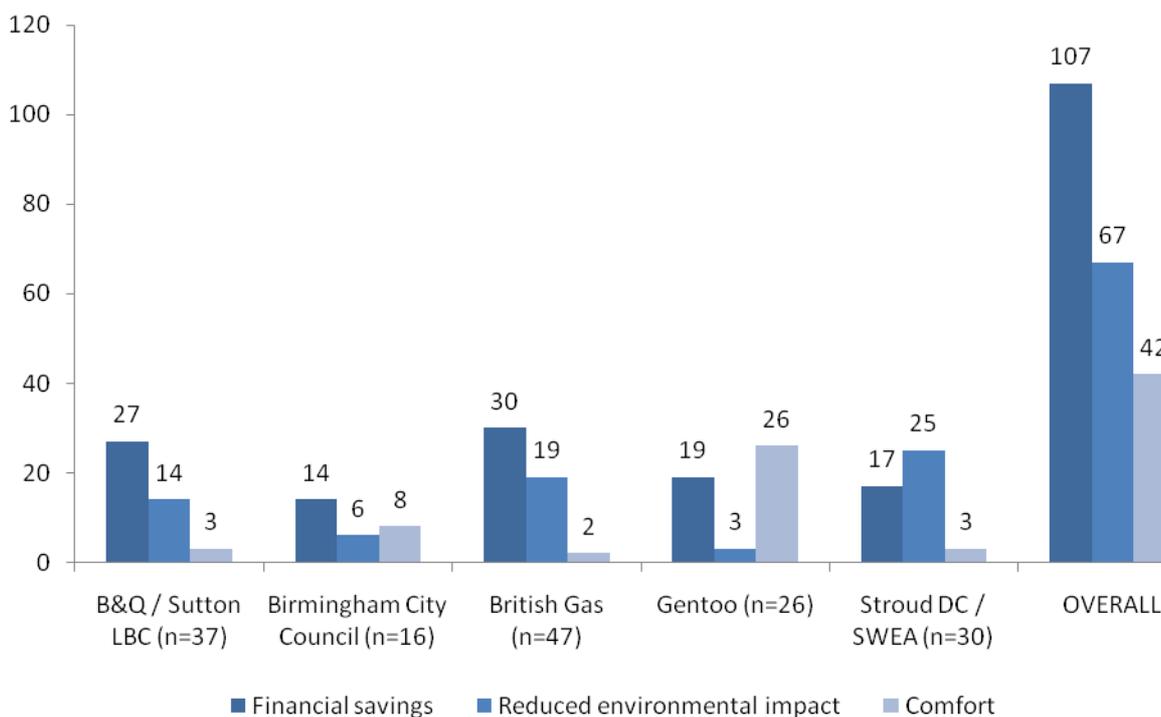


Figure 10 - Motivations to take energy efficiency action (multiple response) (n= 130, Source: Quantitative householder survey)

### 3.4.2 Householder motivations to take up PAYS

Respondents<sup>21</sup> were asked to rate how important different aspects of the PAYS offer were in their decision to apply. Figure 11 shows the results from the survey that explored the extent to which the following factors played a role in the householders' decision to apply:

- The availability of a lump sum of money

<sup>21</sup> Respondents were asked in phase 2 and 3

- The length of the repayment period
- The zero interest rate
- Low monthly payments
- The prospect of getting an energy assessment<sup>22</sup>
- The prospect of someone else coordinating the process

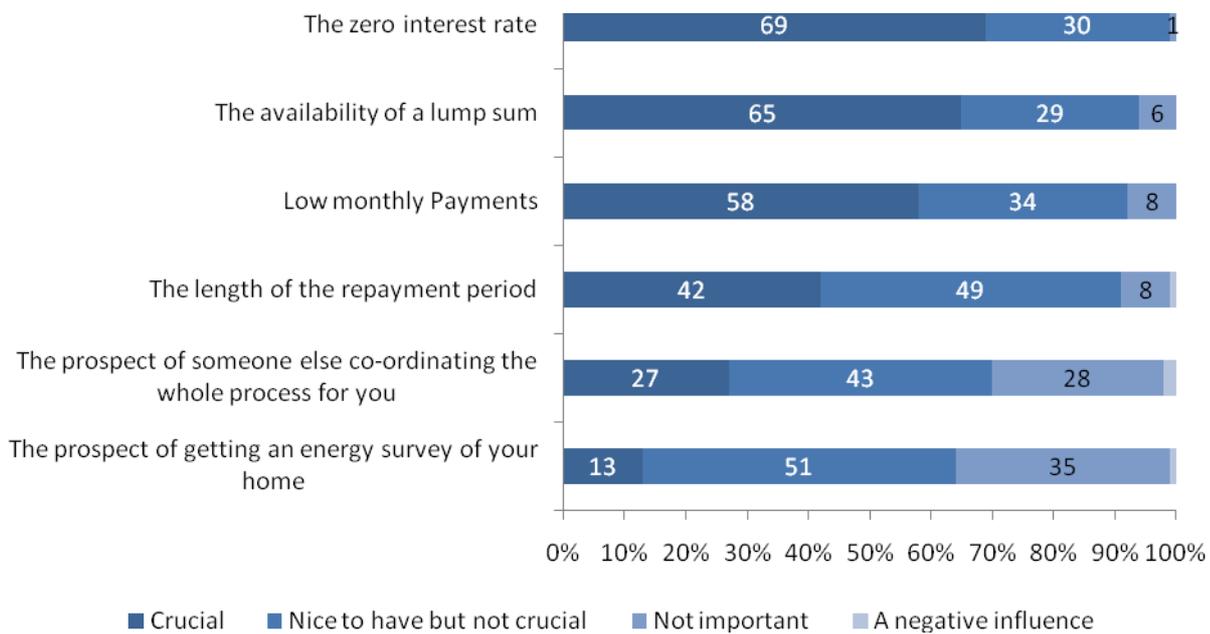


Figure 11 - Motivations for signing up (n=130, Source: Quantitative householder survey)

The most attractive elements of the PAYS offer to householders were related to the financial elements of the offer. These included the low monthly repayments, zero interest rate, lengthy repayment periods and additional benefits such as Feed-in Tariffs<sup>23</sup>.

- *“The scheme pays for itself. With it being interest free, this has a big influence psychologically and it is very attractive how the sums work out over 25 years.” [Householder, Stroud / SWEA]*
- *“It seemed like a good deal. It was already a personal interest. The deal, the money, seemed like a ‘no brainer’.” [Householder, British Gas]*

Although different respondents emphasised the value of different aspects of the financial offer as the crucial influence upon their decision to participate, they seemed to be espousing the same principle: that the PAYS financial offer worked out very attractively in terms of potential financial risks and benefits.

<sup>22</sup> Questions to the householder used the term ‘survey’ as opposed to assessment

<sup>23</sup> Green Deal finance calculations will not include Feed-in Tariff benefits and will charge interest.

- *“It isn’t an outlay for us – it’s a no brainer, you’re getting back what you pay over time. The zero interest is great – it would still appeal at 2% or 3%.” [Householder, British Gas]*
- *“To be honest, over 25 years to repay £10,000 with the associated energy savings is almost better than putting money in the bank. I worked out I’d get something like an 8% return all in all.” [Householder, British Gas]*

Though householders were primarily interested in the financial elements of the offer, many recognised that PAYS was a long-term investment and they would not get a quick return on investment.

The prospect of receiving a home energy assessment and coordination throughout the process were less influential than financial elements in decisions to take up the pilot. They were seen as valuable by many but not likely to act as a driver – or selling point – to signing up.

The majority, 70% of respondents, welcomed the coordination of the process by the partner. Just over a quarter said the coordination was crucial (though not the only reason) in their decision to take up PAYS. A small number had mentioned they may be prepared to pay for the privilege of having the process fully managed by another party. However some, particularly householders from the Stroud/SWEA pilot liked the ability to have more choice and control in the process – which the Stroud/SWEA pilot had offered – and were happy to organise elements of the process themselves. Some of these householders even felt that the offer of coordination by a partner could be a potentially off-putting element of such schemes – and would not be motivated by such an offer.

A higher than expected number of respondents, around 41%, were refurbishing or planning to refurbish their property at the time of their decision to sign up to the PAYS scheme. Of this group, 89% said that they would still have taken up the PAYS offer regardless of the existence of any plans to refurbish. A similar proportion said that they would be refurbishing whether they had taken up PAYS or not. However, the extent to which PAYS householders happened to be concurrently refurbishing hints that there is some correlation between planning to refurbish anyway and therefore being more open to an energy efficiency retrofit programme.

Disruption did not seem to be a key factor to the householders who had registered for PAYS. It is not known, however, how many may have been put off by this and not even registered to apply. Most householders had reconciled themselves to the fact that the installation work would be disruptive. Less than half said that the anticipated level of disruption was a principal consideration for them in the selection of their measure package.

Gentoo householders were not asked about their motivations to take part in the scheme as most did not make a proactive decision to apply, but were instead introduced to the PAYS scheme through promotional door to door visits by Gentoo staff. The contract committed residents to repayments in the form of an increase in weekly rent payments. Therefore, the residents often did not see the PAYS offer as being a lump sum of money, rather an additional rent for an improved property. Almost all viewed the payments as being a price well worth paying for increased warmth and comfort and potential energy bill reductions.



Picture 1 - Sloping ceiling and loft insulation installed in a PAYS household

### 3.4.3 Perceptions around partners

PAYS householders were asked about their perception of the pilot partner that they were dealing with and perceptions of potential future providers of schemes like PAYS.

Householders were asked if the partner delivering the pilot they were participating in made a difference to their application to the pilot. The findings are shown in the chart below. In all of the pilots, the majority of respondents reported that the partners involved made them more likely to apply. Gentoo residents were particularly positive about Gentoo delivering the pilot as they were very familiar with the organisation and thought that Gentoo would want to improve their own properties well. Only a limited number of householders reported that they had any concerns about applying to the PAYS schemes because of the partners involved.

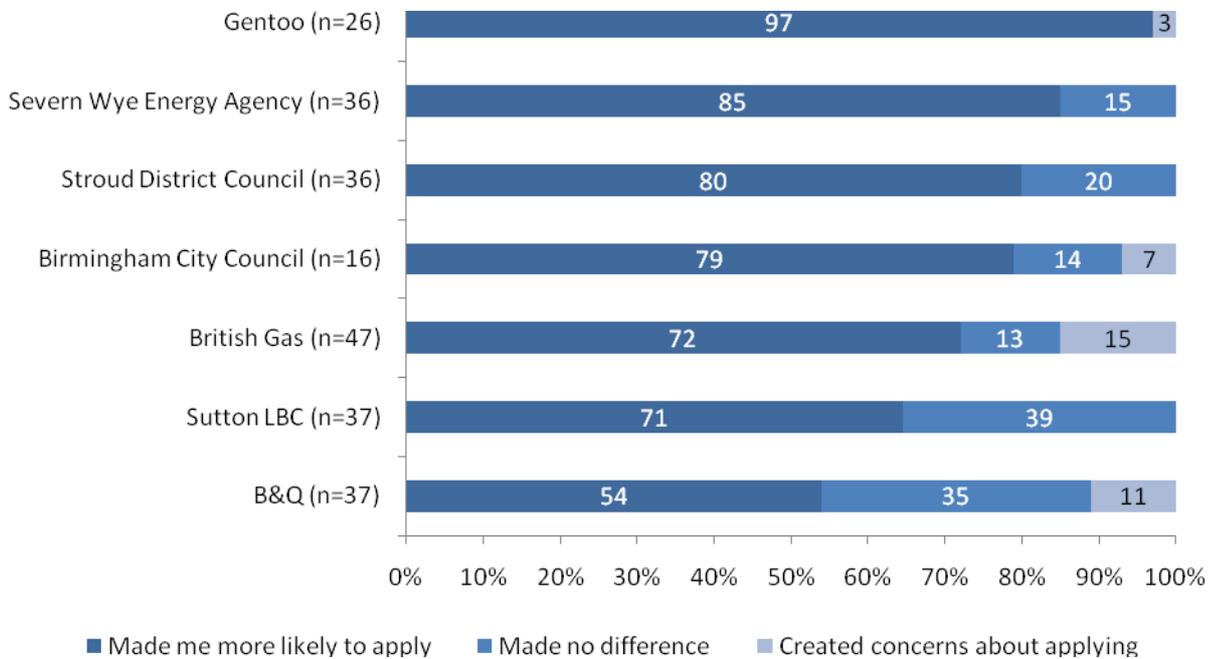


Figure 12 - Impact of the delivery partner on participant prospects of signing up to the PAYS pilots (n=159, Source: Quantitative householder survey)

The key attributes welcomed of a partner, which were commonly mentioned by householders, are listed below. Although these were listed as positive attributes by householders, they were not always seen as essential for their participation.

### 1 Security:

- Financially stable provider that would be in existence for the duration of the repayments.
- Flexibility in the financial arrangement i.e. the organisation would not act unreasonably in the management of the financial charge and repayments over a long period.
- Good quality of service that comes from an organisation with a good reputation.

### 2 Impartiality:

- Impartial advice and support towards doing what is best for the householder, not for the provider's profits.
- Householders were more likely to feel positively about the involvement of public or not-for-profit organisations rather than private companies. This was reported in relation to local authorities, the Energy Saving Trust and Government involvement/backing.

### 3 Expertise in energy efficiency:

- Householders want to be managed and advised by an organisation with a strong understanding of home energy efficiency, microgeneration and complex building work.

The need for these three attributes often led people to allude to:

- A well-known organisation.
- A well-established organisation.
- An existing relationship.
- A public organisation or public private partnership.

## 3.5 Household assessment stage

- Householder satisfaction scores relating to the household assessment process were high across the board. Despite all the pilots taking different approaches to delivering the assessment process, there were no significant differences in the mean satisfaction scores reported by householders across the pilots.
- Most householders recognised the value of the home energy assessment. 85% of householders said that they had some ideas of what measures they would like to install before they received the home assessment. Yet 43% of those with pre-existing ideas had been influenced to change their energy saving measure selection by the home assessment.
- Partners deemed the skill set required of an assessor to be highly demanding, in terms of being knowledgeable about a number of energy efficiency and microgeneration measures in different types of properties.

### 3.5.1 Assessment approach

Partners developed different approaches to both carrying out the home energy assessment and calculating the predicted savings and repayments.

The tables below summarise the approach taken by each pilot partner around the assessment and calculation of savings method<sup>24</sup>.

All owner occupier householders who proceeded with the PAYS pilot received an initial energy assessment, which resulted in recommendations on suitable energy saving measures. Partners reported (in all non-Gentoo pilots) that the energy assessment lasted 90 - 120 minutes, including detailed advice to the householder, with an additional two to three hours analysis and report writing time. Following on from this, additional technical assessments were required to confirm details of the measures to be installed, take measurements and finalise costs. Depending on the measures being installed, it is possible that more than one technical assessment was required.

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<sup>24</sup> The information is taken from assessment information provided to the Energy Saving Trust at the pilot approval stage, Nov 2010.

Pilot partner	Assessment approach
B&Q/Sutton LBC	<p>B&amp;Q/Sutton LBC contracted the energy assessment stage out of house to Parity Projects. Parity Projects has developed their own in-depth bespoke assessment process, which takes account of:</p> <ul style="list-style-type: none"> <li>- the fabric of the house</li> <li>- the lifestyle of the occupants</li> <li>- the actual bills paid by the householder (if available)</li> <li>- the historic weather data local to the site</li> </ul> <p>Upgrade recommendations can therefore be lifestyle or fabric based. All energy assessors were Domestic Energy Assessors.</p> <p>B&amp;Q's original aim was to train their own staff in the second year to take over from Parity Project assessors. However, this was not undertaken as a third neutral party undertaking the assessment was felt to add more value to the proposed recommendations.</p> <p>Following on from this, technical assessments were completed by an appointed contractor.</p> <p>Householders received a detailed report of the assessment, with recommendations on suitable measures, by email. Handholding and advice were provided throughout.</p>
British Gas (BG)	<p>BG's own energy experts carried out a whole house assessment of each property providing a recommendation report on the most suitable measures on-site. Following this, a more detailed technical assessment was carried out in-house by a specialist team. As a minimum all energy assessors were qualified by City and Guilds to provide Energy Efficiency advice.</p> <p>Householders received a report on-site at the time of assessment through a BG designed PDA system, which the assessor took to the house. The basic report provided was referred to as the Energy Savers Report. It was supported by more detailed verbal advice from the Energy Assessor.</p> <p>BG delivered a standard approach to all householders in keeping with their already existing systems and processes.</p>

<p>Birmingham City Council (BCC)</p>	<p>The whole house assessment was carried out by Birmingham City Council’s in-house property surveyors. Each surveyor then discussed the potential schedule of works and projected savings the householder could expect to receive from measures installed. Technical assessments were carried out by appointed contractors.</p> <p>Encraft developed the financial model and developed a series of look up tables showing measures and associated savings. Birmingham City Council used this as a reference system for producing house assessment reports.</p> <p>In addition, the householder was required to speak to a financial advisor (for free) before to the contractual arrangement.</p> <p>Householders received a report post assessment by email.</p>
<p>Stroud/SWEA</p>	<p>SWEA ran the assessment side of the pilot. Householders had mostly all had initial assessments undertaken in the previous year through their involvement in the existing Target 2050 scheme, completed by NHER qualified assessors.</p> <p>The technical assessments required for PAYS measures were carried out by local specialists.</p> <p>NHER Plans Assessor was used to generate NHER and SAP ratings, which were provided to the household within a detailed Target2050 report that SWEA designed to show how energy savings could be achieved, with a full range of measures relevant for the home. For each measure full savings were modelled.</p>
<p>Gentoo</p>	<p>All works were carried out in-house within the Gentoo Group.</p> <p>All properties had an EPC carried out before and after the measures were installed – this included the void properties. Gentoo obtained the energy data for all properties both before and after measures were installed. This proved difficult for void properties where data was requested from energy suppliers. This was because pre work meter data from a different occupier is not comparable to post work data. Gentoo chose to manage customer expectations closely and fully educate tenants throughout the process, in order to avoid confusion or disappointment. The information was generally communicated during a face to face visit by the Housing Manager.</p>

Table 11 - Assessment approach utilised by partner



The pilot partners were all able to apply different methods for modelling savings and repayment packages for householders. The predicted savings across partners were not comparable and very different in some cases. These have been summarised in the table below. No partners factored in increases in energy prices as they felt this would make the customer offer too complex. The table below summarises the different approaches. For further information please contact the Energy Saving Trust.

Assessment approach	Calculation method	Tool applied
B&Q/Sutton LBC	BREDEM-8 <sup>25</sup>	Employed the most bespoke tool across the pilots, developed by Parity Projects including detailed report sent to householders following the assessment. Lifestyle and household energy usage was included to increase the accuracy of assessments and recommendations.
British Gas (BG)	SAP, BG's internal Energy Savers Data 2006-2007 and EST standard saving figures based on standard occupancy.	Bespoke PDA handheld computer the assessors used on site to calculate and produce reports
Birmingham City Council (BCC)	BREDEM and SAP <sup>26</sup> 2005 modelling	Encraft designed and developed a series of look up table of measures and associated savings based on SAP2005.
Stroud/SWEA	NHER <sup>27</sup>	NHER Plans Assessor was used to generate NHER and SAP ratings, which were provided to the household within a detailed Target2050 report that SWEA designed to show how energy savings could be achieved, with a full range of measures relevant for the home. For each measure full savings were modelled.
Gentoo	rdSAP. Due to evidence from previous projects Gentoo only assume 63% reduction from rdSAP calculations.	Tenants were not provided with reports with package options. Instead they received a one-to-one briefing followed by a letter and tenancy variation agreement. Before and after EPCs were also produced for all properties however these were not provided to tenants. Gentoo will carry out additional analysis with this data and report in late 2011.

Table 12 - Calculation model and tools used by partners

<sup>25</sup> **BREDEM**: BRE domestic energy model, a model for the calculation of the annual energy requirements of domestic buildings, and for the estimation of savings resulting from energy conservation measures <http://products.ihc.com/BRE-SEO/br438.htm>.

<sup>26</sup> **SAP and rdSAP**: SAP the Standard Assessment Procedure and RDSAP for Reduced Data SAP; both are derived from the UK Building Research Establishment's Domestic Energy Model (BREDEM) <http://www.ps-energy.co.uk/>

<sup>27</sup> **NHER**: The National Home Energy Rating Scheme (NHER) is a rating scale, based on BREDEM, for the energy efficiency of housing <http://www.nher-ac.org.uk/DEA/index.html>

### 3.5.2 Satisfaction with the assessment

Satisfaction of householders with the assessment stage was high across all pilots. In fact, there were few householders reporting that they were dissatisfied with any aspect of the assessment. Gentoo tenants did not receive the same service – in terms of an assessment stage – and were not provided with any choice over the core elements of their measure packages.

There was no significant difference in the overall mean satisfaction scores across the different pilots. This was surprising as all pilots took different approaches to delivering the assessments. They also encountered different issues with customers to resolve. For example, B&Q/Sutton LBC delivered a very detailed, technical, bespoke assessment in comparison to British Gas' more basic, generic approach. It may be that householders had no clear idea of what to expect, due to having limited knowledge in this area or products and services available on the market to compare to. Figure 13 shows overall scores across different elements of the assessment process (excluding Gentoo data).

There were only slight differences between the pilots when looking at individual areas of satisfaction. The seven aspects (shown in Figure 13) were amalgamated to allow every householder's satisfaction to be scored out of a potential 35 points.

- The mean satisfaction score across all householders was 29
- The mean satisfaction score for B&Q/Sutton LBC assessments was 30
- The mean satisfaction score for Birmingham City Council assessments was 29
- The mean satisfaction score for British Gas assessments was 28
- The mean satisfaction score for Stroud/SWEA assessments was 29

Minimal numbers of conveniently timed assessments encouraged higher satisfaction levels in many cases. Individuals were happy to tolerate short term disruption to get installations out of the way rather than to have a reduction in disruption by installation measures over a longer period of time.

Many of the householders had a high level of prior knowledge concerning the performance of energy efficiency measures. Therefore, it also may have been more difficult to achieve a high satisfaction rating with the assessment of householders who were themselves (often) energy saving experts or enthusiasts and who had closely researched a particular measure.

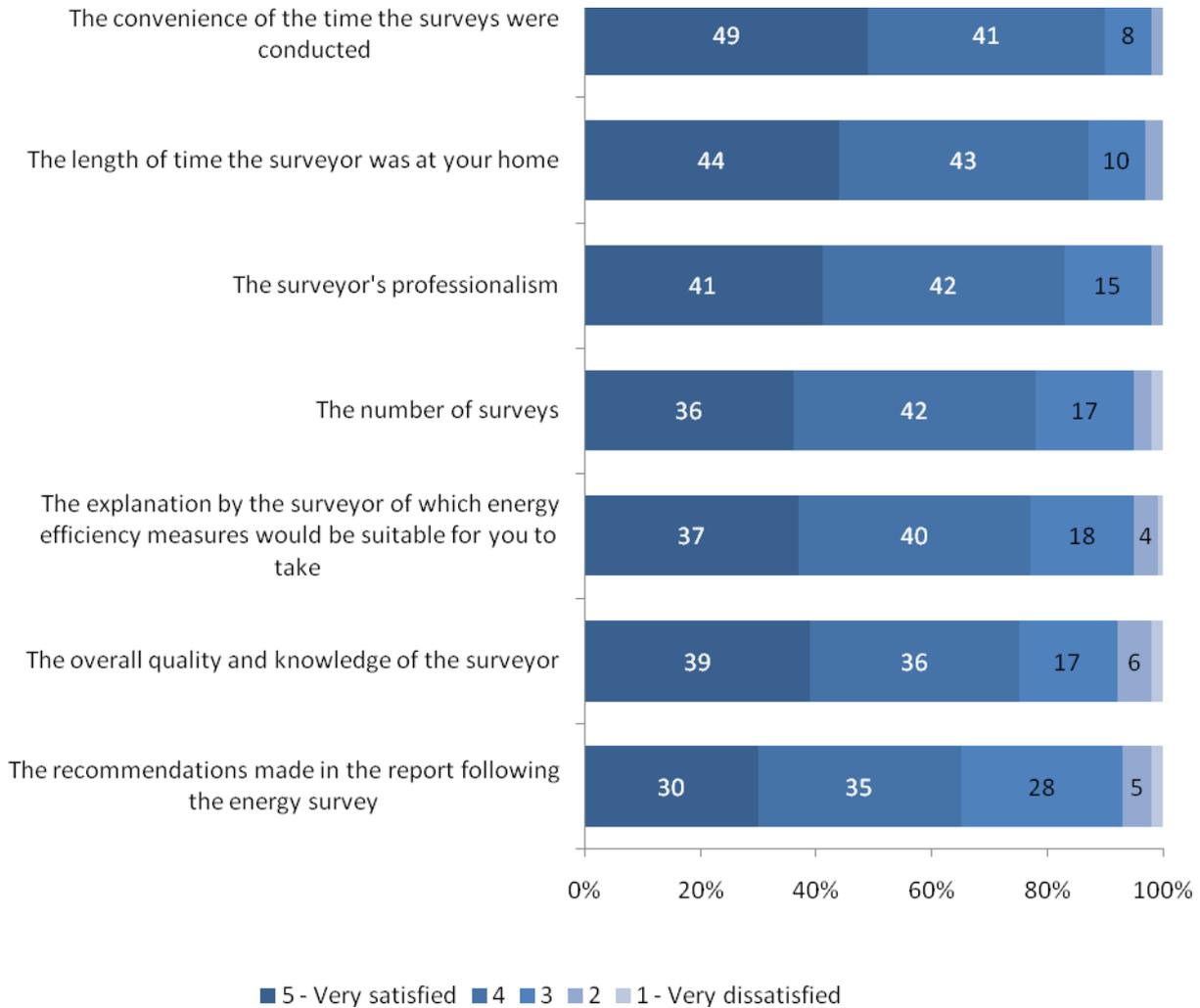


Figure 13 - Satisfaction survey (n=125, Source: Quantitative householder survey)

The skills-set required of an assessor was deemed, by partners, to be highly demanding in terms of being knowledgeable about a number of energy efficiency and microgeneration measures in different properties. Partners, particularly Birmingham City Council, found it difficult to source tradespeople/installers with experience and skills covering a cross-section of measures. This lack of experience may, in some cases, have affected the satisfaction ratings.

### 3.5.3 Assessment influence

One important role of the assessment was to guide the selection of appropriate measures for the property, even though these may contradict the measures the householder originally hoped for. The assessments influenced householders in the following key ways:

- **Providing new ideas to the householder:** *“I was unaware of what solid wall insulation even was, but I have now chosen to do this.” [Householder, Stroud]*
- **Highlighting the benefits of installing particular measures:** *“He explained how much heat gets lost through solid brick walls on end-of-terrace houses.” [Householder, B&Q / Sutton LBC]*
- **Reassurance on measures** that had previously been dismissed and or **confirmation of pre-existing ideas:** *“Cavity wall insulation ...we thought it would be more difficult than the surveyor explained it would be.” [Householder, B&Q / Sutton LBC]*
- **Showing that some pre-existing ideas would not be effective and deliver savings:** *“The surveyor said that solar thermal wouldn’t be appropriate and would be complicated to install.” [Householder, Birmingham City Council]*

85% of respondents said that they had some ideas of what measures they would like to install before they received the home assessment. This illustrates that the householders were knowledgeable about what measures could be, or perhaps needed to be, installed in their home. This may in part be why many did not see the home energy assessment as a particularly motivating component of PAYS in their initial decision to engage. Most of those with pre-existing ideas were interested in PV (mainly because they had heard about the Feed-in Tariffs incentive), though some were hoping for other microgeneration energy measures or wall insulation.

All respondents with pre-existing ideas of what measures they would have liked to install were asked whether the assessments had led them to select measures that differed from their original intentions:

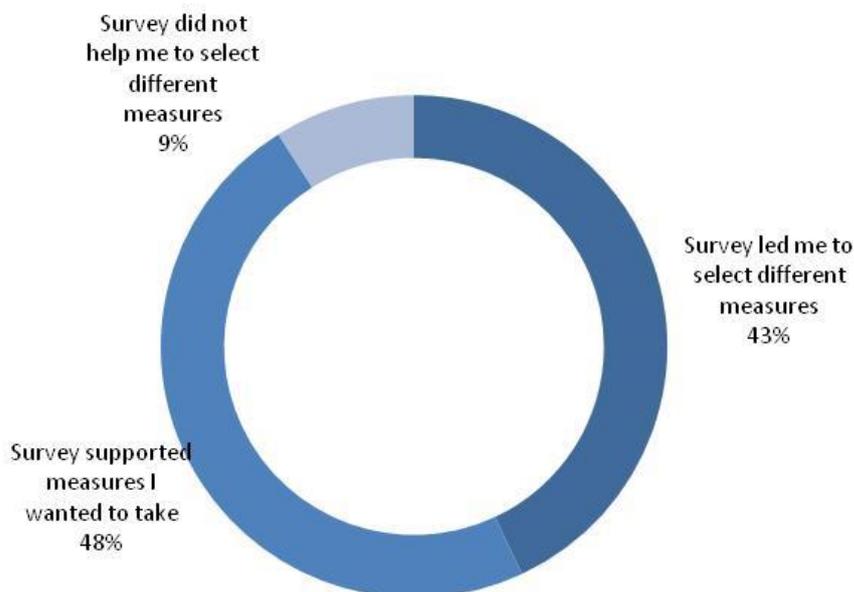


Figure 14 - Influence of the surveys on householder measure selection (n=123, Source: Quantitative householder survey)

43% of those with pre-existing ideas were influenced to change their measure selection as a result of the home assessment. Those dissatisfied with aspects of the assessment were slightly less likely, than those who were satisfied, to have been influenced by the assessment.

Although similar proportions of householders (across the non-Gentoo pilots) had pre-existing ideas of what they would like to do, Figure 15, below, shows that B&Q / Sutton LBC and Stroud / SWEA assessments seemed most likely to have influenced the householders final selection. The assessment process from both of these pilots was extensive and detailed. Householders in these pilot areas were also offered a wider mix of measures and more complex measures like solid wall; this may also have had an effect on their likelihood of changing their views around measures.

Where the assessment had little or no influence on householders' decisions it tended to be for the following reasons:

- The assessments produced recommendations which aligned with the householder's original ideas anyway.
- The assessment produced recommendations that the householder felt were too expensive/
- The assessment produced recommendations that the householder did not agree were required in their property (e.g. recommended further insulation).
- The assessment calculations – and the attached recommendations and saving figures – were too generic and didn't take into account factors about the householder, or their home, that the householder felt were important in ascertaining the most appropriate measures.

The extent to which the assessments across the four non-Gentoo<sup>28</sup> pilots influenced new measures, supported existing ideas or had little influence at all, is shown in the chart below:

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<sup>28</sup> Gentoo householders were not asked as they had no choice over the content of their measure package.

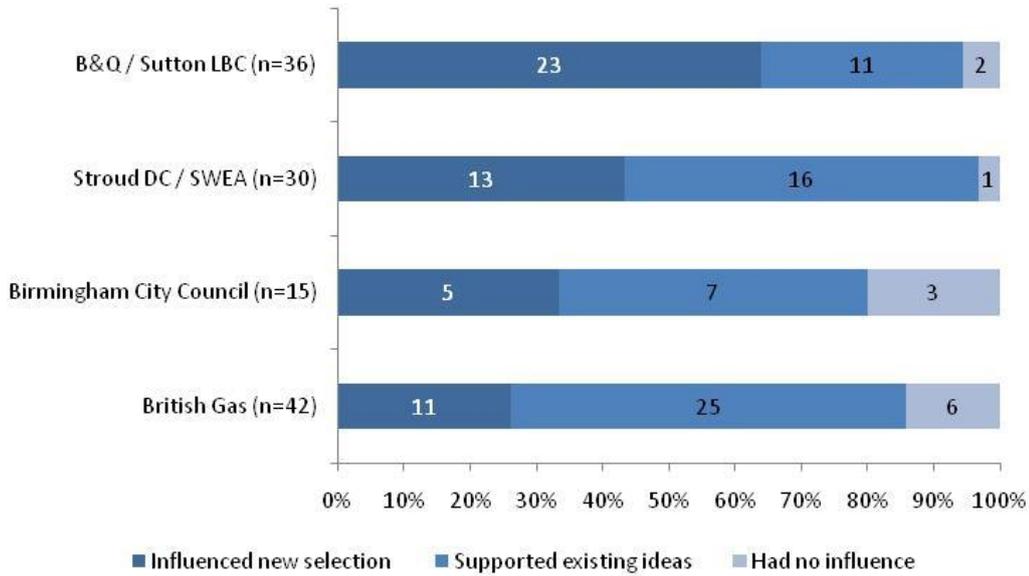


Figure 15 - Extent to which the surveys/assessments in each pilot influenced householder measure selection (n=123, Source: Quantitative householder survey)

## 3.6 Energy saving measures

- Packages of energy saving measures taken up by householders were very different. There were over eighty combinations of measure packages taken up by householders.
- Overall, the most popular measure taken up by householders was double glazing, followed by solar PV panels. External solid wall insulation was the joint 5<sup>th</sup> most common measure to be taken up, alongside draught proofing. However, different pilot schemes installed very different measure mixes.
- The most common package installed in the largest number of homes (46 homes) was delivered by Gentoo, which was a boiler replacement, double glazing and heating controls. Gentoo also delivered external solid wall insulation with double glazing in 46 homes in their second phase of delivery.
- There was only one package combination that was seen in more than one pilot of a boiler replacement, heating controls, draught proofing with one or more of loft insulation, solid wall insulation, double glazing and or floor insulation. These measure packages were mainly installed in B&Q/Sutton LBC and Stroud/SWEA homes.
- In addition to the approved PAYS eligible measures, over the course of the pilot delivery partners requested a number of additional measures, which were approved. Many were related to unexpected work that cropped up during the installation process, some were due to customer requests.

### 3.6.1 Approved energy saving measures

At the beginning of the PAYS pilot, DECC and the Energy Saving Trust informed partners of the measures that would be eligible under the PAYS packages for householders to have installed in their homes. The table below illustrates the original list of approved eligible measures.

For the pilot, each householder was expected to install as many as practically feasible of the minor measures and at least one major measure. The rationale for this was to encourage householders to take up the more costly measures such as solid wall insulation alongside ensuring basic insulation (cavity wall and loft insulation) measures were already installed. No package could include glazing as a single major measure; it had to be included as part of a larger package of measures. This ensured that householders were installing measures for energy saving reasons and not to solely obtain double glazing for other reasons, such as aesthetics or noise reduction.

Minor energy saving measures	Major energy saving measures
Loft insulation (including loft top-up) (LI)	Solid wall insulation internal & external (SWI)
Cavity wall insulation (CWI)	Secondary glazing (SG)
Draught proofing (DP)	Double glazing (DG)
Hot water tank insulation (HWTI)	Boiler upgrades (from G to A/B) (B)
Insulation for piping (IP)	Under floor heating (UFH)
Tap aerators (TA)	Flat roof insulation (FRI)
Heating controls / room temperature controls and thermostatic radiator valves (TRVs)	Floor insulation (FI)
	Wood-burning stoves (secondary) (WBS)
	Wood-chip boilers (primary) (WCB)
	Solar photovoltaic panels (PV)
	Micro wind turbines (WT)
	Micro hydro turbines (HT)
	Heat pumps; air source or ground source (ASHP and GSHP)
	Solar thermal hot water (SHW)

Table 13 - Summary of eligible measures through PAYS

In addition to the above eligible measures, over the course of the pilot delivery partners requested a number of additional measures, which were approved. These included:

- Sloping ceilings: a request to add sloping ceiling insulation to the list of eligible measures was approved.
- Planning costs: the legal fee for obtaining planning permission. Stroud/SWEA included this in their PAYS package.
- Testing for asbestos and removing if found.



Picture 2 - Installers laying Solar PV Panels in a PAYS household

The five pilot partners offered the following multi-measure packages:

Partner	Packages offered 2009-10	Packages offered 2010-11	Dominate measures in packages
B&Q/Sutton LBC	Offered all measures, excluding solar PV.	Offered all measures excluding solar PV, with the exception of a limited number of householders	Broad mix of measures and insulation measures.
British Gas	Offered all measures, with solar PV dominance.	Offered all measures, with solar PV dominance.	Predominately solar PV.
Birmingham City Council (BCC)	BCC offered the full range of measures but their project was led by solar PV.	BCC offered the full range of measures but their project was led by solar PV.	Mainly solar PV, STHW, loft insulation and heating controls.
Stroud/SWEA	Offered all measures CWI, DP, LI not covered by financial offer.	Offered all measures CWI, DP, LI not covered by financial offer.	Broad mix of measures; focus on solar PV, SHW, SWI, ceiling insulation.
Gentoo	Only one generic (standard) package of measures was offered; Double glazing, Boiler up-grade Heating controls and TRV's. Lighting and advice was offered but not under the PAYS funding.	Only one generic (standard) package of measures was offered in year 2; External wall insulation, plus additional measures.	Predominately two main packages split across the two phases/years of the pilots.

Table 14 - Summary of measures and packages offered by each partner

**B&Q/Sutton LBC:** A wide range of measures were offered. Solar PV (with the exception of a small number of households) did not feature in the offer to ensure that the pilot drove different measures such as solid wall.

**British Gas:** Led with solar PV as they felt the 'pay as you save' concept would work most effectively for householders if they installed PV and benefited from the Feed-in Tariff as well.

**Birmingham City Council:** BCC offered the full range of eligible measures but their project was led by solar PV. This was the key measure under the Birmingham Energy Savers Scheme and BCC felt that it would encourage visibility of energy efficiency and help make the figures stack up with Feed-in Tariffs.

**Stroud/SWEA:** A wide range of measures were offered. Cavity wall, loft insulation and draught proofing were not covered by their financial package; this was to help drive take up of higher cost and harder-to-treat measures.

**Gentoo:** Specific homes were targeted with certain packages. The Gentoo Group had achieved the Decent Homes Standard across their entire stock by 2005 and had gone on to continue their improvements by upgrading kitchens and bathrooms. As part of their modernisation programme Gentoo had already installed a number of the minor measures in their housing stock, including cavity wall and loft insulation. Gentoo installed two main packages. In the first year Gentoo installed a boiler upgrade, heating controls and double glazing package. In the second year Gentoo considered installing solar PV but issues with state aid funding with DECC PAYS funds and FITs prevented this being achieved. Gentoo instead carried out the installations internally using their own finance and were able to claim the FIT under this arrangement. A package of whole house external wall insulation, plus additional measures, where possible, was substituted and a subsidy of up to 64% was applied to ensure the package was 'pay as you save'.

### 3.6.2 Measures installed by householders

	Most popular measures	Count
1	Double Glazing	154
2	Solar Photovoltaic Panels (solar PV)	131
3	Boiler Upgrade	127
4	Heating Controls	105
5	External Solid Wall Insulation	72
6	Draft Proofing	72
7	Loft Insulation	48
8	Internal Wall Insulation	32
9	Floor Insulation	15
10	Solar Thermal Hot Water Panels	13
11	Flat Roof Insulation	11
12	Sloping Ceiling Insulation	10
13	Cavity Wall Insulation	8
14	Secondary Glazing	5
15	Wood Burning Stove	4
16	Heat Pumps (Air and Ground source)	3
17	Biomass Boiler	1
	<b>Total</b>	<b>811</b>

Table 15 - Frequency of individual measures taken up by householders

Double glazing was the most popular measure: 154 householders chose to install the measure. Solar PV panels were the second most popular measure: 131 householders installed the technology in their homes. External solid wall insulation was the joint fifth most popular measure, alongside draft proofing, with 72 installations of each respective measure installed in homes. 46 of the solid wall insulation measures were installed in the Gentoo, year 2, properties; this was whole house solid wall insulation. The remaining occurrences of solid wall insulation was partial insulation (i.e. only some walls in the house) - mainly installed on the back walls of properties. The majority of internal wall insulation was also partial wall insulation.

Results show that householders chose to have very diverse measure packages installed; there were over eighty different measure packages. The maximum number of measures installed in a home was up to 8 measures, the average was between two and three. B&Q/Sutton LBC and Stroud/SWEA households were most likely to have a higher number of measures installed in comparison to the other pilots.

There were some common combinations appearing within partner pilots, yet they were as much influenced by partners editing the options they offered householders, as householders selecting the measures.

As Gentoo had full control over its own housing stock and was able to specify and install two main packages in a large number of homes. These were:

- Boiler replacement, heating controls and double glazing in 46 homes in phase 1.
- External solid wall insulation alongside double glazing in 46 of the homes (plus a condensing boiler in 14 of the homes) in phase 2.

Only one package combination was seen in more than one pilot; a mix of boiler replacement, heating controls and draught proofing, with one (or more often) of the following: loft insulation, solid wall insulation, double glazing, and floor insulation. This combination was installed in over 20 homes.

Assessing the savings and benefits of PAYS schemes to householders was not an aim of this review, as at the time it was too early to observe actual financial and energy impacts in homes as a result of installations, from meter readings or from bills. This was because most of the households had not lived with their installations for a sufficient period of time for a comprehensive assessment of the impacts to be taken. Furthermore, as the pilot partners were all allowed to apply different methods for modelling savings for householders, therefore, the predicted savings developed by partners were not comparable across pilots and very different in some cases.



Picture 3 - External solid wall insulation installed on a PAYS household

### 3.6.3 'Making good' as a measure

In addition to the measures that were requested to be covered by PAYS, additional work to 'make good' the property also had to be carried out in many cases. 'Making good' is commonly defined as leaving the property in a fit state for the householder.

Most respondents identified some extra work of this type that needed to be carried out separately and in addition to the measures they selected to install. This ranged from replacing a fuse box to re-felting a flat roof; in most cases, only minor additional work was reported.

In most cases, this additional work was identified by installers early in the process and incorporated into the cost of the installations. In these cases, respondents said that they expected this would be the case. It has not been possible to ascertain the split of costs between householders and partners to make good properties.

However, examples of covering the costs included:

- The householder paying for the cost of a flat roof, which had to be re-felting, before the installation of PV panels.
- The partner paying for the cost of additional work on leaky pipework, which was identified post-installation of measures. Despite the cause of the leak being disputed, the partner agreed to complete repairs. In addition to this, external wall insulation had been installed on the front face of the same property. This excluded the roof apex that adjoins a non-heated loft area. Despite this being specified in the programme of works, the customer complained and the partner agreed to install the additional insulation. All of these costs were absorbed by the partner.

Further information on 'making good' can be found in the [section 3.7, Installation stage](#) and [section 3.10, Delivery and supply chain lessons](#).

## 3.7 Installation stage

- Most householders were satisfied with the installation process. Satisfaction scores with the installation stage were lower than with the assessment stage. This may be because the installation stage was more invasive and continued over a longer period of time. It may also be because householders had more clearly defined expectations of the installation process.
- According to installers, most of the installation jobs threw up further 'making good' work, so they generally incorporated the cost of this service into quotes from the outset.
- Several installers felt that there should be more liaison between surveyors, suppliers and installers to better identify and address issues arising from installation work, and to set more accurate quotes for work as early as possible in the process.
- Partners reported that householder expectations needed to be carefully managed and that regular communications seem to be very important to help them understand how long installations may last and the reasons for any delay.

### 3.7.1 Satisfaction with installations

Most householders were satisfied with the installations of the measures. Satisfaction was lower at this stage than for the assessment stage. However, this is not surprising since installations were far more invasive and disruptive than assessments.

Householders, who had had measures installed, were asked to rate their satisfaction with the installation process in a number of different areas on a scale of one to five, one being 'very dissatisfied' and five being 'very satisfied'. Overall scores are shown below.

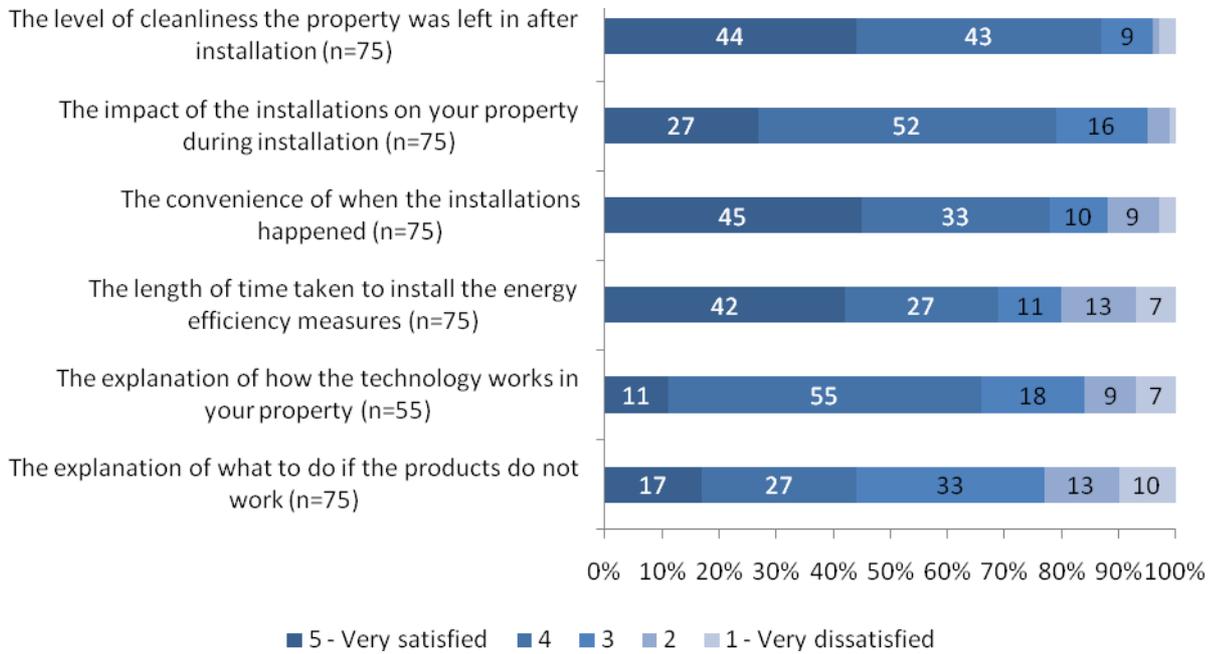


Figure 16 - Satisfaction with different elements of the installation process (n=75 , Source: Quantitative householder survey)

The differences in satisfaction levels across the other pilots are shown in the chart below; each bar indicates the proportion of householders that were satisfied with each aspect. Birmingham City Council results are not included as the sample size is very small:

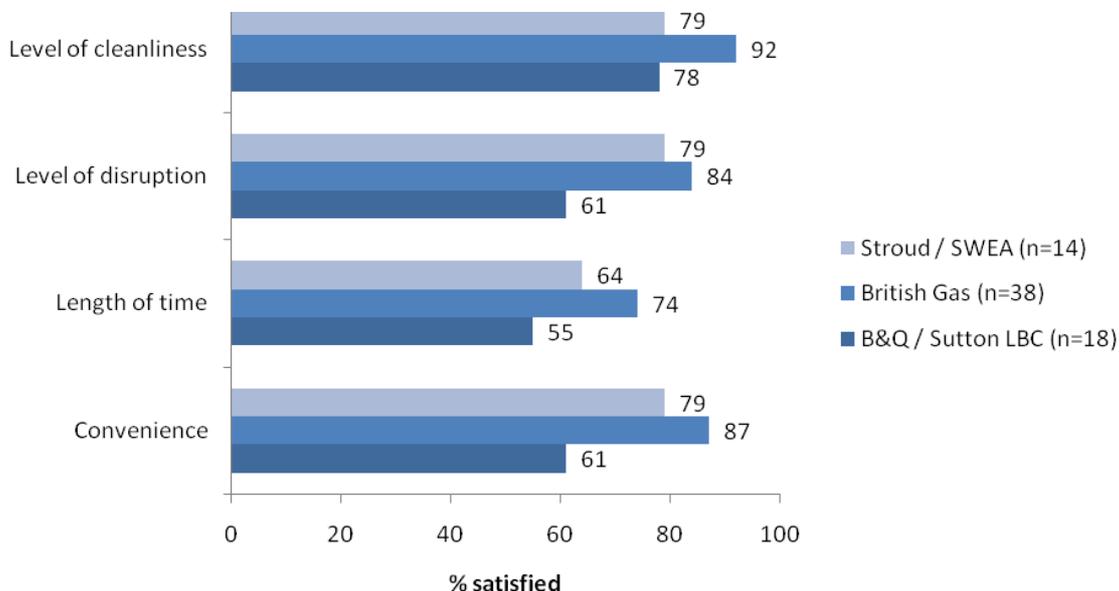


Figure 17 - Satisfaction with different aspects of the installations across the different pilots (n=70, Source: Quantitative householder survey)

The British Gas pilot consistently received the highest satisfaction ratings for installation from householders. This may be as a result of most householders receiving a similar solar PV measure package; reducing the prospect of BG installers encountering issues with different (and multi) measure packages and also enabling installers to improve as the pilot progressed. Installers dealing with simpler measure packages did encounter fewer problems, which is to be expected.

It is unclear why the B&Q/Sutton LBC and Stroud/SWEA pilots scored lower on satisfaction with installation of measures. Both partners developed delivery models that ensured that significant time was spent on customer care and on developing good relationships with householders. It may be because B&Q/Sutton LBC and Stroud/SWEA delivered some of the most complex and multi measure packages across all of the pilots. This meant that installers had to install very different measure packages, and therefore, had less opportunity than British Gas installers, to perfect the same installation approach. B&Q/Sutton LBC householders installing solid wall insulation did experience some delays due to planning permission issues; in the end, planning permission was not required. This may have had an influence upon satisfaction, particularly on areas such as length of installation time.



Picture 4 & 5 - External solid wall insulation installed in a PAYS household

Many householders interviewed in the qualitative interviews said they had researched the measures they were interested in and so knew what to expect.

- ▶ *“There was a lot less disruption than I thought there would be. The engineers who did the work were great – they were polite, always on time and worked very hard to get it installed and finished in just two days.” [Householder, British Gas]*

Where dissatisfaction with the installation process arose, this was generally because the installations had taken longer than expected to install. Respondents preferred disruption and installations to occur in the shortest possible time and preferably all at once so they did not continually have to take time off work. Some of the pilot partners highlighted that two weeks tended to be the tolerance level for the presence of installers in householders’ homes.

A small number of householders seeking PV panels had been given the impression that the process would be a matter of days but it ended up lasting for weeks. This was primarily due to a nationwide shortage of inverters that occurred in 2010. Partners reported that under normal circumstances solar PV could be installed and commissioned within one to three days. Another

householder mentioned that the installation of his PV panels was used as a training exercise for the installer, which lengthened the installation time.

A few householders had raised concerns over the insufficient care taken by installers in their homes. This was particularly in relation to solid wall insulation. Partners believed this was mainly due to installers previously having gained most of their experience of installing solid wall insulation in social housing rather than in owner occupied properties. It was felt that installers had to increase the care taken to the property and the householder, due to owner occupiers being more demanding about their property.

The householder survey results showed that the installers appeared to be weak at providing adequate explanations on using the technology, particularly where controls were present, and what to do if technologies did not work, though the latter did not seem to be a strong concern for most respondents; most assumed that they could just contact the delivery partner or the installers.

## 3.8 Householder preferences for PAYS process

- The majority of respondents said they were happy to have a third party manage the process, rather than manage the process themselves. Some householders wanted to have more control and choice over the process. Some wanted to use their trusted local suppliers.
- All householders wanted to receive regular communication and updates on the process, which some felt they had not received.
- For most householders, affordability of repayments mattered more than total package costs.
- Householders preferred communications of savings in monetary terms rather than kWh.
- Householders wanted to see and touch real-life examples of technology and measures installed in homes.

### 3.8.1 Choice and control

Respondents were asked in the quantitative survey if they had been satisfied with the level of choice and control they had had in the process and their preferred levels of involvement. Householders were asked after they had been involved in the installation process.

All partners, with the exception of Stroud/SWEA, managed the whole process, from house assessment to the installation of measures. This removed the element of choice from householders on installers and products (and therefore manufacturers). The Stroud/SWEA pilot devolved, to householders, the responsibility of choosing installers and managing the process. Householders had to obtain at least two separate quotes for comparison before the package would be approved for funding by Stroud/SWEA.

Gentoo tenants did not have any choice or control over installers or measure packages, so they are not included in this section. However, when discussed with residents, all were happy for Gentoo's building department, Gentoo Construction, to conduct the works and most were happy with their measure packages. Where they were not, this was usually because they wanted a particular product, that other residents were getting ( e.g. a new fireplace or boiler or even new doors – rather than an alternative set of energy efficiency measures), but was not suitable for their property.

Householders were asked if they had been satisfied with the level of choice and control they had had in the process and their preferred levels of involvement. Respondents were generally happy with the level of involvement they were given in their respective pilot. Over three quarters were happy with their level of involvement and the service level provided by the partner. Around 71% of respondents were happy with the level of service provided by the delivery body. No significant difference to satisfaction results per pilot could be observed despite the different level of involvement that Stroud/SWEA householders experienced.

Limited issues were raised by householders and these generally focused around the householders having to organise installation times themselves, or having to chase for updates on progress. Several respondents said that they were asked for too much information by the delivery partner at various stages of the process.

When asked what their ideal level of involvement would be, there appears to be no 'one-size-fits-all' package, with consumer preferences differing widely about how much control and choice they would like to have in the process.

Most respondents (two thirds) of the non-Gentoo pilots, felt they did not have sufficient time and knowledge to take on full responsibility for the process and preferred to have the partner managing the process.

A quarter of householders reported they were actually influenced, to some extent, to take up PAYS because it provided organisation and coordination by a third party partner (i.e. they would never have been able to organise and coordinate such a process themselves). Householders were also asked about their willingness to pay an administration fee to cover management and oversight of the project. While most accepted that there would need to be some administration involved from the partner's perspective, it was felt that this should be incorporated into the overall package cost rather than added as an extra, separate cost.

A third of respondents felt that they would like to control the installation process because they had enough knowledge and ideas/plans of what measures they wanted. Some also had preferred builders they knew and wanted to use. This indicated the high level of knowledge and skills around energy saving installations this PAYS householder group had. Many of these individuals were from the Stroud/SWEA pilot, who already had a larger amount of involvement in the process than other pilot householders. A small number, particularly those from Stroud/SWEA, liked the ability - that the Stroud/SWEA pilot offered them – to have choice and control over the process. Some of these householders even felt that the offer of coordination by a partner could be a potentially off-putting element of similar schemes. It is not clear whether this is as a result of the Stroud/SWEA householders' experience of actually organising the process themselves and not seeing it as too much of a burden or whether Stroud/SWEA designed their model specifically because they felt that their target audience would be receptive to this approach. It is likely to be a combination of the two.

### 3.8.2 Selection of installers

Householders were asked, after they had been involved in the installation process, if given the option they would like to select their own installers; 43% of householders said that they would like to select the installers themselves. Of these, a small number specifically mentioned that they would want to use local suppliers or installers.

Some householders mentioned they had chosen trusted local builders whom they always worked with, or that they were nervous about being committed to one installer by the delivery partner. This was higher amongst Stroud/SWEA householders at 83%, indicating that householders who had to select their own installers – as the Stroud/SWEA model dictated – found this an acceptable process. Only 17% of Stroud/SWEA householders would have preferred the Stroud/SWEA partner to select installers. Among householders in pilot projects other than Stroud/SWEA, 30% of householders said they would have preferred to select installers themselves.



Picture 6 - A local installer installing double glazing windows in a PAYS household

### 3.8.3 Signing-off measures

Though many householders said they were happy to let partners manage the overall process, all householders wanted full involvement and sign-off when it came to selecting the measures to be installed in their home. The chart below illustrates the importance of different influences upon householders’ final package decisions.

Many felt uneasy about allowing another party to specify what would be best installed in their home, particularly as some respondents clearly had existing ideas (as previously stated in [section 3.5](#), *Householder assessment stage*, 85% of householders) of what measures they would like to install before the assessment stage.

- *“A combination of both I think would work best. I would want guidance but the ultimate decision has to be with the home owner.” [Householder, B&Q / Sutton LBC]*
- *“I think it's always good to have measures pointed out, but I've always read about it myself so I think I'd have enough knowledge to choose.” [Householder, British Gas]*

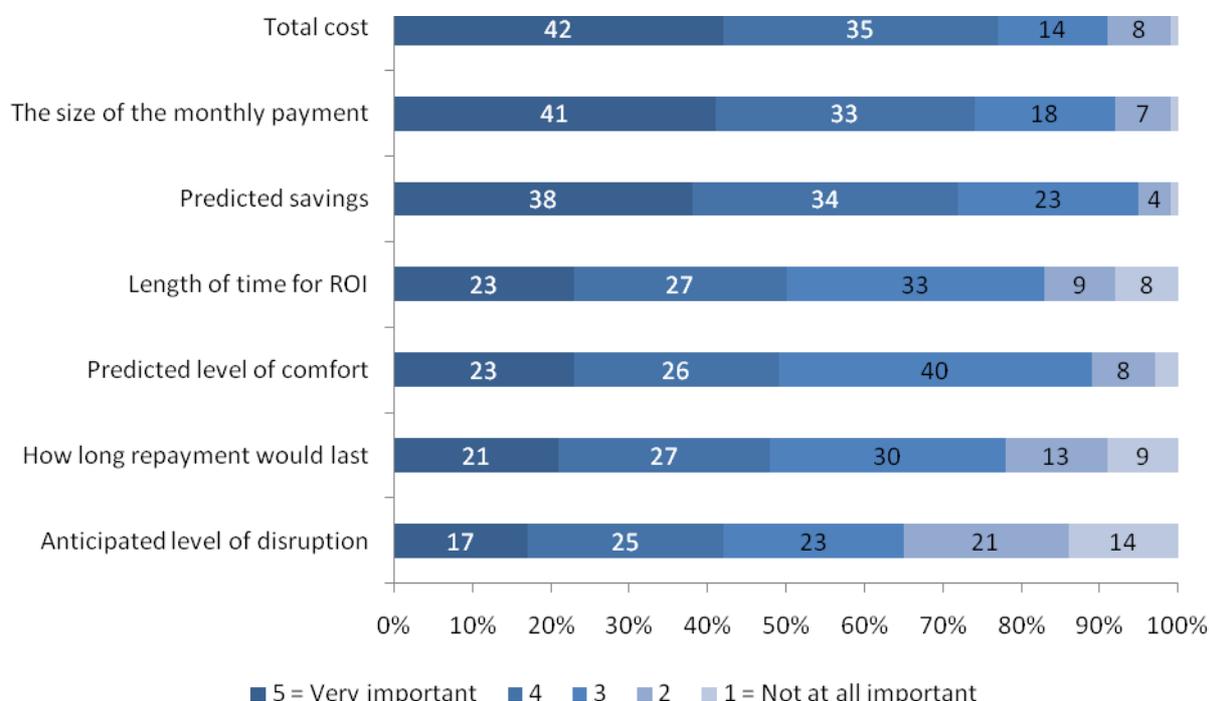


Figure 18 - Importance of different influences upon final measure & financial package decisions (n=92, Source: Quantitative householder survey)

### 3.8.4 Obtaining quotes

As previously stated, all pilots, with the exception of Stroud/SWEA, controlled the process of procuring an installer and obtaining quotes on behalf of the householder. In Stroud/SWEA, the householders themselves had to source an installer and obtain two competitive quotes before funding could be approved. To ensure competitive prices, Birmingham City Council procedures required three quotes to be obtained by the council partner. This caused delays to the process, often because sufficient numbers of skilled tradespeople could not be found to quote on some of the specialist microgeneration and energy efficiency technologies.

Aside from the Stroud/SWEA pilot householders, only 36% of other pilot householders had compared the quoted costs from the partner with those of other installers / partners. When asked why they had not sought comparative quotes most respondents said that they trusted that the partner quote was accurate and not inflated. Some also pointed out that the offer from PAYS was very good and they didn't imagine they would get a better offer elsewhere.

Where householders did compare costs, almost all respondents said that the prices quoted had been very similar. However, when respondents were probed further about the similarity and competitiveness between quotes it was clear that many had different perceptions of 'similar'. Responses ranged from one comment that all were "within £1,000 of each other", whilst another said all the quotes were the same "plus or minus 30%." Two respondents said that they had tried to obtain comparable quotes but they could not find another installer that could do what the PAYS installer was proposing.

For the majority of householders (59%), the costs of installation were approximately what they were expecting. Many had investigated the measures before participating, and had developed some idea of the costs involved. For 12%, costs were less than they had expected; but for 19% they were higher than expected. 10% of householders said they had not really had any expectations so could not say one way or the other.

### 3.8.5 Communications

Qualitative interviews with partners and householders identified some key lessons about communication of the PAYS scheme to the householders.

- Customer communication and regular contact was found to be important; householders wanted to have access to up to date information whenever they required it, but did not want to be forced to be involved all the time.
- Most partners felt that affordability of repayments (monthly or quarterly) generally mattered more than repayments matching/being higher than savings, or the total amount to repay.
- Communication of savings and repayments was better described in amounts which were seen as manageable 'chunks' (such as monthly or quarterly amounts) rather than total amounts of money.

- Customers preferred communication of energy savings in monetary value rather than kWh.
- Partners had to invest significant time at the assessment stage to support householders. Householders required a lot of hand-holding and support to choose packages of measures and interpret the results of any report.
- Householders wanted to be able to see and touch actual examples of different types of technology. This could have been provided through a walk around an exemplar home, providing samples of insulation, or even pictures of other homes in the process of installing the measures. It was important for householders to see examples before, during and after the process. Stroud/SWEA and B&Q/Sutton LBC tried this approach with some of their customers, though they found the number of exemplar homes and examples limited and they could not always use the same homes. Many householders said they liked to see that there was no change at all (or at least no negative change) to the house post-installation.

### 3.9 Householder's confidence and views

- The majority of householders said they were confident in the three key areas: the quality of the installers; the quality of the installations; and the predicted savings actually being achieved. Although, the lowest proportion were confident in predicted savings being achieved, over 70% of householders still remained confident that the predicted savings would be achieved.
- Householders did not seem to be verifying the predicted saving calculations rigorously. Over half had not attempted to verify the predicted savings at the time of being surveyed by even a basic means of assessment. Many who had not sought verification of the savings reported that they were confident that they would save something – especially with energy prices forecast to go up – and they viewed PAYS as an attractive opportunity at the time.
- It was clear that some respondents had not really thought about what they would do if the predicted savings were not realised. Most did not have a clear response and seemed unconcerned. As a default position, most respondents said that they would contact the installer or delivery partner if the technology malfunctioned.

#### 3.9.1 Confidence in measures, installers and savings

At the end of the process, householders were asked about their confidence in three areas; measures, installers and predicted savings. The chart below shows the results, although they are not applicable to Gentoo. Though most Gentoo residents were happy with the installers and the installations, they were not able to assess whether the predicted savings were likely to be achieved. The majority of householders said they were confident in the three areas of installers, installations and predicted savings being achieved. However, householders were most likely to be confident in the quality of the measures, and least likely to be confident in the predicted savings being achieved. Even so, over 70% of householders were confident that the predicted savings and repayments would be achieved.

The issue of confidence is a complex one, as the householders' level of confidence can be affected by many different elements of the PAYS offer. In addition, many of these elements are interrelated. It was not clear whether householders always realised or thought about the relationship between the three elements. Some householders were still confident in the measures despite not being confident in the installers. This does imply that householders did not, perhaps, grasp the interconnectedness of installers and the performance of technologies; many did not note that an installer could do a poor job of installing a measure properly and thereby lessen its effectiveness.

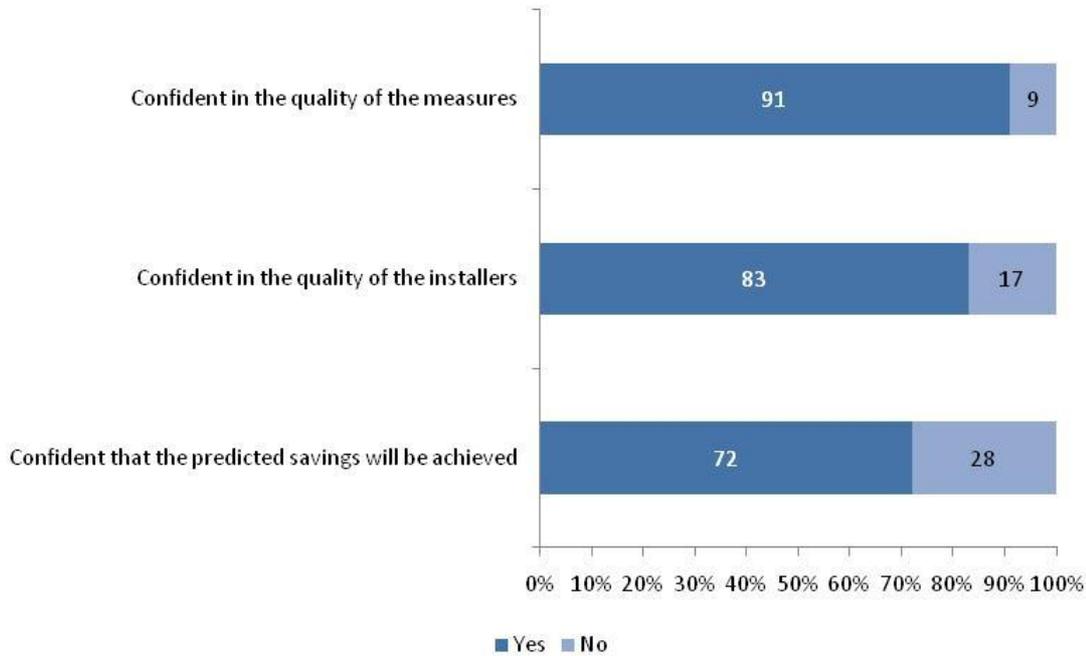


Figure 19 - Whether or not householders felt confident in the measures, installers and predicted savings (n=92 Source: Quantitative householder survey)

### 3.9.2 Views about savings pre-installation

29% of householders said they were not confident in the predicted savings. This was often more of a ‘wait and see’ attitude rather than having a specific reason to be distrustful of the predictions. 46% of householders claimed to have undertaken their own efforts to verify the savings predicted by the assessment. The rigour of their efforts varied greatly. When asked to elaborate on the method undertaken, most respondents said that they had simply re-checked the assessment or figures to make sure they added up correctly and did not include erroneous information about the property.

Very few individuals had sought independent verification from a third party. One householder had asked friends with a similar set of measures what they had saved. Another (an engineer) had used a computer model to assess likely savings.

When the other 54% were asked why they had not sought further verification of predicted savings, most argued that they were confident in saving something (even if not quite the amount predicted) and the package was such a good offer that the precise achievement of the predicted savings was not hugely important. Some householders reported that they were expecting to save money in the future by taking action now, as future energy prices were forecast to go up.

One householder reported:

- *“There’s no way it was going to cause me to lose money.” [Householder, British Gas]*

Others trusted the supplier and installer claims:

- *“I have been told that the old boiler was 65% efficient and the new one is 90% efficient. It is therefore obvious that there will be savings.” [Householder, B&Q / Sutton LBC]*
- *“I just took their word for it as we had a long discussion about what products would be most successful to make savings.” [Householder, B&Q / Sutton LBC]*

Others admitted they lacked the knowledge of how to verify saving figures, but this did not seem to be a concern to them. One householder reported:

- *“I’m not sure how I would go about calculating the savings.” [Householder, B&Q / Sutton LBC]*

Those householders in the B&Q/Sutton LBC pilot were the least likely to have conducted independent calculations or verifications of the predicted savings. This may be related to the very detailed assessment that the B&Q/Sutton LBC pilot carried out, providing the householder with additional confidence.

### 3.9.3 Views about savings post-installation

Though the quantitative survey was undertaken early in the post-installation period, most of the householders said they were not checking bill savings from energy bills against the predicted savings from their report.

As previously reported, householders were generally very aware of their energy bills (85% of respondents said they knew what they paid for electricity and gas every month or quarter; most were able to quote exact amounts they paid). This suggests that most householders, if they really wanted to, were sufficiently knowledgeable about how to check their bills and assess if the measures were reducing their bills. Therefore, it seems that many were not so concerned about achieving the savings that were predicted, though there may be other reasons why they may not have checked them.

Most partners felt that that affordability of repayments generally mattered more to the householders than repayments exactly matching savings.

46% of householders reported they had checked their bill savings post installation (or checked the amount of electricity the solar panels were generating).

A small number reported that the actual savings were less than predicted. One individual reported:

- *“The performance of the panels, so far, is not as high as it’s meant to be or as high as we expected.” [Householder, British Gas]*

A third felt that they were saving more on their energy bills than they were paying back in monthly instalments. It seemed that many were not overly worried about the actual energy or bill savings they were achieving. Many householders were trying to reconcile the lower savings with recent bad weather or other external factors – price rises, changes in circumstance.

A small number of householders were asked what they would do if they did not realise their predicted savings or if there was a problem with the measures. Most of those who had solar PV panels installed felt that the Feed-in Tariff made the panels financially viable even if the amount they generated did not exactly match what was predicted. Respondents with other measures felt unclear about their position if they did not realise their predicted savings. Most felt that there would be little or nothing they could do, as they had signed a contract to repay the finance. However, most seemed unconcerned.

Feelings were stronger when asked what they would do if the measures malfunctioned – almost all said that they would complain directly to the delivery partner or installer in the first instance. Many assumed that there would be a guarantee covering the measures for a certain amount of time, despite few being certain that this was the case.

When asked what would give householders more confidence in predicted savings, many mentioned that a clear standard or accreditation would give householders more confidence.

### **3.9.4 Views about concerns with the installations and installers**

There were limited numbers of concerns raised by householders during the survey interviews, about the installations. Where concerns existed, they tended to be related to the concern over the potential poor performance of the new technology. The lack of confidence was sometimes more a reserving of judgement, as the technology was felt to be relatively ‘untried and untested’. The lowest confidence on all three areas was amongst householders who had PV installations.

- *“I don’t have that much knowledge about PV panels, so I’m reliant on the accreditation system.” [Householder, Stroud/SWEA]*
- *“I am reasonably confident but the technology seems new and untested.” [Householder, British Gas]*
- *“I think it is too early to say as it has only been two months. The figures look promising for summer but I am concerned over what will happen in the winter.” [Householder, Stroud/SWEA]*

A small number of householders were concerned with the poor performance of the installers, which subsequently made them question if the technology would perform as effectively as it was meant to and deliver the expected savings:

- *“The panels have been installed at the wrong pitch. They are at 5 degrees and should be at 35 degrees.” [Householder, British Gas]*
- *“The quality of the workmanship is not there. We've had them back twice to do some maintenance work and we've had faults. One door is still not fitting. There was a draft through one of the doors.” [Householder, B&Q / Sutton LBC]*

Most respondents did not really know what they would do or need to do if the measure stopped functioning. They had not discussed this with the surveyor or installer, though most said they would just call the installer or delivery partner.

### 3.9.5 Views about the PAYS pilot's influence on installations<sup>29</sup>

The PAYS package has helped the vast majority of householders to take more energy efficiency and / or installation action than would otherwise have been achieved and it has also helped them take up these measures earlier than they would have done otherwise.

In order to assess the extent to which the installation of measures and behavioural change action could be attributed to the PAYS pilot, householders were asked to what extent they would have taken the same level of action, without the PAYS scheme. This approach does have its limitations, as householders may both over-claim on the influence of the scheme, or under-claim. Control groups were not used to provide a comparison; they were not seen as appropriate, in this instance, due to limited time and resources.

Figure 20 shows there was a mixed view of the influence of PAYS. Almost one third of householders said they probably would not have acted at all without the influence of PAYS.

- *“The only reason we participated in the scheme was because of the upfront financial support and the long-term repayment period. We would have been unable to make these changes otherwise as we don't have the capital.” [Householder, B&Q / Sutton LBC]*
- *“I was not aware of how I could improve my property any further but the PAYS scheme imbued me with much greater awareness and a thorough technical overview.” [Householder, Stroud / SWEA]*

British Gas householders – most of which installed solar PV – were the most likely to say that they would not have taken action without the PAYS scheme. Many of those who said they would definitely not or probably not have installed any energy efficiency measures without PAYS cited the previous unaffordability of the measures, yet some also cited the importance of the technical guidance provided through the pilot.

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<sup>29</sup> Results exclude Gentoo sample.

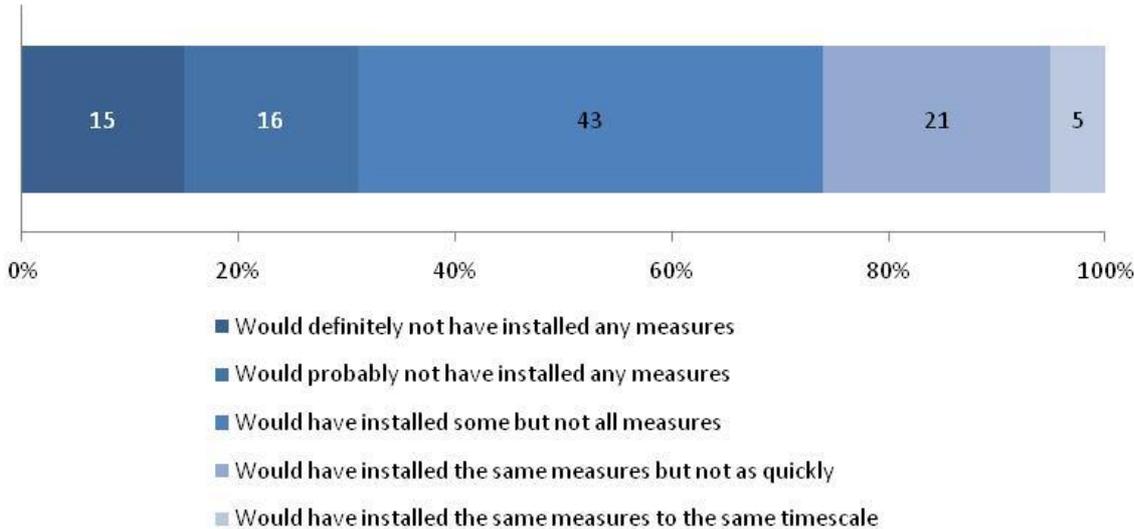


Figure 20 - What would have happened without the Pay As You Save scheme (n=130, Source: Quantitative householder survey)

Where respondents said they would have taken the same action but not as quickly, this was usually related to needing time to save money to invest in the measures. However, it is open to question as to whether other (more urgent) expenditures would have constantly overridden their ambitions.

Comments included:

- *“It would’ve taken about five years due to the financial aspect. PAYS made a huge difference as we’re getting it done in two months.” [Householder, B&Q / Sutton LBC]*
- *“I would have had to spread action out over a much longer period of time such as 2 - 3 years. PAYS was a lot faster; I had it all done within 3 - 4 weeks.” [Householder, B&Q / Sutton LBC]*

Many Gentoo respondents felt that they would not have received these improvements in their home without the scheme.

Householders who said they would have implemented some but not all the measures without PAYS generally felt that they would have avoided the high cost measures – e.g. solid wall insulation or microgeneration measures.

- *“I was considering the external wall insulation but it’s quite a high cost. The PAYS scheme meant I could finance it up-front.” [Householder, B&Q / Sutton LBC]*

Some householders did report that they would have installed the same measures on the same timescales, and would have used their own money. Householders reported that they had the savings to take action anyway, but the pilot meant that they wouldn't have to call upon savings to implement measures. However, they did not provide any reason to explain why they had not already used their savings to install the measures; this may suggest that the PAYS scheme still encouraged these householders to take action. Two respondents also argued that the Feed-in Tariffs alone would have been sufficient to motivate them to install solar PV. Those householders that were refurbishing anyway would still have paid for standard refurbishment measures without PAYS. A small number of householders had used PAYS to undertake action that they would have been forced to take in the same period anyway, e.g. boiler and heating-control replacement.

Stroud/SWEA householders were the most likely to say that they would have taken the same action to the same timescale regardless of the existence of the PAYS offer. This may be related to their demographic and level of commitment to energy efficiency and environmental issues. Again, these householders did not provide clear reasoning why they had not already taken action.

Comments included:

- *“We didn't see the need to dig in to our savings when this scheme offered such an attractive financial package.” [Householder, Stroud / SWEA]*
- *“I liked the financial incentive available as it freed up the money I had originally been saving for the PV panels, to spend on more panels and become even greener.” [Householder, British Gas]*

Two of the householders who had ceased to be involved in PAYS (by cancelling their own involvement) went on to take action: one has installed top-up loft insulation and under-floor insulation, the other has installed loft insulation, a new boiler and glazing. The former decided they did not need the PAYS scheme to install the measures and would use their own funds to pay upfront for the measures. The latter had their boiler breakdown early on during the PAYS application process, so they installed the boiler and other measures themselves so they could have a functional boiler as quickly as possible.

### 3.9.6 Views about the PAYS pilot's influence on energy bills

Due to tight delivery timescales only 29 householders, at the time of interview, had experienced a sufficient period<sup>30</sup> living with the installations to comment on whether they had observed any changes to their energy bills. To make the comparison as accurate as possible, respondents were asked to compare their latest bill after the installation with a bill received around the same time last year. Other respondents were unable to answer, either because their installations had

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<sup>30</sup> Less than two months, therefore, most householders would have not received an energy bill in the time since the installation.

been so recent that no measurement had taken place since, or because they had not kept / did not know their total energy consumption from last year.

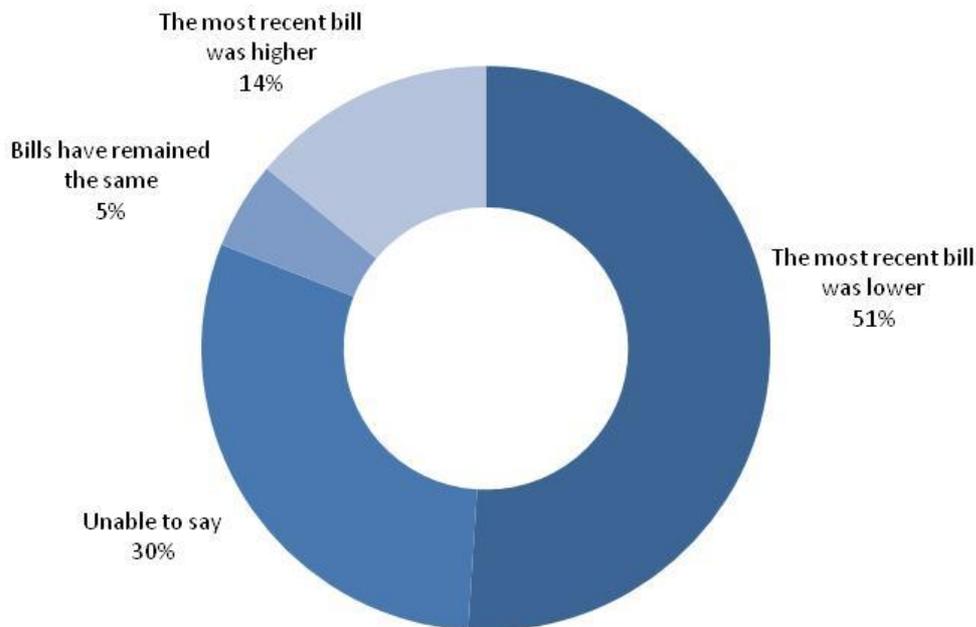


Figure 21 - Change in energy bills compared to a year ago (n=29, Source: Quantitative householder survey)

14 out of the 29 (48%) reported that their energy bills were now lower. However, few had hard evidence or figures to provide. This does, however, imply a high level of confidence that the measures will deliver the savings.

Half of respondents who saw a reduction in energy bills felt that the installations were the only reason for this reduction; with the remaining half reporting that the installations were a factor, but that there were other reasons for the decreases as well. Other factors were usually improved energy use behaviour:

- *“An increase in awareness of how to be more energy efficient, which was itself partly due to the PAYS scheme.” [Householder, Stroud / SWEA]*
- *“As well as the installations, I have monitors in the house and I understand what uses more and what uses less energy. I also use lighting less and use the monitoring equipment to shape my behaviour.” [Householder, British Gas]*
- *“Being more sensible in the way we use electricity. Our daughter is no longer living at home, so we probably use less electricity because of that.” [Householder, British Gas]*

Aside from bill savings, 12 of the 29 respondents (41%) observed other peripheral benefits such as increased warmth or boilers / systems working better. As some respondents said that they felt the property was warmer or less draughty than they could safely say that the measures were working, and therefore, any reduction in consumption would be due at least in part to the measures.

Where solar PV panels had been installed, householders could use the generation figures to show that some of their previous mains use was being offset by the panel(s).

Four of the 29 (14%) reported that their energy bills were now higher. Where bills had increased, respondents felt that this was due to circumstantial changes – e.g. working from home or an increase in fuel prices – rather than evidence that the measures were not working.

A limited number reported they had checked their bill savings (or checked the amount of electricity the solar PV panels were generating) and the actuals were less than the predicted. One individual reported:

- *“The performance of the panels so far is not as high as it’s meant to be or as high as we expected.” [Householder, British Gas]*

### **3.9.7 Views about the PAYS pilot’s influence on behaviour change**

Aside from the behaviour change related to installed measures through the pilot projects, other potential wider benefits of PAYS participation were explored with householders. All respondents were asked whether, following their involvement, they were more or less likely to install further measures, change their energy behaviour or encourage energy efficiency in others:

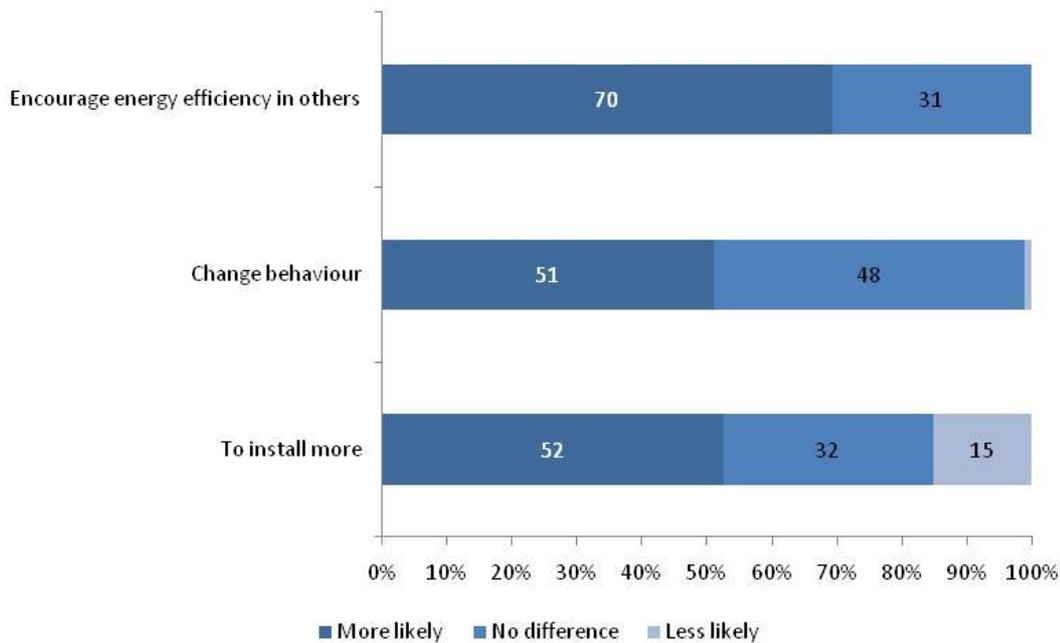


Figure 22 - Extent to which involvement in PAYS changed householder attitudes (n=130, Source: Quantitative householder survey)

Householders were asked to what extent the PAYS scheme had also encouraged a change in their attitudes to taking energy efficiency action. The chart shows that participation in PAYS generally had a positive impact upon behaviours and attitudes to energy efficiency. Where respondents felt that they were less likely to install measures following their involvement, this was because installing the measures through PAYS had reduced the potential amount of energy saving action left for them to do, rather than because the process had put them off.

### 3.9.8 Views about property value post-installation

70% of respondents at post-installation stage thought that the installations would add value to their house. Despite a feeling among many (subsequent to the installations) that improvements made through the PAYS pilot would impact positively on the value of their home, no respondents cited increasing property value as a motivator for taking part. In addition, even where they did not think the measures had influenced the house value respondents often felt that the novelty of the energy saving measures could help facilitate a quicker sale. However, as noted earlier PAYS householders are likely to be energy saving early adopters and enthusiasts.

## 3.10 Delivery and supply chain lessons

This section summarises key lessons and points of interest around the delivery of the pilots. The information is based on the qualitative interviews with PAYS delivery partners and installers<sup>31</sup>.

### 3.10.1 Why partners got involved

The partners had multiple and similar reasons for applying to become involved in the PAYS pilots:

- It supported the environmental aims of the organisations involved and demonstrated leadership in the area.
- It demonstrated commitment to carbon reduction and corporate and social responsibility (CSR) targets and supported strategies related to reducing climate change.
- It provided additional funding for existing projects or wider strategic plans:
  - For Birmingham City Council, the PAYS pilot formed part of the wider Birmingham Energy Savers scheme<sup>32</sup> and was delivered as part of an existing partnership with West Midland Kick Start<sup>33</sup>.
  - For Stroud District Council, the pilot was part of the Target 2050<sup>34</sup> programme
- It created commercial opportunities:
  - Through building organisational reputation (SWEA)
  - Through kick-starting sales of products associated with the pilot (B&Q/Sutton LBC or British Gas' renewable energy arm).
  - Risk-free exploration of the opportunities and challenges inherent in the process, including development of new products and offers as well as valuable preparation for the Green Deal.

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<sup>31</sup> Where findings were directly attributable to a specific partner they have been referenced, where findings have been reported by more than one partner no specific reference is made

<sup>32</sup> Birmingham Energy Savers is a £35 million project to deliver energy efficient retrofitting of 4,500 homes over the next three years, offering a variety of funding packages and incentives to participating householders.

<sup>33</sup> The Kick Start Scheme provides housing advice and associated repair or maintenance services to private sector homeowners to make their homes decent.

<sup>34</sup> The [Target 2050](#) programme has been developed by SDC in partnership with SWEA to support and enable homes, businesses and community action to reduce carbon emissions in line with global and national targets.

### 3.10.2 Coordination, administration and customer care

- The administrative requirements were more significant than had been anticipated – e.g. consent from the mortgage provider, registering a property on the Land Registry (some houses were not properly registered).
- In particular, the unexpectedly high level of customer care and administration required. Although none of the partners had applied to run the pilot in expectation of substantial profit, they did not expect it to be so resource intensive.
- In all of the projects, householders have required more hand-holding and support than initially anticipated. This has amounted to an anticipated cost to partners of up to two to three days per household.
- Some customers have tried to claim for compensation for damages and issues, which meant partners had to invest more time in customer care to deal with these situations.
- Managing householders' expectations. In a number of cases, householders requested measures that were not recommended for the property or did not make sense financially (i.e. did not save on a 'pay as you save' basis). Motivations may have been driven by more aesthetic motivations, for example double glazing.
- Due to the relative small scale of the pilots and wider strategic drivers, partners have been content to carry administration costs. However, they felt that the administrative cost per customer did carry implications for attracting commercial interest (or raising prices and therefore attracting householder interest) in delivering a rolled out PAYS scheme.
- The pilot highlighted that customers needed more regular updates than had been anticipated.
- Improved communications between those involved in delivering the pilot (financial provider, installers, etc.) can help to improve delivery and reduce delays.

### 3.10.3 Reasons for delays

- Internal Processes:
  - Delays arose due to both small and large PAYS management functions. B&Q reported that because there were checks that needed to occur in setting up loans and only a small team in place to process householders. However, Birmingham City Council reported delays because there were many departments involved that slowed the process down.
- Communication between joint partnerships
  - Lack of communication between multiple delivery partners can result in misunderstandings and / or delays.
  - Liaison with subcontractors, especially where there was a large number, was sometimes difficult to administer. The solution was to engage in more effective planning (particularly around the order in which elements of the work should be completed), as well as increased communication between the company and its subcontractors.
- Planning
  - Delays arose due to installing measures in listed buildings and planning guidance issues; especially external wall insulation to solid wall properties.

- Technology supply
  - In the early stages of the pilot a global solar PV inverter shortage resulted in delays to the pilot.
- Householders
  - Some householders took a long time to decide on measures and / or repeatedly changed their package of measures to be installed.
- Installer business security
  - A local installer in Stroud/SWEA faced cash flow issues; at least five householders were affected and there was a significant delay to those involved when the installer ceased trading due to the cash flow issue.
  - Two pilot projects experienced delays when installers went out of business and work has to be re-quoted and / or reallocated to a new installer.

### 3.10.4 Planning guidance

- Delays and confusion around planning guidance was as a result of different local authorities taking different approaches to planning requirements for external solid wall insulation.
- Clarity needs to be provided on planning rules around particular measures and on particular property types. Delays arose on installations taking place in listed buildings. The sensitive nature of the property made it difficult to get installations finished within the timescales set by the delivery body.

### 3.10.5 Assessment stage

- The skill set required of an assessor was more demanding than anticipated by partners in terms of being knowledgeable about a number of energy efficiency and microgeneration measures in different properties.
- Experience has shown it is important to ensure the assessment is as detailed and accurate as possible. In a small number of cases, the software used by assessors was felt to be inaccurate and that the recommendations resulting from it sometimes inappropriate or unfeasible for the house in question. One installer mentioned that there needed to be more of a link between the original assessment and the contractors who carry out the work. In some instances, his company had to spend a lot of time dealing with queries from householders.
- In one instance a customer was recommended solar PV at the energy assessment stage. However, when a full technical assessment was completed an over shading issue was identified. This meant that solar PV was no longer recommended, however without the Feed-In Tariff the dynamics of the PAYS package were altered, meaning it was less financially attractive for the customer to proceed.
- It is important for partners to consider that some customers will have 'pet' projects and measures. Particularly if they were very 'eco' or were doing a large refurbishment project. If these are deemed to be inappropriate, there is a risk that customers will drop out.

### 3.10.6 Quoting for jobs

- Partners often had to produce several quotes for combinations of different measure mixes for the same property until the householder was happy with the financial package offering.
- Estimating costs, before the work began, meant ultimate end-costs differed in some cases; this had to be managed and changed in the householders' contracts.
- Some contractors were reluctant to give fixed quotes but this would have been preferable for the pilot and would have made customer decisions and information much easier to clarify.

### 3.10.7 Installation stage

- Properties were individual and required bespoke solutions in many cases. There were certain groups of measures that often needed to be deployed together such as solid wall insulation and windows. There was (and is) a large amount of conflicting information on microgeneration technologies, some of which contained information that led to customer confusion on measure effectiveness.
- Effectively coordinating different tradespeople working on different jobs on site, at properties, concurrently, was challenging and time-consuming for partners.
- Some installations required expensive materials that were difficult for some smaller SME companies to source upfront. Due to rules surrounding PAYS, funds were not released until post-installation which was difficult for firms with low cash flow to accept.
- In year one of the pilot, Gentoo provided decoration vouchers to tenants, which helped to offset tenant concerns about disruption.
- Birmingham City Council reported that it was difficult to find suitable times for customer appointments especially as financial advisers and installers were not able to work out of general office hours. Birmingham City Council felt that out-of-hours flexibility could have helped to speed works up.
- A number of installers were interviewed and said that they would be keen to be involved with a similar scheme in the future, although one raised concerns that if the scheme were scaled up too quickly, they may have problems in adequately training the number of staff that would be required to meet the potential demand.

### 3.10.8 Making good

- B&Q/Sutton LBC, Birmingham and British Gas all provided a managed installation service for customers. As a result, they attempted to ensure the agreed specification of works was as detailed as possible to reduce any unanticipated costs. For example B&Q/Sutton LBC developed a detailed document outlining what was and was not included within the works.
- In most case, partners built in flexibility allowing the PAYS repayment charge value to increase or decrease. In all cases, once works were signed off a final repayment charge

confirmation was issued. Birmingham City Council included an upfront contingency in the financial offers to allow for additional costs without the need to reissue the financial repayment charge agreement.

- Partners have reported that re-costing for installation packages (sometimes up to four or five times) can take a great deal of time to carry out and incur additional administrative costs.
- Customers were responsible for sourcing installers and obtaining quotes as part of the Stroud/SWEA pilot. Instead, Stroud/SWEA provided advice and guidance whilst monitoring applications to ensure that only eligible measures were funded.
- In terms of 'making good', the installers said they typically build in costs for this on their quotes so it was seen as part of the installation service. However, unforeseen costs mid-way through installations can and do happen.
- Installers emphasised that there was an important distinction between making properties habitable again (which they were happy to do) and additional requested 'making good' work such as decorating (which they had reservations about).

### 3.10.9 Warranties

The following information was offered to householders concerning warranties of their respective PAYS packages:

- Gentoo: All warranties, guarantees and maintenance of installed measures held by Gentoo as landlord.
- Birmingham City Council: All warranties, guarantees and standards for installation were detailed in the individual measure quotation forms.
- B&Q/Sutton LBC: The measures were managed and installed by B&Q/Sutton LBC and, upon completion; customers were sent a guarantee pack including relevant certificates and a workmanship guarantee. All work provided by B&Q/Sutton LBC includes a two-year guarantee on materials and installation unless otherwise stated. Customers were also required to complete a sign-off form to show that they were happy with the work completed.
- British Gas: On all PV units the householders received a two year installation warranty, a 25-year performance warranty on the panels and a five-year warranty on the inverters.

## 4 Conclusions

The findings presented in this review have provided a valuable insight into how the different delivery approaches have driven householders to sign-up to different financial PAYS packages and install a variety of energy saving measures.

Many householders signed up to the PAYS package due to low monthly repayments, lengthy repayment periods and additional benefits such as Feed-in Tariffs. One third of householder participants expressed a motivation in reducing their environmental impact. The most successful marketing channels were delivered through local and national press.

The review has found that there is appetite among some householders to take out finance packages that include expensive measures, such as solid wall insulation. The majority of householders tended to choose financing packages that had long term repayment periods (e.g. 25 year periods). In addition, the PAYS Review found that some householders chose to contribute their own finances towards the cost of the energy retrofit package.

Across each of the PAYS pilots householder satisfaction, with the assessment stage, was high, despite all pilots delivering various approaches to this part of the householder journey. Due in part, to the comparatively high levels of environmental engagement a high proportion of PAYS householders had some ideas of what measures they would like to install prior to receiving their assessment. Householders recognised the value of the assessment as providing authoritative guidance on the measures they should install. The assessment influenced householder choice – particularly if they had intended to install measures not appropriate for the property.

Most PAYS householders were happy for a third party to manage the whole assessment, retrofit and finance processes though many householders felt that communication to the householder could be improved. Across all of the pilots, PAYS partners underestimated the high levels of customer care and administration that was needed - up to 2-3 days could be spent on each household.

Though the majority of householders were confident that the predicted savings and repayments they had been provided with would be achieved; householders did not seem to be verifying the predicted saving calculations (provided by home assessments) rigorously. Although savings on bills was cited as an important motivation to sign-up to PAYS, upon the installation of energy saving measures householders did not seem concerned with checking that their bills were showing savings. This may be because householders were already confident that they could afford the monthly repayments, agreed in the contract with the delivery partner. This finding is also supported by evidence from householders suggesting that when deciding on their financial and measure package, householders tended to think more about the affordability of the monthly repayments rather than the total package cost.

Each pilot has demonstrated significant success and though challenging to develop, and transfer, to the householder, innovative solutions can be identified to overcome many of the barriers associated with delivering energy saving measures into homes. Though PAYS has



used different financing models to that of the Green Deal these delivery approaches will be extremely useful for those who are interested in how householders are motivated into improving the energy efficiency performance of their properties that seek to deliver both energy bill and carbon emissions savings.

## 5 Acknowledgements

- The Energy Saving Trust and the Department of Energy and Climate Change would like to thank all those that contributed to this review. This includes householders for sharing their experiences with us, without them this review would have not been possible.
- Delivery partners for trialling and delivering such successful pilot schemes and enabling us to learn valuable lessons.
- Colleagues in the supply chain sector for their rich feedback around their involvement in the process.

## 6 Appendices

### 6.1 Appendix 1: The logic maps per pilot

### 6.1.1 B&Q/Sutton LBC logic map

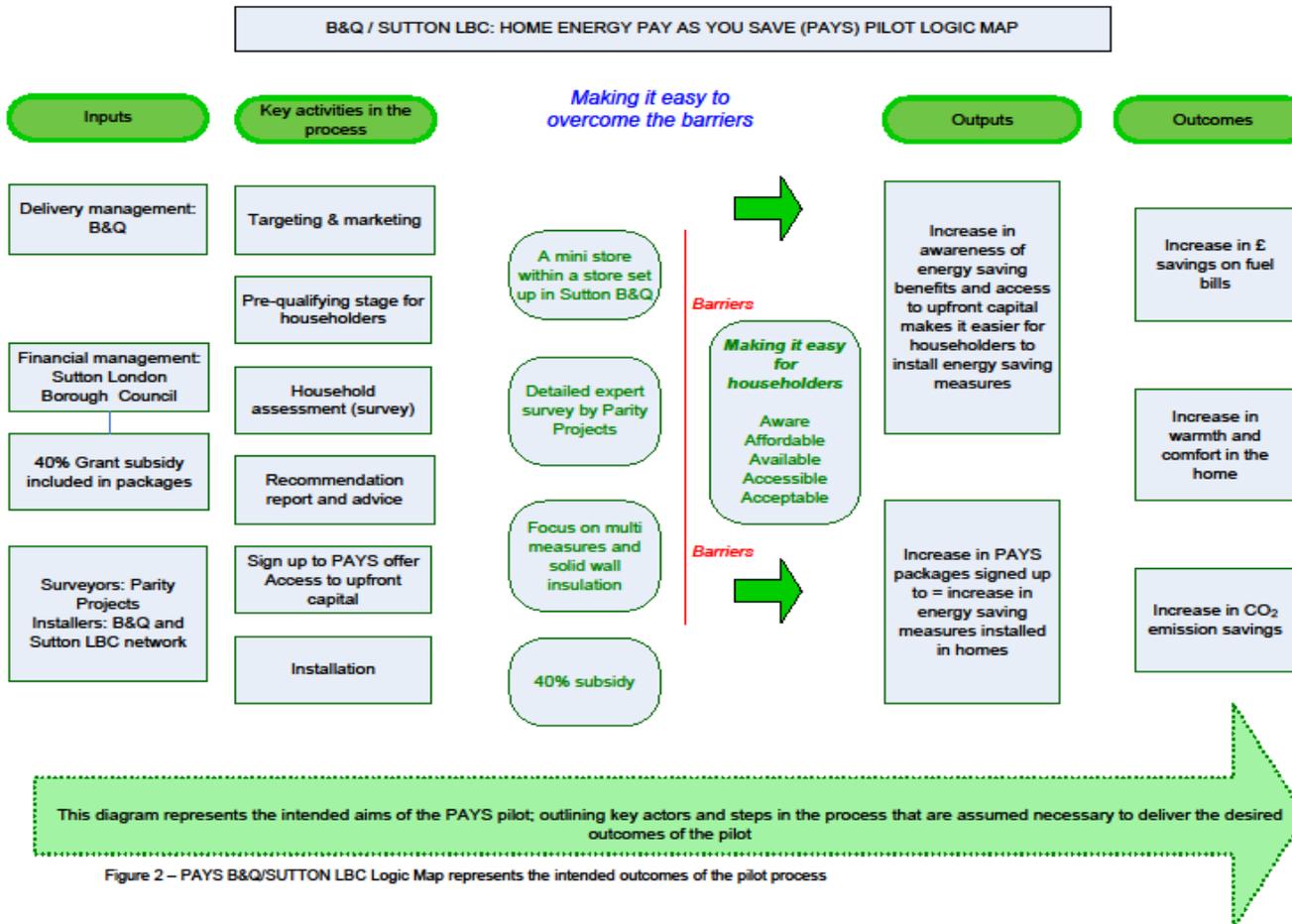


Figure 2 – PAYS B&Q/SUTTON LBC Logic Map represents the intended outcomes of the pilot process

### 6.1.2 British Gas logic map

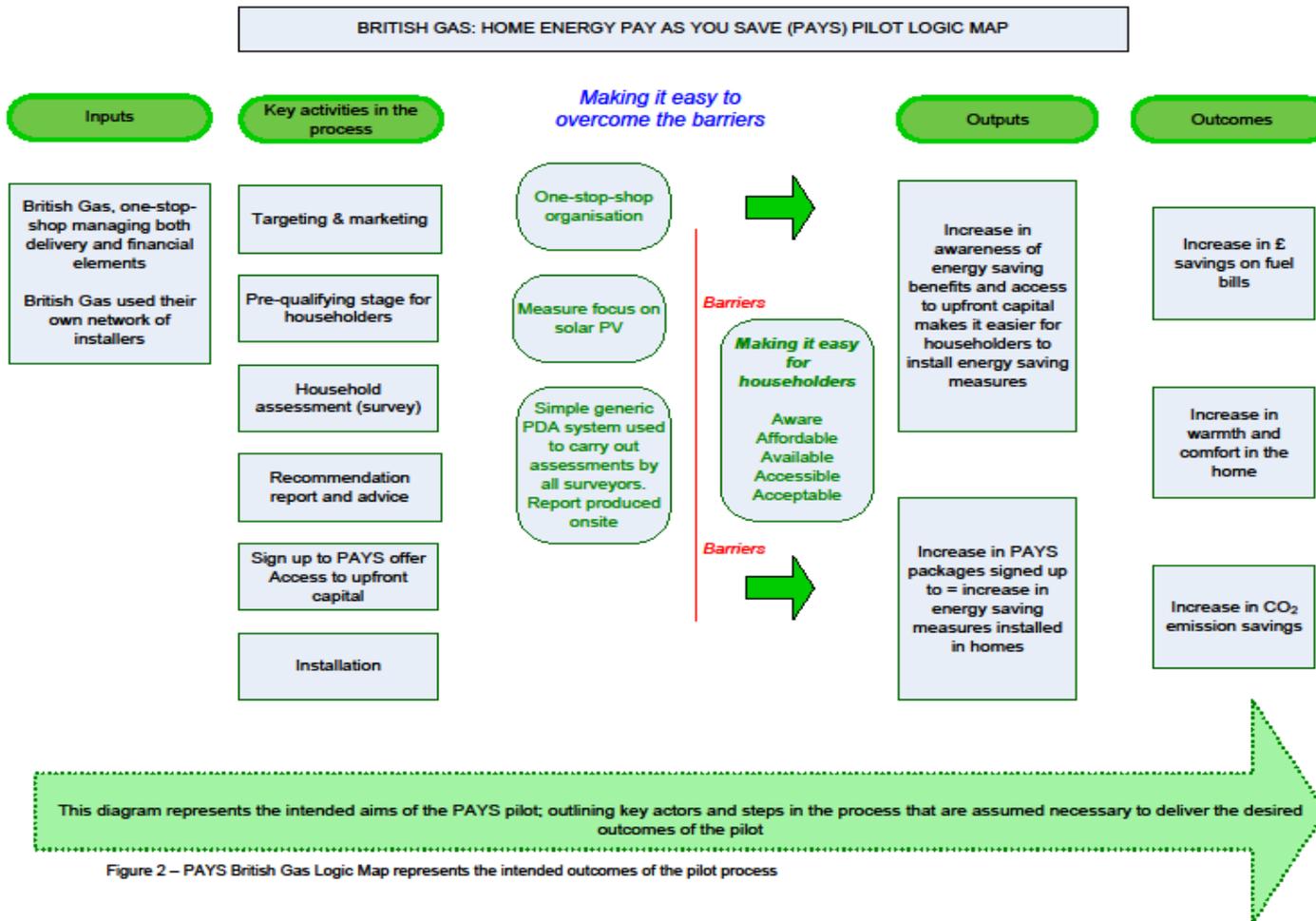


Figure 2 – PAYS British Gas Logic Map represents the intended outcomes of the pilot process

### 6.1.3 Birmingham logic map

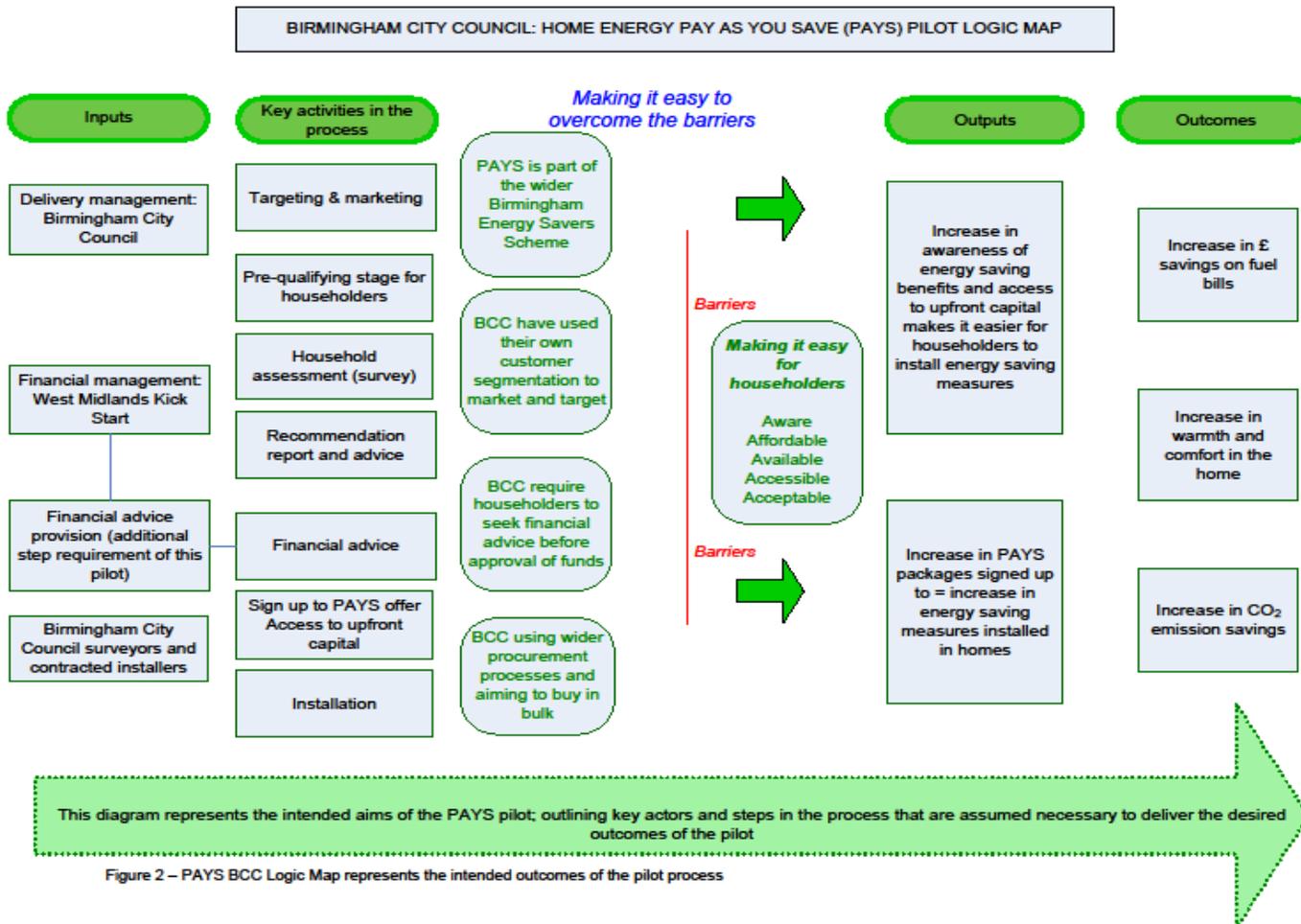


Figure 2 – PAYS BCC Logic Map represents the intended outcomes of the pilot process

### 6.1.4 Stroud/SWEA logic map

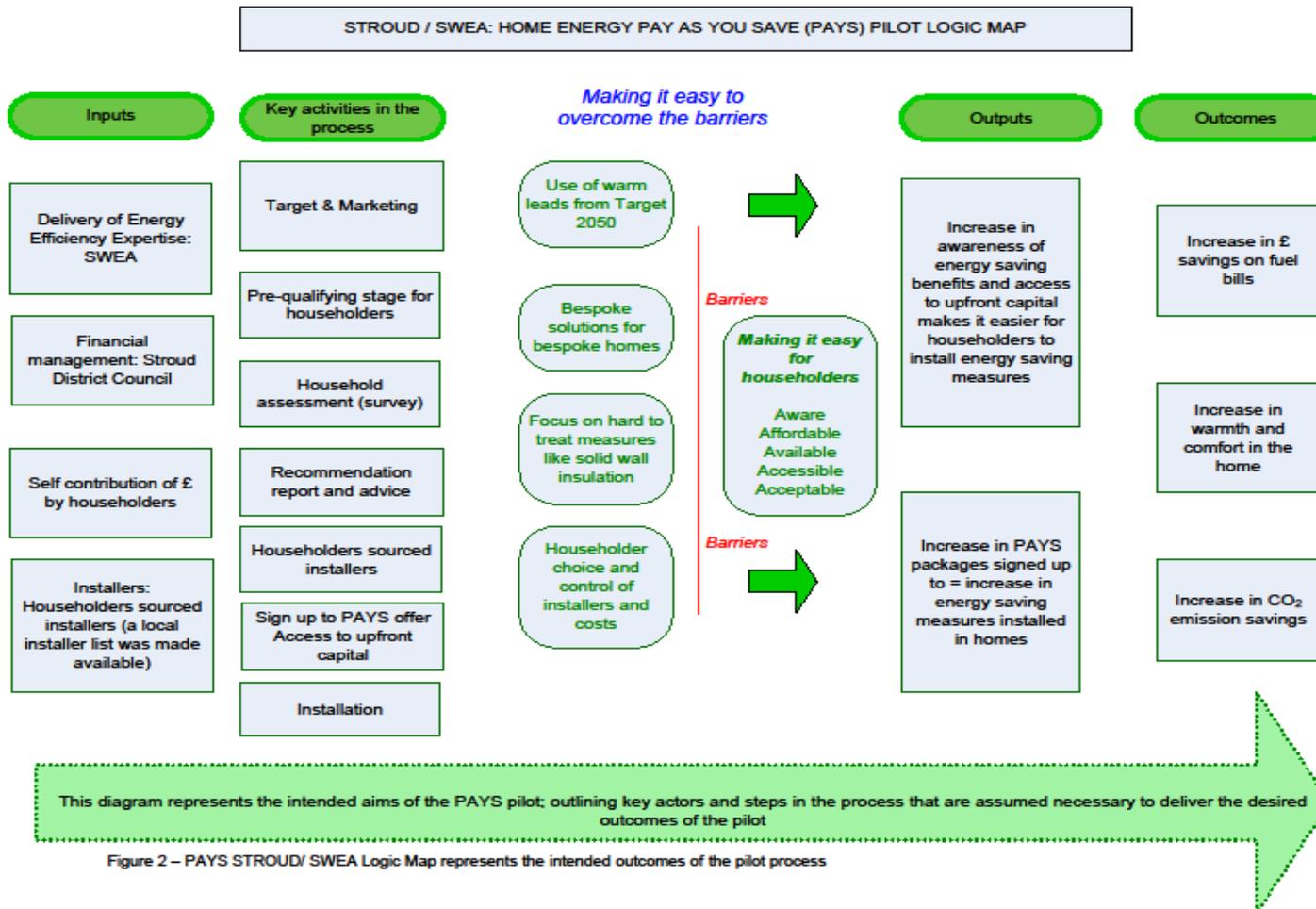


Figure 2 – PAYS STROUD/ SWEA Logic Map represents the intended outcomes of the pilot process

### 6.1.5 Gentoo logic map

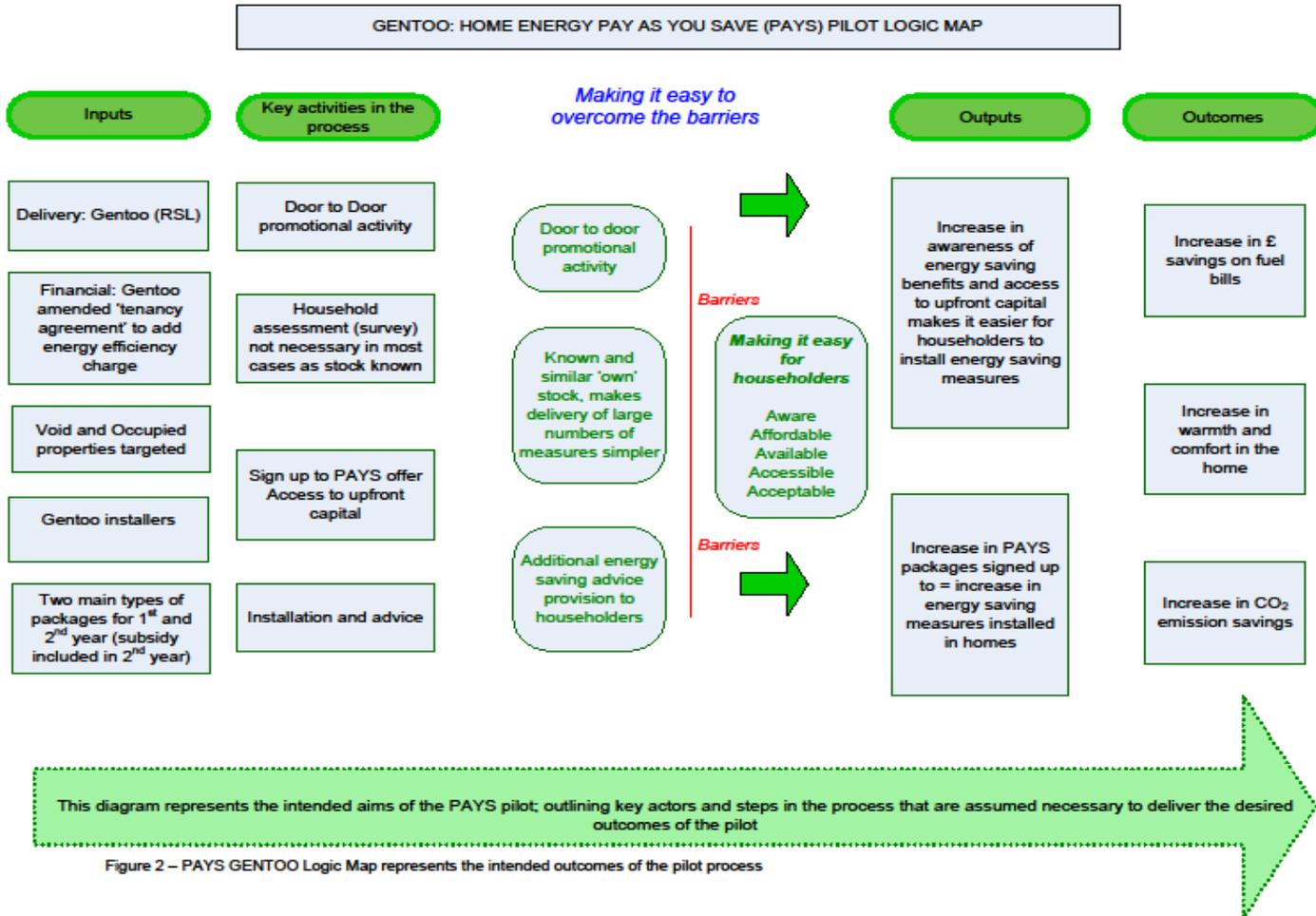


Figure 2 – PAYS GENTOO Logic Map represents the intended outcomes of the pilot process



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6.2 Appendix 2: The Operational Report

# **Home Energy Pay As You Save Operational Report**

August 2011

Prepared by:

Tom Chapman and Fiona Dykes

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# Home Energy Pay As You Save

## 1 Executive summary

### 1.1 Overview

Pay As You Save is a concept which could help to remove one of the biggest barriers for householders, the upfront financial cost of more expensive energy efficiency measures. The cost of energy saving measures is spread over a substantial period of time so that the repayments are less than the potential energy bill savings.

In order to test this concept, the Home Energy Pay As You Save (PAYS) pilot was announced in autumn 2009. It was envisaged that at least 300 householders across England would participate. The pilot tested a range of financing repayment and delivery options which would provide some lessons for the development of Green Deal<sup>1</sup>.

This report is the Operational Report which describes the management and administration, by the Energy Saving Trust, around the PAYS pilot, and related lessons that have been learnt.

### 1.2 Key fact and figures

- **5** pilot projects delivering Pay As You Save across England
- **£4m** funding over a two year period (2009 – 2011) provided by the Low Carbon Investment Fund (LCIF)
- **311** householders were signed up to a Pay As You Save finance agreement by the end of the pilot
- A range of measures were installed including external and internal wall insulation, draught proofing, floor insulation and solar PV.

### 1.3 Summary of operational lessons

Commercial organisations and registered social landlords as well as some local authorities were able to move quickly to develop and deliver effective finance projects.

Partners took a holistic approach to delivery, managing the process from house survey to the installation of measures. This removed the element of choice from householders, choice of installers and products. With the exception of Stroud District Council (SDC) who required householders to select their installers and obtain two separate quotes for comparison.

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<sup>1</sup>Please see the DECC website for details of the Green Deal. <http://www.decc.gov.uk>

In all of the projects, householders required more hand-holding and support than initially anticipated; this was an additional cost to delivery partners, estimated to be up to 2-3 days per household.

All partners used a different method for calculating savings for properties, RDSAP, NHER Plans or a customised model. None factored in increases in energy prices as they felt this would make the customer offer too complex.

The partners all chose to treat the debt differently; two local authorities chose to register the debt as a local land charge, two partners as personal debt with only one being able to attach it to the property.

Restrictions on the funding raised issues on the eligibility of minor measures such as radiators, lighting, showers, aspects of wiring etc.

The introduction of the Feed-in tariff on the 1<sup>st</sup> April 2010 increased the take up of PV. Registered Social Landlord, Gentoo considered installing PV in year 2 of their project, however, this raised issues around the source of the funding (Low Carbon Innovation Fund), use of the Feed-in Tariff and state aid. This was seen as too complex and time consuming an issue so DECC funding was not used for the PV installations. Gentoo were however able to use their own finance to fund the installation of the PV systems and receive the FITs.

Local authorities, of the different areas of the pilots, took different approaches to planning requirements for external wall insulation and it was important to clarify this at the beginning of any project, so delays were not encountered.

## 2 Background

Pay As You Save is a mechanism to pay for multi-measure retrofits of households. The concept is based on spreading the cost of refurbishment for a property over a substantial period of time, where the repayments are less than the predicted savings made from installing measures and the repayment charge is linked to the property not the person. It can remove one of the perceived barriers for householders: the financial cost of more expensive energy efficiency measures.

In autumn 2009 following a three stage selection process, five project partners were awarded funding to test a variety of elements of PAYS type projects across England. They were:

- 1 **B&Q Plc** in partnership with London Borough of Sutton (LBS) and Bioregional
- 2 **British Gas (BG)**
- 3 **Birmingham City Council (BCC)** in partnership with West Midlands Kick Start Partnership
- 4 **Stroud District Council (SDC)** in partnership with Severn Wye Energy Agency (SWEA)
- 5 **Gentoo Group**

The pilot was managed by a Core Delivery team at the Energy Saving Trust (EST) with input and advice from an Advisory Board and management on key decisions from a Project Steering Board. The Advisory Board was made up of key external stakeholders including Consumer Focus, Knauf Insulation and the National Insulation Association (See appendix A and B). The Project Steering Board was senior EST management, DECC and CLG (See appendix C).

### 2.1 Aim and objectives

This document aims to provide an overview of the operational lessons from the pilot, including details of how each of the five projects were structured. It supplements the final PAYS pilot report.

The pilot was implemented to test consumer attitudes and preferences to the PAYS concept by offering finance options to help meet the upfront costs of installing packages of energy efficiency and microgeneration measures to existing homes. It should be recognised that the pilot has been restricted from fully testing the PAYS concept by current legislation – under the pilot it has not been possible to attach the debt to the property except in the case of Stroud where they attached the debt to the property with a Land Charge.

The PAYS pilot had the following **strategic key objectives**:

- 1 **To understand householder attitudes and preferences for PAYS schemes, in particular around:**
  - a) The types of pilot partners that householders would prefer to deliver such schemes and would prefer to make repayments to.
  - b) The elements of PAYS finance packages, in particular the relationship between repayments and savings.



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- c) The energy saving measures, within PAYS packages, that householders desire and take up.
- d) How to encourage take up and overcome the barrier of high capital costs, particularly for more expensive energy efficiency and microgeneration measures.
- e) How to market and communicate these finance packages to householders.

**2 To understand the viability of different PAYS pilot schemes' delivery and finance models, with focus on:**

- a) The different delivery approaches in delivering energy efficiency and microgeneration measures to householders' homes.
- b) The different approaches to the home assessment and the calculations of savings and repayments.

## 3 Project profiles

### 3.1 B&Q PLC and London Borough of Sutton (LBS)

#### *Project summary*

This B&Q led PAYS project was part of the wider One Planet Sutton programme; a consortium of local partners including the London Borough of Sutton (LBS), B&Q Plc and BioRegional Development Group. The project aimed to sign up **100 householders** in the Borough of Sutton.

#### *Partners*

B&Q were the project lead managing the survey and installation of measures and LBS managed the finances, billing and credit checking of householders. BioRegional provided additional project support, evaluated householder satisfaction and assisted with marketing.

B&Q also contracted Parity Projects to provide in-depth householder surveys and produce the recommendations reports. In year one B&Q worked directly with an existing supplier ROK Insulation to provide the required measures. In the second year they decided to manage this in house and undertook a procurement exercise to select appropriate suppliers.

LBS provided the billing mechanism and obtained senior level buy-in to set up a separate repayment system that included full credit checks on householders. This latter process took longer for LBS to set up than anticipated.

#### *Administration*

B&Q conformed with the Consumer Credit Act by ensuring that they only provided advice on PAYS but not on specific products, which was done by LBS. LBS provided support and advice on any aspects of the finance agreement that a householder was not clear about. They raised and issued contracts between LBS and the householder.

B&Q developed a shop within a shop which aimed to be a one-stop shop for eco transformation. Eco Advisors were trained to confidently advise householders on how to make their homes more sustainable and will be based at this internal store.

Initially B&Q aimed to use their Service Delivery Site to coordinate and check kit before it is sent out to householders for installation. However, in practice this did not occur for the larger measures, such as internal & external wall insulation or double glazing etc. This was because there was less real-time logistics involved for these measures and more kit which came straight from the supplier to the property.

#### *The offer*

Householders who expressed an interest in the scheme completed a pre-qualifying questionnaire on the LBS website. They then received a call from a trained advisor from B&Q

who explained the scheme and assessed suitability. For eligible householders they received a whole-house survey to identify the potential measures, costs & timescales. B&Q worked with Parity Projects to carry out an in-depth home survey, which resulted in a report including detailed recommendations. This survey factored in how householders use their homes and appliances.

B&Q developed a fixed price agreement with contractors for the installation of measures.

The B&Q installation team completed a quality check to confirm the final installed cost of the eligible measures, prior to installation. Once the measures, costs and timescales were confirmed and the householder indicated his/her wish to proceed, the householder signed up to an order with B&Q for the relevant measures.

This project included a 40% subsidy, which meant that householders received 40% of the overall cost as a non-repayable grant. LBS sent information relating to the grant and loan available to the householder together with a form of agreement which the householder filled in and returned to them in order to apply for the scheme.

LBS made appropriate checks on the householders and their title to the property before approving their application. An agreement was then signed between the householder and LBS. LBS secured the debt against the property as a local land charge because they felt this carried the lowest risk. The financial agreement required the householder to pay back the outstanding balance in full if they move. But in the event of this not occurring the new owner of the property will become liable for the outstanding amount, as the debt is registered as a local land charge. Householders were able to take either a 10 or 25 year repayment plan.

The householder was required to sign both an order with B&Q for installation of measures and also a finance agreement with LBS to secure the finances. This does not appear to have been an issue.

Following this the measures were managed and installed by B&Q and on completion customers were sent a guarantee pack including relevant certificates and a workmanship guarantee. All work provided by B&Q included a 2 year guarantee on materials and installation, unless otherwise stated. Customers were also required to complete a sign-off form to show that they were happy with the work completed.

### ***Marketing and communications***

The project set out a strong householder engagement strategy – B&Q to work closely with both partners to market the concept to customers in the Sutton area, starting with the Low Carbon Zone of Hackbridge.

To market the scheme a full page advert was included in January's Sutton Guardian. This resulted in 150 phone calls to the B&Q call centre. In addition, within 1 day of the launch, 20 people registered their interest using the on-line form on the Sutton Website and this continued to increase. In February, the web was updated and closed to further enquiries because it was felt there were sufficient enquiries to process, nearly 400.

### ***Finance methodology***

The finance model used the BREDEM-8 methodology, with actual client heating times and thermostat settings (as allowed for in BREDEM) and using external temperature data from ASHRAE. In addition, the model included various refinements (such as solar thermal, PV and wall shading effects) from SAP 2005. Floor U value calculations were made using the CIBSE guide A methodology (as neither BREDEM nor SAP 2005 provides these calculations). In addition to the basic data provided in BREDEM, the model could access CIBSE's U value library, MTP data for major appliances, and boiler data from SEDBUK.

Once the model had been run, it was calibrated using the client's actual fuel bills to ensure that the calculation for the base scenario reflected the actual situation. This calibration exercise usually found that actual bills were within 5% of the calculation result, and the resultant multiplier (per fuel) was used in subsequent saving calculations for individual measures or groups of measures.

### ***Issues***

This project faced a number of issues around eligible measures. Despite a comprehensive document that clearly stated what could and could not be included in the scheme requests to include radiators has caused some problems. B&Q felt that replacing boilers could have an impact on the associated pipework and hence attached radiators. Without replacing the whole system they were concerned that they would be liable for any damage caused. DECC was clear that the scheme did not include these costs and any such problems had to be covered by the householder.

B&Q provided a lot of hand-holding to householders throughout this project. This was particularly noted once householders had signed an agreement. The required support ranged from 2 to 25 hours per household. This increased the cost of the project and increased the time taken to sign up customers.

B&Q had difficulty in sourcing properties that have already completed the harder energy efficiency measures, such as external wall insulation, that could be used as exemplars for householders to look round, to help them make measure decisions.

Initially there were some issues between LBS & B&Q that centred around the time it was taking for LBS to process householder applications for PAYS. B&Q felt that the delays were impacting on their delivery times – however these were resolved after the first year.

It was unclear if planning permission was required for external wall insulation. Initially customers were advised that planning permission was not required, however, subsequent guidance from the planning department indicated that full planning permission was needed. After several months it was agreed that planning would not be required on the basis that the external appearance of the property did not change. This caused severe delays to the customers involved.

In one instance a customer was recommended solar PV at energy survey stage. However when a full technical survey was completed an over-shading issue was identified. This meant that solar PV was no longer recommended. However, without the Feed-in Tariff the dynamics of the PAYS package were altered meaning it was less financially attractive for the customer to proceed.

### ***Added value***

The project provided a one-stop-shop for householders with the expertise of a well-known home improvement retailer B&Q with the assurance and trust of a local authority.

There was intense hand-holding support provided to householders. Across the pilot this project provided the most in depth and comprehensive household audit report.

There was a wide mix of measures installed under this project.

## **3.2 British Gas (BG)**

### ***Project Summary***

British Gas (BG) provided a holistic approach to householders managing all aspects of the PAYS product from customer acquisition to installation of measures. Their target was to retrofit **100 homes** in Surrey and Sussex. This project tested the energy supplier billing route.

### ***Partners***

The project was managed and implemented by BG using in house processes and their existing procured network of installers and suppliers.

Within BG a number of departments have been instrumental to implementing PAYS. The marketing department - to generate the demand required; the legal team - to confirm the consumer agreement content; the call centre - to be the first point of contact for enquiries; the Green Homes Energy Experts - to carry out surveys; and the Residential Microgeneration team - to co-ordinate installations.

### ***Administration***

BG used a combination of their CERT contracted insulation work force and their own surveying workforce to assess properties. The workload management and tracking were handled by Midas BG's insulation management system. This helped BG to manage the relevant job bookings and dispatch the appropriate surveyor/ contractor.

BG undertook an annual tendering exercise involving all insulation installers that followed EU Regulations in 2007. A preferred supplier list (PSL) of insulation installers was set up and all installers remain under contract until 2011 with the option to extend to 2014. All insulation prices included materials and labour and were fixed for a 12 month period with an annual review built

in. Work was allocated from the PSL based on location and capability to meet demand. Key performance indicators were put in place to measure performance and monitor quality of work.

BG acquired an IFA licence to sell finance products and comply with changes to the Consumer Credit Act where by finance products sold in the house must now include a 7 day cooling-off period.

***The offer***

BG energy experts carried out a whole house audit of each property providing recommendations on the most suitable measures. BG felt that in order for PAYS to work there would need to be a focus on PV and the Feed-in Tariff. Five PV options were offered:

	<b>Option 1</b>	<b>Option 2</b>	<b>Option 3</b>	<b>Option 4</b>	<b>Option 5</b>
kWp	0.84	1.4	1.68	2.1	2.52
Panels	4x210	8x175	8x210	12x175	12x210

These options were chosen based on the previous knowledge and expertise of BG. However, householder demand during implementation led to an additional 2 options being offered; both 6 panelled units 1.75 & 2.1 kWp.

Householder repayments were over a 10 or 25 year pay-back period. All eligible measures were offered under this project and a few ineligible measures were included in Year 1, they included energy monitors and lighting. On all units the householders received a 2 year installation warranty, a 25 year performance warranty on the panels and a 5 year warranty on the inverters.

BG proposed to replicate a true PAYS scenario as much as possible and so it has been allowed that the debt was attached to the property rather than the person. The final approved clause was as follows:

“If you sell the Property after 3 years from the date of installation we may, at our discretion, waive the repayment of the balance of the loan so you will have nothing more to pay. We will do this if you have used reasonable endeavours to transfer the responsibility for repayment to the purchaser and have not managed to achieve this.”

BG’s initial application proposed that their own energy customers would receive a bill showing the PAYS charge, fuel consumption and Feed-in Tariffs in one bill. Due to wider system changes taking place in preparation for Green Deal, it was not possible to integrate the PAYS charge on the fuel bill. Instead BG implemented a quarterly statement which was (is) sent to PAYS customers outlining the repayments.

***Marketing and communications***

A Guardian article was released in the south east in December 2009 that generated an excellent response with BG receiving over 500 enquiries. Following this, in February, a direct mail was started – aimed to market to 150,000 householders – using selected market research and BG’s segmentation model analysis. Batches of 12,500 every couple of days were released

in order to manage demand. After the release of two batches of 12,500, over 100 enquiries were received, therefore, further mail outs were stopped to manage existing enquiries. These enquiries plus the enquiries from the Guardian article were felt sufficient to achieve the original target of the 100 homes BG were aiming for (in the end 80 homes were achieved). Additional queries from householders, who were not eligible to the PAYS scheme, were still kept as contacts and redirected to other BG schemes.

### ***Finance methodology***

BG designed a PDA to produce Energy Savers Reports when on site in properties. These reports used savings figures from SAP, BG's internal Energy Savers Data January 2006 – October 2007 and the Energy Saving Trust's standard saving figures based on standard occupancy.

### ***Issues***

BG's project along with the Feed-in Tariffs led to a more single measure approach to PAYS. Monthly reporting figures for the pilot showed very few householders taking up the minor measures and that PV dominated packages. BG felt that this reflected the householder demand and that the targeted marketing (Guardian & direct mail) led to a particular householder type – i.e. those that were more environmentally advanced, early adopters.

BG felt that without Feed-in Tariffs PAYS would not financially stack-up, even over a 25 year period.

EST received a few complaints raised by householders in relation to the BG offer. These were householders who felt that they were not offered as wide a range of types and sizes of technologies as they would have liked; one customer wanted a 6 panel PV unit rather than a 4 or 8 panel unit. One householder felt that BG's offer was more expensive than others they had researched, though they realised the add-valued of BG organising the whole process for them.

### ***Added value***

BG has been able to bring added value by being such a large well established organisation. They were able to move quicker using existing processes adapted for PAYS. They were also able to buy kit in bulk bringing the cost down and provide a quality of service for householders.

They provided a one stop shop for PAYS householders for both installation and billing which was aiming to be less confusing for customers. They were also able to test how PAYS may fit into a future energy market – through the energy supplier/billing route.

## **3.3 Birmingham City Council (BCC)**

### ***Project Summary***

The Birmingham PAYS pilot formed part of the wider multi million pound programme to deliver energy efficiency and microgeneration to thousands of homes across Birmingham called the

Birmingham Energy Savers. Birmingham set an initial target of signing up 160 customers to PAYS packages.

### **Partners**

BCC led the project and were originally working with the Birmingham Credit Union, City Save. The Credit Union was to provide the financial mechanism through which householders would borrow and repay funds with BCC to manage the whole house assessment and the installation of measures. The debt here is classed as a personal loan.

However the Credit Unions came upon a couple of key issues that resulted in a significant change in project structure in February 2010. The two main issues were:

- 1 Credit Unions have more stringent FSA rules, in particular their capital adequacy rules would require them to have the funding on their books in advance of approving a loan which wasn't allowable under the rules of the PAYS funding.
- 2 The irresolvable issue for the Credit Union was the cost of administering the loans. Their model for the pilot relied on them being able to charge an annual admin fee or interest which would cover their costs. Treasury rules required any interest or admin charged on the DECC funds to be returned to DECC and Treasury.

The end result was a revised project proposed and approved in late February 2010 replacing the credit union City Save with West Midlands Kick Start. West Midlands Kick Start is an existing initiative funded by the West Midlands Regional Housing Executive to assist vulnerable homeowners to carry out essential repairs and modernisation of their homes. Kick Start administer this service using a third party finance institution – SML Homes.

BCC's Home Improvement Agency department led on householder eligibility, the whole house assessment, the installation of measures and provide support for delivery. West Midlands Kick Start and sub-contractor SML led on the financial assessment, providing financial advice, discussing options & recommendations.

### **Administration of the project**

There were a number of departments involved in the development and delivery of the project that have included:

- Home Improvement Agency - Customer engagement group
- Home Improvement Agency - Surveying team
- Home Improvement Agency - Contractors
- Kick Start – with subcontractors Street UK (loan administration and financial advice)

The project used existing BCC Contractors, identifying one overall project Contractor to manage the entire process; the survey, obtaining quotes and installation of measures.

### ***The offer***

A whole house assessment was carried out by BCC's in house property surveyors - each surveyor then discussed the potential schedule of works and projected savings the householder could expect to receive from measures installed. The householder was then given a report summarising the potential savings and asked to sign a form giving Street UK permission to contact them. Each householder was allocated a loan officer from Street UK to discuss the suitability of the person, the products on offer and carry out a credit check. In this case the PAYS charge was essentially applied as a loan.

The Home Improvement Agency assigned a contract manager to obtain 3 quotations for the works to be done and oversee the installation of measures. This was part of BCC's standard household repairs & maintenance works and a tight service level agreement was agreed with contractors (Home Improvement Service Contract 2009) to ensure work was achieved within certain timescales. Quotations were then discussed and approved by the householder before a final contract was signed.

BCC offered the full range of eligible measures under PAYS but their project was led by solar PV. This was the key measure under the Birmingham Energy Savers and BCC felt that it would encourage visibility of energy efficiency and help make the figures stack up with Feed-in Tariffs. All warranties, guarantees and standards for installation were detailed in the individual measure quotation form.

### ***Marketing and communications***

Comprehensive market profiling was carried out as part of the wider Birmingham Energy Saver's programme. This included using data from Experian, Ecocentre, the Energy Saving Trust and the Council's own intelligence.

The data was mined using different segmentation techniques to identify the most appropriate wards to target for Birmingham Energy Savers and the PAYS pilot. Three key wards were identified, Aston, Lozells & East Handsworth & Northfield. The segmentation clearly showed the householder type, property type, household income and green segment.

Originally Birmingham had planned to engage customers by a variety of routes including targeted door knocking, community group meetings, presentations to the local mosques' etc. However, in the end marketing was limited to householders who had expressed an interest in PAYS through national media coverage and referrals from the Energy Saving Trust Advice Centre.

### ***Finance methodology***

BCC used consultants Encraft to develop a finance model. Encraft designed and developed a series of look up table of measures and associated savings based on SAP2005. BCC used this as a reference system for producing house survey reports.

## **Issues**

In the initial stages of the pilot, the Birmingham pilot suffered a number of delays which significantly delayed progress. The delay in timescales was due to a combination of factors;

- Birmingham Energy Savers was a much larger project across BCC, which meant more internal sign off and hence a slower process.
- It took time to identify a finance provider for the scheme. Once appointed there was a number of issues to resolve around the streamlining of the customer journey. This had, at times, delayed the process of finalising agreements.
- Once the project was up and running, delays in receiving documentation from the loan provider also hampered progress. Due to slow progress Birmingham's funding was reduced from £800,000 to £400,000 in August 2010.
- The average cost of PAYS packages was £12,043, however, the original application was based on an average cost of £5,000 per property.

BCC experienced a relatively high drop out between the energy survey and signing of finance agreement. There was no one reason for the drop outs but generally BCC felt that customers were concerned about entering into long term financial commitments in view of the difficult economic situation.

BCC reported that it was difficult to find suitable times for customer appointments especially as financial advisers and installers were not able to work out of hours. BCC felt that out of hours flexibility could have helped to speed things up.

## **Added value**

As the PAYS pilot was part of the larger Birmingham Energy Savers Programme there were a number of added benefits. There was more senior buy in which helped ensure all relevant parties were on board. The overarching aim was to imbed energy efficiency upgrades into all aspects of the Council. PAYS was also able to link into existing established internal processes such as the Home Improvement Agency's service level agreements with Contract Managers. The knowledge and expertise from this pilot will be used to help design the current submission to the Public Works Board for £10m to retrofit about 1000 properties.

## **3.4 Stroud District Council (SDC) and Severn Wye Energy Agency (SWEA)**

### **Project Summary**

Stroud District Council (SDC) delivered their PAYS project as part of the wider programme of carbon reductions across Stroud – Target 2050. This climate change programme is an innovative and holistic approach. SDC set an original target of signing up **50 householders** to a PAYS package.

## **Partners**

SDC partnered with Severn Wye Energy Agency (SWEA) a local energy agency based in Gloucestershire. SWEA provided the first point of contact for householders taking them through a home survey, identification of eligible measures, support in obtaining installer quotes and hand-holding during installation.

## **Administration**

SDC required each householder to submit a comprehensive application form to confirm eligibility of the individual. All applications were checked by SWEA before submitted to SDC to ensure smooth processing when they reached the council. A formal legal agreement was then established between SDC and the householder to repay the costs of the measures testing the local authority billing route.

Each householder, in completing the application form, was subject to a credit check. As part of the financial offer approval process, Stroud/SWEA required proof from householders that they had obtained approval for the PAYS charge from their mortgage provider. In most cases this was approved without any problems. However, three customers had to pay a small fee of £30 and one customer was declined permission.

Next householders were asked to obtain at least 2 quotes for each measure to be installed and had to use an installer from an approved installer list. A key aim of the project was to develop the local supply chain with trained suppliers and installers and using this list help to further these aims.

The list required installers to have public liability insurance, be willing and able to deliver in the Stroud District and have membership of the relevant certification and guarantee schemes for those technologies, where they exist. For those technologies where an accreditation scheme did not exist SDC building control officers provided quality assurance, with reference to building regulations, and best practice guidance.

The approved list came with the following caveat:

*“Membership of the Sustainable Energy Installer Network does not imply that Severn Wye Energy Agency, Gloucestershire County Council or Gloucestershire District Councils in any way recommend either the technical solution or a particular installer. The contractual arrangement for each installation including cost, quality, performance and warranty is a direct contract between the client and installation company only. Severn Wye Energy Agency, Gloucestershire County Council and Gloucestershire District Councils do not accept any liability for work undertaken by companies participating in the Sustainable Energy Installer Network<sup>1</sup>.“*

General feedback from SWEA indicated that some installers were preferred over others and with the limited number this led to longer lead times and delays for installing measures.

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<sup>1</sup> [http://www.swea.co.uk/proj\\_Target2050.shtml](http://www.swea.co.uk/proj_Target2050.shtml)

In the early stages of the pilot SDC submitted a request to allow small deposit payments to installers to secure their services and kit. Many on the approved list are small outfits that don't have big cash flows so require assistance to start work. This was approved in February 2010.

### ***The offer***

On this project the debt was attached to the property with a charge registered against the property with the Land Registry. As a Local Housing Authority SDC has under the Regulatory Reform (Housing Assistance) (England and Wales) Order 2002 the power to provide financial assistance through grants or loans to secure the improvement of housing in the district. Given the necessary lead in time to enable legally required policy changes under the Order, SDC would have preferred to make a Local Land Charge under the order rather than the more complicated Land Registry Charge. If a property was sold, transferred or inherited, the loan must be repaid in full before the transfer or sale is completed. The Council also allowed applicants to transfer the loan to the new owner as long as they agreed to take on the loan debt and make the monthly repayments.

SDC do not hold a licence under the Consumer Credit Act, however, they were confident that as a Local Housing Authority, they were exempt under part 111 s21(2) of the Act. As 0% interest is charged, the charge to the property is exempt.

Under this project individual householders could only borrow up to £10k. SDC & SWEA decided that based on their experience under Target 2050 this was an acceptable amount per property and wanted to ensure the money reached as many households as possible. They also stipulated that each property had to have had the minor measures (such as loft and cavity wall insulation, where possible) before they were eligible to apply for PAYS. Any householder with costs more than the allocated £10k had to make up the remaining by contributing themselves.

On working through some examples of the PAYS offer, using static energy prices, SWEA realised that it was impossible for repayments to be less than the savings from the installed measures, particularly with no subsidy other than the Feed-in Tariff for microgeneration. They requested and were approved to offer 4 options to householders:

- 1 Repay over 10 years where repayments less than savings
- 2 Repay over 10 years where the repayments are more than savings
- 3 Repay over 25 years where repayments are less than savings
- 4 Repay over 25 years where repayments are more than savings

This project offered the householder all major measures and had an excellent take up of all types of measures including internal and external wall insulation. SDC received requests to include additional measures such as sloping ceiling, LED lighting and radiators. Sloping ceiling insulation was approved as a measure however radiators and lighting were not.

### ***Marketing and communications***

The marketing for this project was targeted and limited to a direct mailing to warm leads developed under the Target 2050 project. 183 householders had already received property surveys over the previous year. Some of these customers have had a long time frame to think about the proposed measures and PAYS presented them with the perfect opportunity to take action.

Other limited marketing activity was done through the local media in press articles however the majority of customers were engaged via the Target 2050 scheme.

SDC required no additional marketing in year two of the pilot. Instead they followed up with those who had expressed an interest in year one. In addition they also received a number of enquires generated by word of mouth, which helped to increase the number of customers. As a result, Stroud was conscious to manage demand carefully to avoid raising too many leads.

### ***Finance methodology***

SWEA completed home energy assessments using NHER Plans software to calculate the savings based on a standard occupancy and where appropriate also factored in Feed-in Tariff figures. On deciding which measures to install, a calculations spreadsheet along with an introduction letter were provided. The calculations spreadsheet provided the indicative costs, savings and payback period for each repayment scenario.

### ***Issues***

One popular installer on the SDC installer list stopped trading due to cash flow issues. At least five householders were affected and this caused a significant delay to those involved.

Pilot timescales were tight and this discouraged some participants from taking part in the scheme or forced them to drop out. Considering the large sums of money and scope of works being undertaken Stroud feel that increased time would have been beneficial allowing customers to consider the options.

As part of the loan approval process, Stroud required customers to obtain proof of the approval, for the PAYS charge, from their mortgage provider. In most cases this was approved without a problem. However, three customers were required to pay a small fee of £30 and one customer was declined permission.

PAYS was attached to the property with a charge registered against the property with the Land Registry. In a small number of cases, properties were not listed on the list registry. As a result a small fee was incurred to set this up, which the customer had to pay.

### ***Added value***

SDC & SWEA used their existing knowledge and experience of working together to maximise the funds made available to them from DECC.

A key aim was to bring added value by developing the local supply chain using local installers and local manufacturers where possible.

This project was more householder led than the other pilots, providing the customer with continued choice throughout; choice on the measures to be installed, the installer, the supplier and the right financial option for them.

The exemplar home network in Stroud, part of Target 2050, proved to be a valuable tool in educating homeowners on the measures available including internal and external wall insulation and enables people to talk directly to householders.

### 3.5 Gentoo Group

#### ***Project Summary***

Gentoo Group is a registered social landlord in the north east. They tested 'pay as you save' as a financial model within social housing aiming to retrofit 100 of their properties with energy efficiency measures. Due to delays in signing of the year two package, installation work continued until June 2011.

#### ***Project Partners***

The project was led by Gentoo Green established in 2007 to oversee improvements in environmental performance by taking in a holistic approach to environmental sustainability.

Other partners included Gentoo Sunderland which owns approximately 29,500 properties in the Sunderland area and provided the properties, the billing mechanism and customer services for the pilot. Gentoo Construction was assigned to carry out refurbishment and maintenance works on properties with a variety of sub-contractor installers and suppliers who install measures. The project was also supported by Gentoo Corporate Services that provide the legal and financial support for managing the project.

Corporate Services also provided a central procurement service that deals with all procurement across the Gentoo Group this includes between the Group, i.e. between Gentoo Construction and Gentoo Sunderland. All large contracts for equipment, installers, maintenance & suppliers where appropriate follow OJEU.

#### ***Administration of the project***

Gentoo Group instigated a modernisation project in 2001 to bring all their housing stock up to and above Decent Homes by 2011. The Decent Homes Standard was achieved across the whole stock by 2005 and Gentoo Group has gone on to continue their improvements by upgrading kitchens and bathrooms. Alongside this, the Gentoo Group has a heating programme to update systems by 2018.

In year one to select households for PAYS Gentoo aimed for an equal split of void and occupied properties. It focused on properties that had the most inefficient boilers and glazing but also households that are currently lower down the heating upgrade programme where householders are willing to pay for upgrades. In the second year, Gentoo selected only occupied properties due to the difficulties faced in finding appropriate void properties in year one, and the delay in re-letting, as a result of the energy efficiency works being carried out.

The claim process for Gentoo was more complex than for any of the other partners. It was agreed during the set-up year that a two claim process of 90% upfront and 10% on completion would be implemented. The standard process was adapted to accommodate the void properties and the fact that tenants would not sign an agreement until the works were complete. Supporting documents of valuations at claim 1 and a signed tenancy agreement at claim 2 were provided to trigger payment.

Gentoo's first claim was submitted with standard average costs for each property rather than actual costs. It proved difficult for the Group to identify the individual PAYS properties from their wider modernisation programme in their existing processes and paperwork.

Gentoo provided in-depth advice to participating tenants on how to use their Pay As You Save measures. This included an 'easiguide to PAYS' booklet which outlined the benefits of the energy savings measures, and general advice on how to be more energy efficient. In addition quarterly visits were carried out by Gentoo, for the first year, after measures were installed to take meter readings and provide advice.

### **The offer**

As part of their modernisation programme Gentoo had already installed a significant number of the minor measures in their housing stock, this included cavity wall and loft insulation.

In year one Gentoo entered into a 20 year agreement with all their tenants extending this to 25 years in the second year to help the cost of installing solid wall insulation stack up. Unlike the other pilot projects, Gentoo installed a standard package of measures across all PAYS properties:

- Double glazing
- Boiler up-grade
- Heating controls and TRV's
- External wall insulation (*Year two only*)
- Lighting – not paid for by PAYS
- Advice – not paid for by PAYS

All warranties, guarantees and maintenance of installed measures sit with Gentoo along with any after care which consists of a further home visit and continued updates on energy efficiency.

### ***Marketing and communications***

A marketing and communications plan was developed and implemented by Gentoo. Gentoo had an intimate knowledge of their property stock and identified the appropriate properties eligible for the above package of measures. Any marketing was carried out through existing engagement channels, such as tenant associations, door to door activity, and word of mouth. Properties at the bottom of the improvement list were offered the above package in order to allow for earlier improvements.

To select **void properties** Gentoo Sunderland focused on their 2000 per annum turnaround. When retrofit these properties are advertised on the Choice Based Allocations Scheme with the additional energy efficiency charge. This ensured that potential tenants made a choice to select a property with an additional charge before a tenancy agreement was signed.

An issue arose with a number of properties where work had begun on PAYS but the additional energy efficiency charge had not been fully explained to tenants. These properties had been allocated to high priority tenants and a member of Gentoo Green was not able to attend the sign-up stage. This was due to the difficulty in integrating such a unique concept very quickly into existing allocations practices. In total, eight properties felt that the concept could have been better communicated at the allocation stage. The originally quoted number of properties signed by Gentoo in year 1 was 52 and this issue has brought the total down to 45 households.

To select **occupied properties** Gentoo Green carried out localised events on a street by street basis. These were often done in conjunction with existing events/activities such as 'bingo night' to maximise opportunities. A similar approach was used to engage properties in the second year.

### ***Finance methodology***

All properties had an EPC carried out before and after the measures were installed – this included the void properties. Gentoo Group obtained the energy data for all properties both before and after measures were installed. This proved difficult for void properties where data was requested from energy suppliers. Gentoo will be using this data to analyse actual and estimated savings on the PAYS properties. This Gentoo report will be released in 3 stages over the next year with a final report expected in early 2012.

### ***Issues***

When Gentoo submitted their first year claim to EST quality assurance checks discovered that additional ineligible measures had been installed on nearly all properties. The measures include:

- Decorating vouchers
- Smoke detectors
- Flame effect electric fires

It was approved that decorating vouchers would be allowed for year one only but smoke detectors & fires wouldn't be. Gentoo had sought to include electric fires as due to the removal of old boilers a replacement fire was required.

In year two Gentoo considered installing PV on properties however this was problematic given the capital funds derive from central government (Low Carbon Innovation Fund) and Gentoo wished to reinvest the Feed-in Tariff which raised state aid questions. As a result the inclusion of PV was withdrawn from the DECC funded work. Gentoo instead utilised their own finance to carry out the installation of the PV systems and are consequently receiving FIT payments.

### ***Added value***

One of the benefits of this project is that Gentoo Group already has existing relationships not only with tenants but also with installers and suppliers. The existing relationship with tenants allowed for new ideas & products to be introduced and accepted with good faith. As a large organisation Gentoo Group had the additional benefit of buying and installing in bulk giving better cost efficiencies with scale.

Gentoo was able to provide a package of measures to upgrade properties outside of their modernisation project, where these tenants were likely willing and able to pay for it bringing additional comfort as well as energy savings.

Gentoo provides on-going maintenance and after care services gave tenants security and assurance on the measures installed.

## **3.6 Project Management**

### ***Selection process***

Selection of the pilots was done using a 3 stage application process:

- review & scoring against a set of criteria of all applications submitted by a Selection Committee (29 in total were received) – a short list of 16 were put forward
- the short listed projects were reviewed and scored against a new set of criteria to ensure a cross section of projects were chosen - 9 were selected for interview
- following interview stage 5 projects were selected

With such tight timescales to select projects it was felt this was the most robust process to ensure projects that were already significantly developed. With no administrative costs included the Energy Saving Trust attracted partners that were willing and able to cover the cost of implementing the pilot. Potentially with more development time and the inclusion of administrative costs very different projects would have been funded.

## **Contractual arrangements**

Energy Saving Trust set out a clear set of milestones in key contractual documentation that was required to be submitted by each project during the set up phase. These documents were received to varying degrees of competency. Partners did not always submit these documents within the specified timescales, BCC and Gentoo and their documents for explaining savings and calculations of measures.

Each partner contract contained a data protection clause that stated the Energy Saving Trust would contact them in the future for evaluation purposes. However, for some pilots this was not included in the householder contracts at first, and so had to be incorporated into them after the pilot commenced to ensure feedback could be obtained. This has since been included for Phase 2.

## ***Pilot Structure***

Governance of the pilot has worked extremely well and has included:

- Project Steering Board – Senior EST, DECC & CLG
- Advisory Board – external experts
- Pilot partners – 5 project partners

Key documents included;

- Project Initiation Document – outline of project with aims & objectives
- Risk register
- Issues log
- Communications plan
- Partner monthly reporting

## ***Eligible measures***

In addition to the eligible measures, the following ineligible measures were identified:

- Radiators
- Decorating vouchers
- Electric fire places
- Smoke alarms
- Energy monitors
- Stand by devices
- LED lighting

A request for sloping ceiling insulation was approved.

## **Payment of capital to partners**

There have been continuing difficulties around the claiming process of DECC funds. The objective here was to have a consistent process across the pilot, however, following the first claim each project faced issues when submitting the supporting evidence. The Energy Saving

Trust took a hard and clear line on what was and was not acceptable – where payment could only be made on actual costs on eligible measures and individual costs must be shown.

Payments were done in 2 claims 50% on claim one, when a householder signs a finance agreement and the remainder at claim two, when the work has been completed. This was with the exception of Gentoo, who had 90% of their claim one, when work has been started and 10%, when a tenant signed an amended tenancy agreement.

When submitting supporting evidence Gentoo struggled to show actual costs and instead provided average costs, they also struggled to separate individual costs for measures from their existing internal processes. British Gas struggled initially to provide a breakdown of the individual elements of each claim.

The Energy Saving Trust implemented very robust quality assurance on the partner claim process. Supporting evidence for each householder is checked and cross checked against the monthly report. Supporting evidence is checked for eligibility and for accuracy.

## Appendix A – Membership of Advisory Board

Mike Fairey	EST Non Executive Director / Chair of Audit and Assurance (Chair)
David Adams	Willmott Dixon
Neil Marshall	National Insulation Association (NIA)
Tim Allen	Local Government Association (LGA)
David Dalby	Royal Institute of Chartered Surveyors (RICS)
Prashant Vaze	Consumer Focus
Frances Williamson	Energy Retail Association (ERA)
Andrew Eagles	Sustainable Homes / SHIFT Project
Paul Cooper	TSH Architects
William Gillis	Warm Zones CIC

## Appendix B – Advisory Board

### Energy Saving Trust

### Finance Project Advisory Board

#### **Contents:**

- Terms of Reference
- Composition
- Meeting structure

#### **Terms of Reference (ToR)**

##### **Purpose**

The role of the Finance Project Advisory Board was to provide the Energy Saving Trust with technical and expert guidance on the development and delivery of the Finance Pilots. The Pilots were testing the broad feasibility of key aspects of the Pay as You Save concept on behalf of DECC.

The Project Advisory Board was to:

- provide technical and expert guidance on the development of the project and pilot criteria
- to provide recommendations on pilot selection
- regularly review the progress of chosen pilots during the course of the pilot delivery
- review project learning and recommendations
- support the dissemination of results

The Finance Project Advisory Board was not an executive board. All decisions and responsibility for delivering the pilots remain with the Energy Saving Trust.

##### **Role of members**

Members would:

- provide relevant knowledge and expertise to guide and advise the Energy Saving Trust
- be champions for the Trust's activities on the pilots and help foster awareness and support among key stakeholders
- provide such guidance as necessary to assist the Energy Saving Trust and the chosen pilot partners in delivering the project
- where appropriate to bring in other external expertise as required to assist the development or delivery of the project

Members were expected to attend bi-monthly meetings during the development year (Sept – Dec 09) and quarterly meetings thereafter. There was sometimes the need to call on individual member's expertise in between meetings.

### **Benefits to members**

Members of the advisory board benefited from:

- influencing the Energy Saving Trust activities on the Finance Pilots
- having first sight of the evaluation and research work undertaken by the Trust on project
- sharing views with other members of the Board
- to influence the recommendations put forward to DECC as a result of the pilots

### **Composition**

The Board had a maximum of 10 members; The Board was a representative group, chosen for their individual expertise rather than representing a specific company or wider stakeholder group:

In addition a representative from DECC was invited as an observer.

The chair of the Board was Mike Fairey, who has a wealth of expertise in the finance industry and Non-Executive member of the Energy Saving Trust Board.

### **Meeting Structure**

- meetings were held bi-monthly during the development year (Sept – Dec 09) and quarterly thereafter. Additional meetings were sometimes held at the Chair's discretion.
- invitations to meetings were sent with maximum notice and the agenda and papers were provided in advance electronically.
- meetings normally were held in central London and lasted no longer than 2 to 3 hours.
- minutes of meetings were sent to the members electronically within two weeks of each meeting.

## Appendix C – Pilot Project Steering Board

### Energy Saving Trust

### Home Energy PAYS Pilot Project Steering Board

#### **Contents:**

- Terms of Reference
- Membership
- Role of Members
- Meeting structure

#### **Terms of Reference (ToR)**

##### **Purpose**

The role of the Project Steering Board was to provide an executive body to govern and support the successful delivery of the project.

The Project Steering Board would approve the following:

- sign off the project plan and any major changes to scope during the life of the project
- to sign off on key milestones to enable project to move to the next year, including ensuring the appropriate internal agreements for their organisation/department are in place to do so
- participate in and sign off on the selection of pilots
- regularly review pilot progress and project management controls
- Agree the final report recommendations, dissemination of results and exit strategy for the project.

NOTE: due to the tight timescales required to set up and deliver the project not all sign offs were able to be done within board meetings; some sign offs were carried out via email between meetings.

##### **Membership (at commencement of pilot)**

EST

Fraser Winterbottom, Chief Operating Officer (Chair)

Marian Spain, Director Strategy

Justine Prain, Project Director

## DECC

Helen Martin, Heat & Energy Saving Strategy (replaced by Stephen Penlington, Green Deal Finance and Legislation team)

## CLG

Stephen Penlington, Social Housing Sustainability (moved from CLG to DECC during the pilot to take over from Helen Martin while on maternity leave)

### **Role of members**

EST Members would:

- provide relevant knowledge and expertise to support the delivery
- sign off project milestones on behalf of EST
- champion the project with other senior managers at EST
- senior stakeholder engagement and briefing

The DECC Member would:

- provide relevant knowledge and expertise to guide and advise the project
- sign off project milestones on behalf of DECC
- to manage the sign off and agreement of other government departments as required
- champion the project with the appropriate people within DECC and wider stakeholder groups

The CLG Member would:

- provide relevant knowledge and expertise to guide and advise the project
- champion the project within the appropriate areas of CLG and its agencies
- draw in expertise to support the development of the RSL funding model

### **Meeting Structure**

- meetings held monthly. Additional meetings held at the Chair's discretion.
- the agenda and any papers sent out at least 48 hours in advance of meetings
- meetings were normally held in EST Dartmouth Street office and lasted 1 hour.
- minutes of meetings sent to the members electronically within a week of each meeting.



**energy saving trust<sup>®</sup>**

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