

RESEARCH REPORT

Green Deal Incentives Research

Produced by GfK NOP

The views expressed in this report are those of the authors, not necessarily those of the Department of Energy and Climate Change (nor do they reflect Government policy).

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1. Executive summary

1.1 Overview

The Green Deal is an initiative which will enable households and businesses to make energy saving home improvements to their properties. The scheme helps customers pay for some or all of the improvements over time, through their electricity bill. Repayments will be no more than what a typical household should save in energy costs.

GfK NOP was commissioned by the Department of Energy and Climate Change (DECC) to carry out research to inform the design of the Green Deal incentive packages (funded from the £200m allocated to DECC to help boost early uptake).

In order to provide the required evidence GfK NOP interviewed a representative sample of 2,050 owner-occupiers and private rented tenants aged 18+ across Great Britain. Social rented tenants were not included in the target audience because of complexities associated with their tenancies and the way in which they will interact with the Green Deal.

The research used conjoint analysis, which is a technique used to understand the relative appeal of different attributes and how much of a driving factor they are in respondents' interest in taking up a Green Deal package. The key attributes and associated levels tested in the research were:

- Incentive type (cash payment from government, council tax rebate, credit on energy bill and credit towards other home improvement services)
- Incentive level (ranging from 0% to 45% of the cost to the consumer of the energy saving home improvement installations)
- Green Deal finance interest rates (ranging from 6% to 12%)
- Payment options (using Green Deal finance or paying in full upfront).

This report provides an indication of the features which are most likely to drive uptake of the Green Deal and the relative differences in uptake depending on the level of different features (i.e. increasing interest rates, incentive levels etc.). It therefore provides modelled estimates of potential uptake of the Green Deal. However, these should not be understood as a market forecast for a number of reasons including:

- Estimates are based on a new and complex concept. Although the Green Deal was explained to respondents during the survey, there are a variety of factors not included in the research that are expected to influence uptake. These include, marketing activity by Green Deal providers, reputation, word of mouth, whether the customer is at a key trigger point such as moving house or refurbishing their property, tailored advice, competitive activity and government awareness raising activities.
- The packages were based on an average property type (three bedroom semi-detached house) – in reality there will be a range of house types and the packages available to

these households may result in different patterns of uptake across different customer groups.

- Estimates are a short-term 'snapshot' based on respondents' current financial, economic and household situation.
- Estimates are only based on the tested attributes and measures.

In reading this report it is important to focus upon relative differences in uptake rather than absolute uptake. The uptake estimates discussed in this report are shown for illustrative purposes.

1.2 Which energy saving home improvements are needed?

The research focused upon four energy saving home improvements (condensing boilers, loft insulation, cavity wall insulation and solid wall insulation). Whilst more improvements will be included under the Green Deal scheme, the number included in the research was kept at this level because of practical limitations on the number of factors that can be included in conjoint research, and that these are some of the common energy saving home improvements that customers might install under the Green Deal.

In all, two thirds of respondents 'needed' at least one of the four energy saving home improvements which were included in this research. These are the respondents who undertook the conjoint task and it is this group (n=1,267) which this report focuses upon.

1.3 What level of incentive maximises uptake?

Of the attributes tested, incentive level has the greatest impact upon consumers' likelihood to take up the Green Deal. As would be expected, higher incentive levels are associated with increased uptake. Offering a 45% incentive (calculated as proportion of installation costs to the consumer) resulted in uptake that is more than twice as high as when no incentive is offered.

While this research was not designed to set an optimal level of incentive, it was hoped that it might show a 'flattening out' of uptake at some point. The research shows that any incentive level has an impact on uptake; even a 5% incentive resulted in an increase in uptake of 0.6 percentage points (equating to an overall increase in uptake of 22% relative to no incentive). When incentive levels increase from 0% to 15%, uptake increases by 1 percentage point (a 48% increase overall). When incentive levels increase from 0% to 45%, uptake more than doubles as it rises from 2.1% to 4.3%.

Higher incentive levels were most attractive to higher income households (those earning >£37k p.a.), owner-occupiers, households living in newer properties and those who only needed one energy saving home improvement installed.

1.4 What is the most effective incentive type for driving potential take-up of the Green Deal?

Incentive type has a less marked impact upon Green Deal uptake than incentive level. A cash payment from the government (to be paid once the improvements had been made) is associated with the highest level of uptake while credit on the consumers' energy bill is associated with the lowest level of uptake. However, the difference in uptake between these two incentive types is 0.3 percentage points (or 7% lower overall). A council tax rebate also proved less popular than a straight cash payment.

Analysis of the key sub-groups shows few notable differences in uptake based upon difference incentive types.

1.5 What are the relative differences in uptake at different rates of interest?

As well as testing the impact of incentives upon Green Deal uptake, the research also tested the impact of the interest rates which would be payable on the amount financed through the Green Deal finance package.

As with incentive type, it is clear from this research that interest rates make little difference to Green Deal uptake levels. As interest rates rise uptake falls, however the drop in uptake is not particularly marked (especially when compared with the impact of incentive levels). Uptake based upon a 12% interest rate is 0.3 percentage points lower (or 7% lower overall) than the level of uptake associated with a 6% interest rate.

Sub-groups which were more sensitive to changes in interest rates included households which find it hard to heat their home and who are struggling with bills and those who need solid wall insulation (which is the most expensive improvement tested in the research and one with a 20 year repayment term attached).

1.6 How does take up vary when consumers are offered the opportunity to pay in full upfront outside the financing mechanism?

The research also tested the impact of choice over how energy saving home improvements are financed. Respondents could either pay for the improvements through a Green Deal finance package or they could pay the full cost upfront. They were eligible for the incentive, however they chose to fund the improvements.

The highest level of uptake occurs when consumers have the option of financing energy saving home improvements either with or without Green Deal finance. When given the option, 45% would use Green Deal finance while 55% would pay for the improvements upfront in full. When consumers are not offered the choice uptake drops slightly.

- when consumers can only pay for improvements upfront (and still receive an incentive) uptake drops by 0.3 percentage points (or 7% overall)

- when consumers can only pay for improvements with Green Deal finance uptake drops by 0.7 percentage points (or 16% overall).

1.7 Implications of the research

The research suggests that around two thirds of owner occupied and private tenanted households in Great Britain have not already installed the energy saving improvements tested in this research¹. It is this group who stand to potentially benefit from the Green Deal. In order to ensure that uptake amongst this group is as high as possible the following findings should be borne in mind:

- Of the variables tested incentive level has the most marked impact upon uptake, with even a small incentive having a clear impact on respondents' willingness to take out energy saving home improvements.
- While incentive type does not have a particularly marked impact upon uptake the findings indicate that a cash payment from government is the preferred incentive type. This is true regardless of incentive level.
- As with incentive type, interest rates also have a limited impact upon uptake but the findings do indicate that they should be as low as possible to encourage take up. The slightly higher uptake associated with low interest rates applies regardless of the incentive level.
- As interest rates increase, respondents are more likely to pay for improvements up front, rather than by using Green Deal finance. Again, this applies regardless of the incentive level. So, in order to maximise uptake of the finance package interest rates should, ideally, be as low as possible.
- The findings also indicate that it would be preferable to offer consumers a choice over how to pay for energy saving home improvements and to enable them to receive incentives if they elect to pay upfront rather than using the Green Deal finance package.

¹ Note that this is based on self reporting from respondents. For official statistics on the remaining potential for insulation measures please refer to : http://www.decc.gov.uk/en/content/cms/statistics/energy_stats/en_effic_stats/home_ins_est/home_ins_est.aspx

2. Introduction and objectives

In order to help reduce carbon emissions and improve domestic energy efficiency in Great Britain the Government is launching the Green Deal; an initiative which will enable households and businesses to make energy saving home improvements to their properties. The scheme helps customers pay for some or all of the improvements over time through their electricity bill. Repayments will be no more than what a typical household should save in energy costs.

The launch of the Green Deal will be supported by the Green Deal Cash back scheme. The aim of this special time-limited 'introductory' offer is to boost early uptake of energy saving home improvements by offering cash back for each improvement that consumers install as part of the Green Deal process.

In early 2012, GfK NOP was commissioned to carry out research with the primary aim of providing DECC with evidence to inform the design of incentive packages to encourage early uptake of the Green Deal.

2.1 Objectives

The objectives of this survey were to answer the following key research questions:

- What level of incentive is most effective in driving uptake of the Green Deal?
- What is the most effective type of incentive for driving uptake of the Green Deal?
- What are the relative differences in uptake of the Green Deal at different rates of interest?
- How does uptake vary when consumers are offered the opportunity to pay in full up front outside the Green Deal financing mechanism? (and receive an incentive after installing the necessary improvements).

2.2 Brief overview of research method

In order to provide the required evidence GfK NOP interviewed a representative sample of 2,050 owner-occupiers and private rented tenants aged 18+ across Great Britain. Social rented tenants were not included in the target audience because of complexities associated with their tenancies and the way in which they will interact with the Green Deal.

The chart below provides some very brief details of the research method used for this survey; a fuller description of the method is included in a separate technical report along with copies of all the survey instruments used in the course of the research.

Chart 1: Overview of the Green Deal research method

Target Groups:	<ul style="list-style-type: none"> • Representative sample of householders/partners aged 18+ in Great Britain • 2,050 interviews in total <ul style="list-style-type: none"> • Owner-occupiers (inc shared ownership): 1,676 interviews • Private rented tenants: 374 interviews • Following two stages of data cleaning 75 respondents were removed from the conjoint analysis. The total number of respondents included in the conjoint analysis was 1,975
Method:	<ul style="list-style-type: none"> • In-home face-to-face CAPI (Computer Aided Personal Interviewing) • Interviewer administered with self-completion conjoint section (used for take-up estimates)
Sampling:	<ul style="list-style-type: none"> • Random location sampling • Samples drawn from all areas in GB except those with 30%+ social housing • Boost samples in Wales (207) and Scotland (218) to enable separate analysis • Data weighted to provide representative estimates
Questionnaire:	<ul style="list-style-type: none"> • Questionnaire developed by GfK NOP and DECC • Average interview length of 30 minutes
Fieldwork dates:	<ul style="list-style-type: none"> • 15th February – 23rd March 2012

In order to answer the research objectives, the questionnaire contained a conjoint task. The conjoint task was required in order to understand the relative appeal of different incentive levels and types, different payment options and different interest rate levels, to identify the offer most likely to lead to the greatest demand. Before completing the conjoint task, respondents were informed about the various elements of the Green Deal package (e.g. assessments, payment options, savings, interest rates etc.) and were told that incentives would only be available after improvements had been installed, not upfront. Following this, respondents were asked to ‘trade off’ a variety of packages appropriate to their property.² The choices covered the range of energy saving home improvements that each respondent could benefit from as well as a range of other attributes of the deal.

² The questionnaire did not mention the ‘Green Deal’ specifically; it was only ever described as a ‘home improvement plan’. This was done so as not to put off to those who were less environmentally aware. Instead the package was presented as a new way of paying for home improvements which are designed to make your home more energy efficient.

The key elements of the conjoint task included were as detailed below:

Chart 2: Key elements of the Green Deal conjoint task

Cost of measure	<ul style="list-style-type: none"> The 'cost of the measure' was the cost after any relevant ECO subsidy had been deducted (for SWI only) Not levels – 10 options including single measures: <ul style="list-style-type: none"> Boiler (£2,500); External solid wall insulation (£7,275); Internal solid wall insulation (£2,275); Cavity wall insulation (£500); Loft (£300) And combinations of measures: <ul style="list-style-type: none"> eSWI and boiler (£9,775); iSWI and boiler (£4,775); CWI and improving loft insulation (£800); CWI and boiler (£3,000); CWI, boiler and improving loft insulation (£3,300); Boiler and improving loft insulation (£2,800)
Incentive amount	<ul style="list-style-type: none"> The questionnaire tested the following incentive levels: <ul style="list-style-type: none"> 0%, 5%, 15%, 25%, 35%, 45% Respondents were shown the incentive levels as a monetary amount (based upon the assumed installation cost for the customer) rather than a percentage
Incentive type	<ul style="list-style-type: none"> The questionnaire tested the following incentive types: <ul style="list-style-type: none"> Cash payment from government, Council tax rebate, Credit on energy bill, Credit towards other home improvement services
Upfront cost	<ul style="list-style-type: none"> The questionnaire tested the following options: <ul style="list-style-type: none"> No upfront cost (iSWI; CWI; Loft; CWI and loft) Fixed amount based on measure: <ul style="list-style-type: none"> £6,600 for eSWI and boiler installation £5,000 for eSWI £1,600 for all other measures/combinations of measures Pay in full without using this finance package (when this option was shown the interest rate was suppressed as it was not relevant)
Interest rate	<ul style="list-style-type: none"> The questionnaire tested the following interest rates for Green Deal finance: <ul style="list-style-type: none"> 6%, 8%, 10%, 12%
Annual net savings	<ul style="list-style-type: none"> Not levels – net savings were calculated based on the finance package and cost of measure Savings ranged from £0-£340

Other important elements of the conjoint task were as follows:

- Respondents evaluated measures which they 'needed' (i.e. those which were appropriate for their home and were not already installed)³

³ 'Need' was assessed based upon questions asked of the householder during the interview, rather than being assessed by a building surveyor. There is therefore a chance that a householder may have given incorrect information, but this was felt to be the best option given the time and budget constraints on the research.

- Respondents evaluated packages which reflected likely costs and net savings based on a three bedroom semi-detached property⁴
- Respondents were shown how long it would take for a household to pay for the improvements. These payment terms were set at seven years for cavity wall insulation/cavity wall insulation and loft insulation, and 20 years for the other measures.

Further details about the conjoint task are included in the technical report.

2.3 A note on reading uptake estimates

In order to answer the key research questions and show the effect of changing elements of the Green Deal such as incentive level, interest rates etc. the report provides modelled estimates of potential uptake of the Green Deal under different scenarios. These modelled figures are based on take up of Green Deal measures (either with or without Green Deal finance). The data have been adjusted to account for the inevitable discrepancy between intention and actual behaviour by applying a truth index. More information on this can be found in the technical report. It is important to note that these figures do not present a market forecast for uptake of the Green Deal for the following reasons:

- Estimates are based on a new and complex concept. Although the Green Deal was explained to respondents during the survey, there are a variety of factors not included in the research that are expected to influence uptake. These include, marketing activity by Green Deal providers, reputation, word of mouth, whether the customer is at a key trigger point such as moving house or refurbishing their property, tailored advice, competitive activity and government awareness raising activities.
- Similarly, under a real Green Deal scenario consumers would be provided with information about the Green Deal from an accredited advisor, specific to their property and circumstances and any discussion around use of Green Deal finance would be supported with tailored financial advice. The research does not account for those who show no interest under survey conditions but could be persuaded if they reach an assessment stage in real life.
- For the purposes of the research, packages presented to respondents were broadly based on an average property type – an on gas grid, three bedroom semi-detached property. In reality there will be a range of house types and the packages available to these households may result in different patterns of uptake across different customer groups. For some house types, typically larger properties, the net savings will be higher and upfront costs lower, which might result in higher uptake. Conversely, for other property types the net savings might be lower and upfront costs higher. Typically,

⁴ Costs and savings were calculated by DECC economists. Estimates of installation costs were taken from a DECC call for evidence, and a realistic illustrative level of Energy Company Obligation (ECO) subsidy was subtracted to give an estimate of what costs would fall to the consumer. The installation costs are illustrative for the purposes of this study. In the Green Deal / ECO market consumers will be offered a bespoke installation cost, and a wide range of ECO subsidy levels are likely to be offered to different households depending on a number of factors, including the size of the property.

however, these households would likely be eligible for greater subsidy under the Energy Company Obligation.

- The option to pay outside of the Green Deal financing mechanism was limited to paying the amount in full upfront. The research did not offer the option to part fund through Green Deal finance, an option that may be appealing to some consumers.
- Estimates are a short term measure of uptake, based on the offer being available to everyone at one point in time. They provide a snapshot based on respondents' current financial, economic and household situation.
- Estimates are only based on the tested attributes and measures. When the Green Deal is launched the scheme will cover more energy saving home improvements than were included in the research.

Whilst the figures do not present a market forecast they do provide an indication of the features which are most likely to drive uptake of the Green Deal and the relative differences in uptake depending on the level of different features (i.e. increasing interest rates, incentive levels etc.).

2.4 A note on significance testing

The uptake estimates described in this report are probabilities rather than mean scores or percentages and the figures on which we would usually conduct significance testing are not single probabilities, but a composite of a number of probability scores. The closest estimate to significance testing is to conduct a panel test on the percentage take-up level. This test assumes that you have asked a panel of respondents the same question multiple times, and you are testing whether the change in response to that question differs significantly from the first.

Based on the total sample included in the conjoint analysis (1,975 respondents), a difference of approximately 0.7 percentage points would be significantly different using this method, but **this should only be taken as a rough guide.**

3. Which energy saving home improvements are needed?

The conjoint task was only undertaken by those respondents who needed at least one energy saving home improvement installed in their home. 'Need' was established based upon the structure of their property (e.g. type of walls, type of boiler, whether they had a loft etc.) and whether any of the following energy saving home improvements were already installed or not:⁵

- Loft insulation to a thickness which sits higher than the beams in your loft
- Cavity wall insulation
- Solid wall insulation
- A condensing boiler.⁶

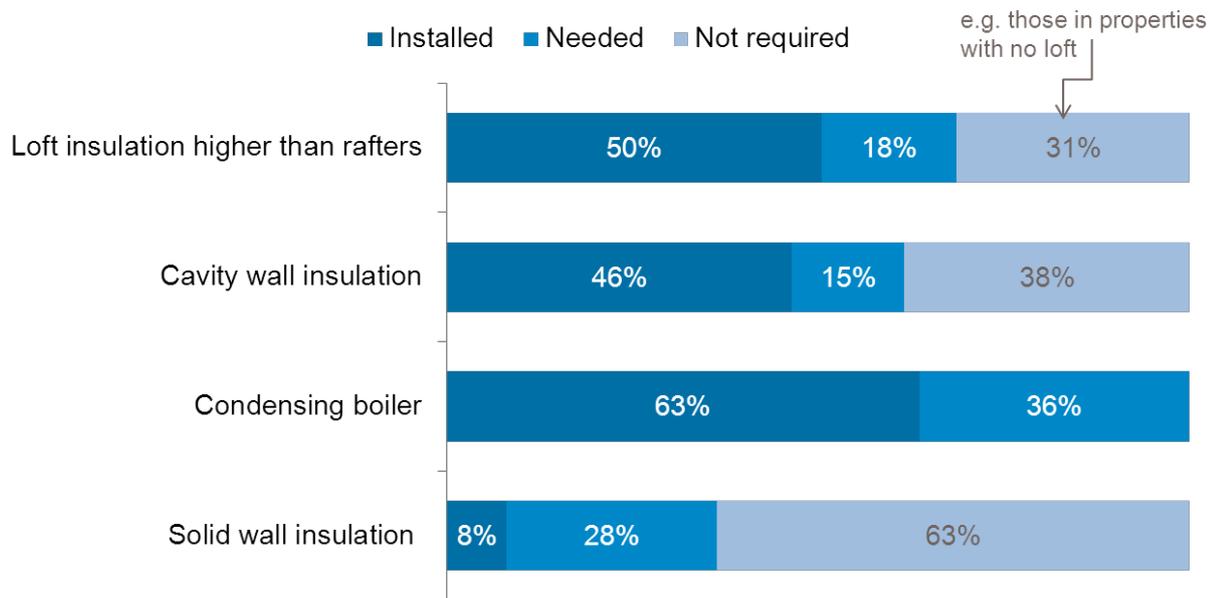
'Need' was assessed based upon questions asked of the householder during the interview, rather than being assessed by a building surveyor. There is a chance that a householder may have given incorrect information, but this was the best option in the context of a social research survey. If a householder did not know whether appropriate measures were installed in their property, for the purposes of the conjoint exercise, we assumed that they were not, in order to ensure that householders made decisions on uptake of packages based on their own perception of what the property 'needed'.

Chart 3 shows the proportion of households which already have the different measures installed and, more importantly from a Green Deal perspective, the proportion of households which 'need' each of the measures.⁷

⁵ Note that respondents were only asked if they had installed those improvements that were appropriate for their property, so if a respondent had cavity walls they were not asked if they had solid wall insulation installed.

⁶ It is worth noting that other energy saving home improvements will be included under the Green Deal scheme. For example, with regard to heating systems, boilers are only one of multiple ways to making a house more energy efficient, but a condensing boiler was the only heating system included in the research.

⁷ Note that this is based on self reporting from respondents. For official statistics on the remaining potential for insulation measures please refer to : http://www.decc.gov.uk/en/content/cms/statistics/energy_stats/en_effic_stats/home_ins_est/home_ins_est.aspx

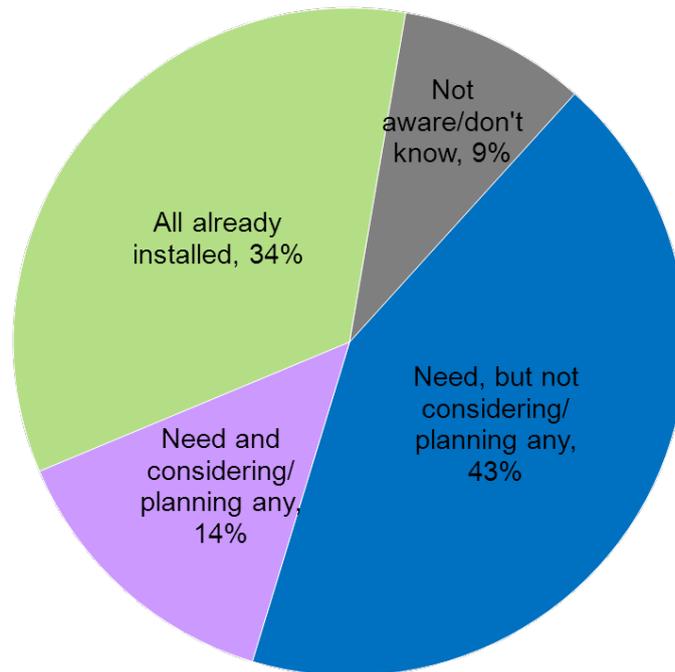
Chart 3: Measures installed and needed

Base: All respondents (2,050)

NB. The proportion of households not requiring cavity wall insulation does not exactly sum to the proportion who have installed or who need solid wall insulation because a small number did not know whether they already had the measure(s) installed.

When responses to this question were combined the findings showed that a third of households (34%) have already installed all of the energy saving home improvements appropriate for their property. This group of respondents did not undertake the conjoint task because they could not benefit from any of the improvements which were included in the research.

Those respondents who needed at least one improvement installed in their home were asked to complete the conjoint task regardless of whether or not they already had any plans to install any of the measures. It is this 'need' group (n=1,267) upon which the analysis in this report is based. As Chart 4 shows, the 'need' group can be broken down into three sub-groups: those who were already considering or planning to install energy saving home improvements (14%), those who were not considering or planning to install improvements (43%) and those who were not aware or did not know about improvements (9%).

Chart 4: Who is considering installing Green Deal measures?

Base: All respondents (2,050)

Analysis of the data shows that certain groups were more likely to be considering or planning to install energy saving home improvements. These included:

- 35-64 year olds (18%)
- Owner-occupiers (16%)
- Households with an annual income of £17k or more (17%)

Similarly, the following groups were more likely to say that they were not considering or planning to install any improvements:

- 65+ (53%)
- Tenants (47%)
- Households with an annual income of less than £17k (52%)
- People living in homes built before 1930 (54%)

4. The impact of incentives upon potential uptake of the Green Deal

This section of the report looks at the impact of incentive levels and types of incentive upon potential Green Deal uptake.

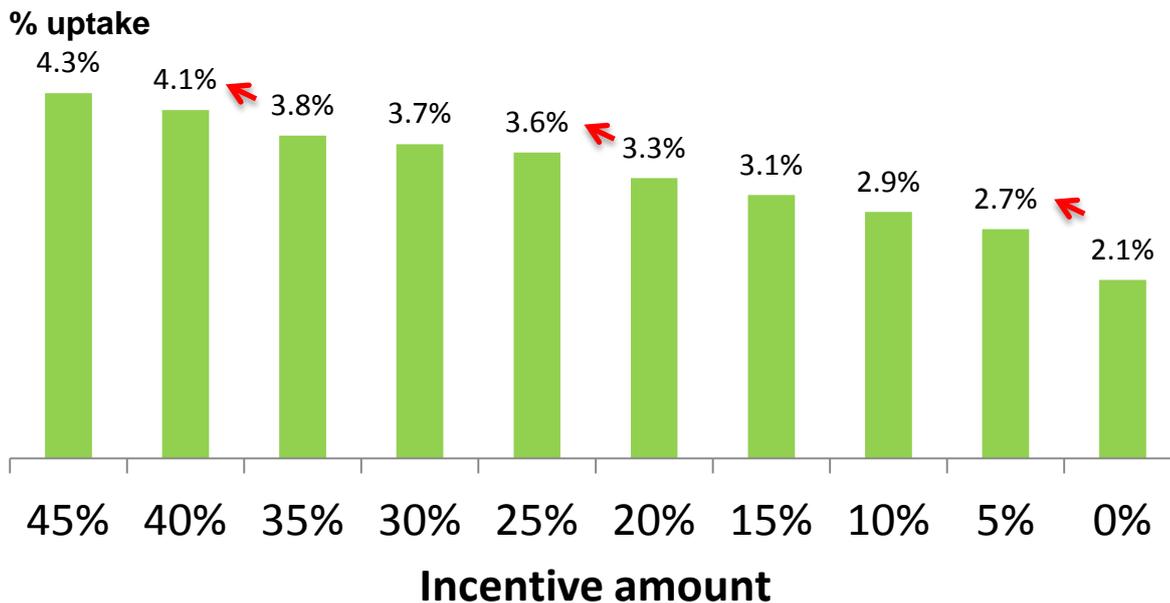
4.1 The impact of incentive levels on uptake

Chart 5 shows the differences in uptake at different levels of incentive. The relationship between incentive level and uptake level correlates strongly; as incentive levels increase so too does uptake. That said, the relationship is not strictly linear, as the arrows on the chart show there are a number of levels where more notable increases in uptake occur.

As the chart shows, any incentive level has a positive impact on uptake; even a 5% incentive (calculated as a proportion of installation costs to the consumer) leads to an increase in uptake of 0.6 percentage points (a relative increase in uptake of 22%). When incentive levels increase from 0% to 15% uptake increases by 1 percentage point (a 48% increase overall). When incentive levels increase from 0% to 45% uptake more than doubles as it rises from 2.1% to 4.3%.

Again, it is worth noting that uptake estimates are probabilities rather than percentages and the figures are composites of a number of probability scores. Therefore significance testing cannot be used in the same way as with normal survey estimates. However, these results do strongly suggest that incentives have a marked impact upon uptake.

The research was not able to demonstrate what might be causing these increases to occur at those particular levels. The research also did not seek to determine the value-for-money of different incentive levels, so is not able to determine an 'optimal' level of incentive in terms of balancing the cost to Government versus achieving the greatest impact.

Chart 5: The impact of incentive levels upon Green Deal uptake

Base: All respondents included in the conjoint analysis (1,975)

NB: Uptake figures are calculated on the basis of a Cash payment from Government (Offer Type) and a 6% interest rate.

While uptake increases amongst all sub-groups once incentives are introduced, certain sub-groups are more sensitive than others to increases in the level of incentives offered.

When the incentive level increases from 0% to 45% the greatest increases in uptake occur amongst households with annual incomes of £37k or more (+2.9 percentage points), households living in homes built since 1990 (+3.2 percentage points) and households which only need one energy saving home improvement (+4.2 percentage points).

- Amongst households with annual incomes of £37k or more the most notable increases in uptake occur when a 5% or 15% incentive is offered (+0.8 percentage points and 0.4% percentage points respectively)
- The largest increase in uptake amongst households living in homes built since 1990 occurs when a 25% incentive is offered (+0.7 percentage points)
- The most notable increases for those needing one measure occur at 5% (+1.2 percentage points) and 25% (+0.7 percentage points).

Although incentives drive higher uptake for all groups, an increase in incentive level from 0% to 45% has less of an impact on households with annual incomes below £17k (+0.8 percentage points), households living in homes built before 1930 (+1.7 percentage points) and households which require three energy saving home improvements (+1.5 percentage points). Although uptake amongst these groups does increase when incentives rise, the increase was fairly steady. No particular incentive amount had a more marked effect upon uptake for any of the these groups.

One conclusion which might be drawn from these findings is that that because lower income households are less motivated by increasing incentive levels they may need something else to encourage them to make energy saving home improvements. However, it should be noted that the scope of this research means that this report cannot provide any indication about what else could be done for this group of households.

How does uptake vary by measure?

Table 1 shows how uptake varies for the different measures which were included in the research. The table shows the level of uptake amongst those who need each energy saving improvement, with the highest level of uptake associated with cavity wall insulation regardless of the level of incentive offered to consumers.

As the table shows, different incentive levels are required to drive an increase in uptake for different improvements. The greatest increases for each measure are detailed below:

- Cavity wall insulation: greatest increases at 5% (+1 percentage point) and 15% (+0.6 percentage points).
- Boiler: greatest increases at 5% (+0.7 percentage points) and 40% (+0.6 percentage points).
- Internal solid wall insulation: greatest increases at 5% (+0.3 percentage points) and 25% (+0.5 percentage points).
- External solid wall insulation: greatest increase at 25% (+0.4 percentage points).
- Loft: greatest increase at 5% (+0.2 percentage points).

Table 1: Change in uptake by incentive amount and measure

Base: All who need each measure	Incentive amount										
	Base	0%	5%	10%	15%	20%	25%	30%	35%	40%	45%
CWI	296	3.9%	4.9%	5.4%	6.0%	6.1%	6.2%	6.3%	6.4%	6.9%	7.4%
Boiler	252	2.4%	3.1%	3.2%	3.5%	3.8%	4.2%	4.3%	4.5%	5.1%	5.5%
iSWI	575	2.3%	2.6%	2.6%	2.6%	2.8%	3.3%	3.4%	3.5%	3.5%	3.5%
eSWI	575	2.2%	2.2%	2.2%	2.2%	2.5%	2.9%	2.9%	3.0%	3.0%	3.0%
Loft	365	0.6%	0.8%	0.9%	1.0%	1.1%	1.2%	1.2%	1.2%	1.2%	1.3%

NB: Uptake figures are calculated on the basis of a cash payment from Government (Offer Type) and a 6% interest rate.

Respondents who needed more than one improvement were also shown options for combining those improvements, rather than just installing them as single measures. The table below shows the impact of combining energy saving home improvements amongst those respondents who need all of the measures offered in combination. In summary, the findings indicate that respondents are more likely to take out a single measure (e.g. external solid wall insulation) rather than a combination of measures (e.g. external solid wall insulation and loft insulation).

The table shows that amongst those who need both a boiler and cavity wall insulation the highest level of uptake occurs when they are able to just install one of the needed improvements (6% of this group would take up cavity wall insulation). Take up of the both improvements combined is lower at 4.6% (1.4 percentage points down).

This effect can also be seen in relation to the other examples where respondents were offered a combination of measures. The impact of combining measures results in reduced uptake across the board. The reduction is most marked in relation to uptake of a boiler, cavity wall insulation and loft insulation amongst those who need all three improvements; 4.9% of this group would install cavity wall insulation while uptake of all three measures combined is - 1.7 percentage points lower.

Table 2: Change in uptake when measures are combined

Measures needed	Base	% Boiler uptake	% CWI uptake	% SWI uptake	% Loft uptake	% uptake of both/all measures
Boiler + CWI	133	5.2%	6.0%	N/A	N/A	4.6%
Boiler + CWI + Loft	53	3.9%	4.9%	N/A	0.0%	3.2%
Boiler + SWI	252	3.0%	N/A	2.5%	N/A	2.7%
Boiler + Loft	172	4.2%	N/A	N/A	0.0%	2.9%

*Shows the maximum uptake of a single measure.

Nb. The table only shows those measures which were included in the research. When the Green Deal is launched consumers will be offered a greater number of energy saving home improvements.

4.2 The impact of incentive type on uptake

The research tested the impact of four different types of incentive on uptake levels:

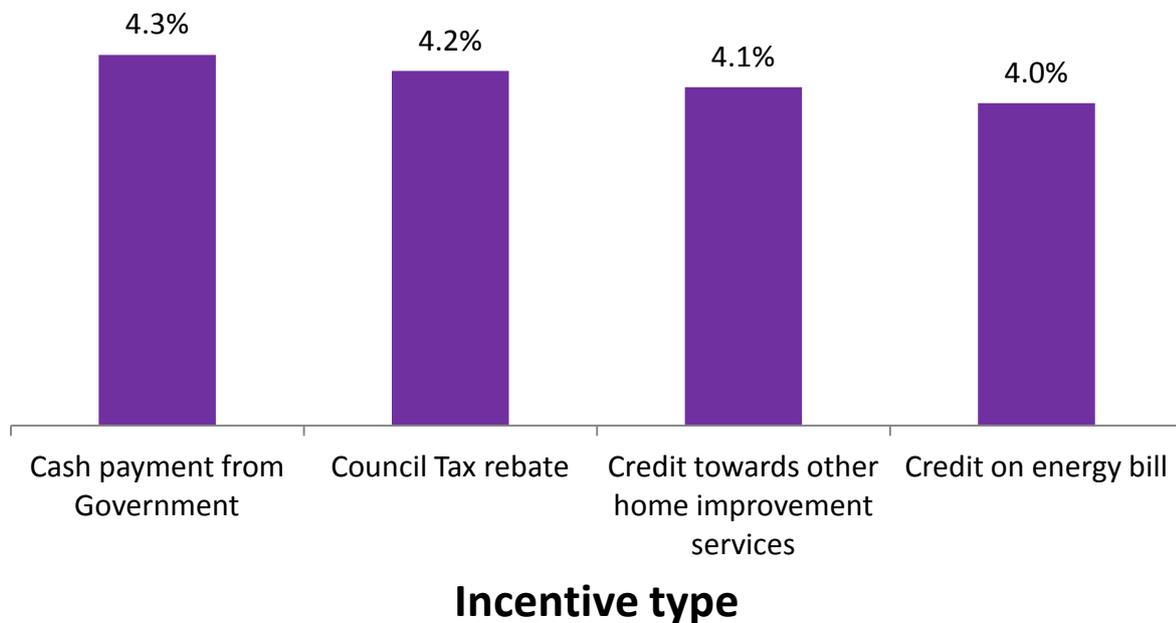
- Cash payment from government
- Council Tax rebate
- Credit towards other home improvement services, such as redecoration once the improvements had been made
- Credit on energy bill.

Chart 6 shows the relative differences in uptake based upon these different types of incentive.

As the uptake levels in the chart show, incentive type makes very little difference. Although a cash payment from the government is associated with the highest level of uptake it is only 0.3 percentage points higher than the level of uptake observed when consumers are offered credit on their energy bill. In relative terms, this suggests that uptake based on the least preferred incentive type is only 7% lower than uptake based upon the most preferred incentive type.

The findings shown in the chart below are based upon a 45% incentive, but it is worth noting that this pattern – in which the impact of different incentive types on uptake is minimal – still holds when incentive levels are lower. For example, based on a 30% incentive uptake drops by 0.3 percentage points when the incentive type is changed from a cash payment from government to credit on an energy bill. The same uptake drop is also seen based on 25%, 20%, 15%, 10% and 5% incentive levels.

Chart 6: Uptake by incentive type



Base: All respondents included in the conjoint analysis (1,975)

NB: Uptake figures are calculated on the basis of a 45% incentive and a 6% interest rate.

Analysis of the key sub-groups shows few notable differences in uptake based upon different incentive types. The most notable difference is observed amongst the Super Priority Group⁸; amongst this group uptake is marginally higher when credit on energy bills is offered as an

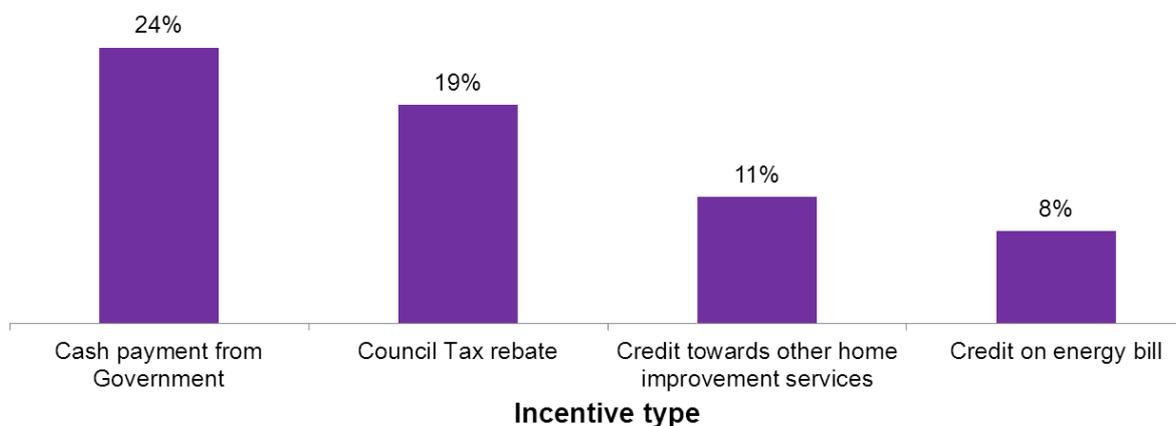
⁸ For the purposes of this research the DECC 'Super Priority Group' was defined as those households who fit into at least one of the following three groups:

- Receive JSA or Income support and have a household income below £16,999 and have someone aged 60+ or receive Disability Living Allowance or have children in the household or someone who has a long standing illness or disability
- Receive a pension credit
- Receive Child Tax Credits and have a household income below £16,999

incentive (0.2 percentage points higher compared with the uptake level associated with a cash payment from the government). This is the only sub-group where this is the case and although the base size is relatively low (n=83) it is large enough to draw indicative conclusions from.

The appeal of a cash payment from Government over the other types of incentives is demonstrated further when looking at which incentive types were preferred. In order to do this we looked at the utilities for each incentive and this showed that amongst those expressing a preference, a quarter (24%) preferred a cash payment from Government. Council Tax rebates were preferred by a fifth (19%), while credits towards home improvement services or energy bills were much less commonly preferred (11% and 8% respectively).

Chart 7: Which types of incentive were preferred?



Base: All respondents who undertook the conjoint task (1,267)

Some differences by sub-group are worth noting:

- Cash payment from Government was preferred by 18-34 year olds and 55-64 year olds (both 27%), with fewer of those aged 65+ preferring this incentive type (21%).
- Credit towards other home improvement services was preferred by those needing multiple measures: 24% of those needing three measures and 20% of those needing two measures compared with 15% of those needing only one measure.
- Credit on energy bill was preferred by those on lower household incomes, those having difficulties paying their energy bills and those living in the most deprived areas.

5. Financing improvements through the Green Deal

As part of the informative element of the research respondents were given details about various aspects of the Green Deal. One part of this introduced the idea of interest rates in relation to the Green Deal finance package and another part focused upon the payment options that consumers will have to pay for the energy saving home improvements. Respondents were informed that:

“While you would be offered a finance package to pay for the improvements, you could choose to pay for the improvements in another way: for example you could pay from your savings, or take out a loan from another source.

Even if you don't take out the finance package, you may still be able to take up the discount on the cost of the improvements, and the other offer (e.g. cash payment, council tax rebate).”

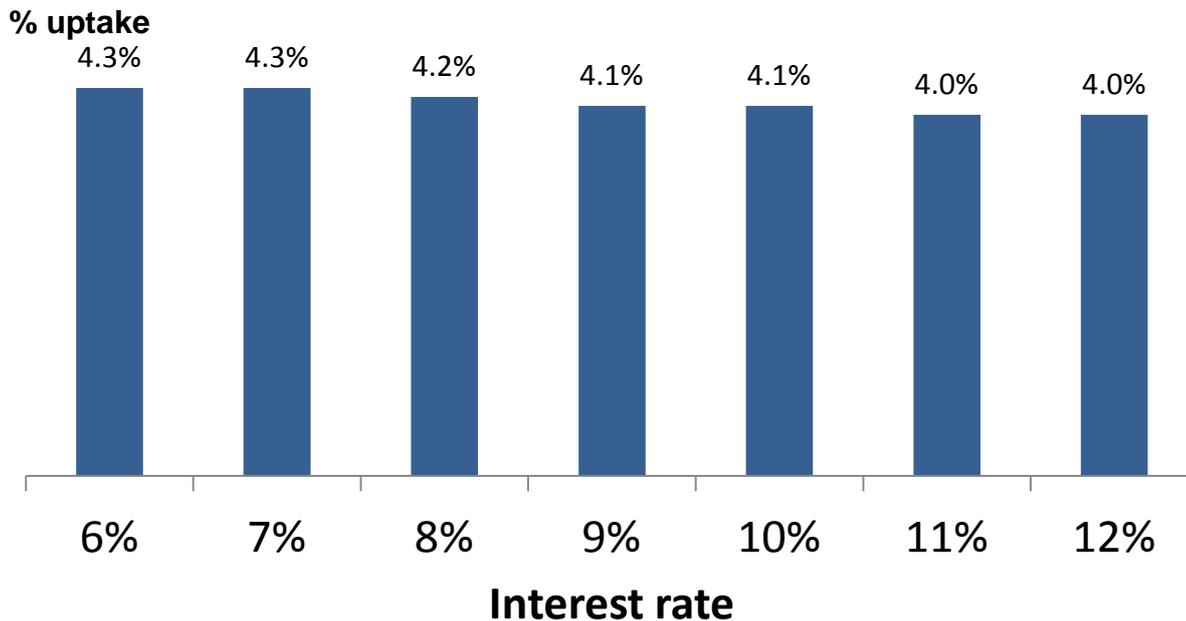
This section of the report begins by looking at the impact of interest rates; the conjoint task tested the effect of interest rates ranging from 6%-12% upon uptake levels. It then considers the impact of giving consumers the choice of how to pay for energy saving home improvements, i.e. whether consumers use Green Deal finance or choose to pay for the improvements upfront.

5.1 The impact of interest rates on uptake

Chart 8 shows the relative differences in uptake based upon different levels of interest rate.

The uptake levels in the chart show that there is an inverse relationship between interest rates and uptake – the higher the interest rate, the lower the uptake level. However, it is clear that the effect of increasing the rate of interest is minimal. Uptake based upon a 12% interest rate is only 0.3 percentage points lower than the level of uptake associated with a 6% interest rate. This equates to a 7% decrease overall.

The findings shown in the chart below are based upon a 45% incentive, but it is worth noting that this pattern – in which the impact of increasing interest rates has a minimal effect – still holds when incentive levels are lower. For example, based on a 30% incentive uptake drops by 0.3 percentage points when interest rates increase from 6% to 12%. Based on 0% incentive the drop in uptake is only 0.2 percentage points. This underlines the finding that incentive levels have the greatest impact upon potential Green Deal uptake.

Chart 8: Uptake by interest rate

Base: All respondents included in the conjoint analysis (1,975)

NB: Uptake figures are calculated on the basis of a 45% incentive and a cash payment from government.

Analysis of sub groups showed that generally there were minimal differences in uptake amongst the key sub-groups at different interest rates. However, there were some sub groups that were slightly more sensitive to changes in interest rates. These include:

- Households which find it hard to heat their home and who are struggling with bills. For this group, uptake drops by 0.7 percentage points when interest rates increase from 6% to 12%. In comparison, uptake amongst affluent households (those earning £37k+ p.a.) only drops by 0.3 percentage points.
- Households which need solid wall insulation. For this group uptake drops by 0.7 percentage points when interest rates rise from 6% to 12%. Solid wall was the most expensive single measure included in the research and required a 20-year repayment term.

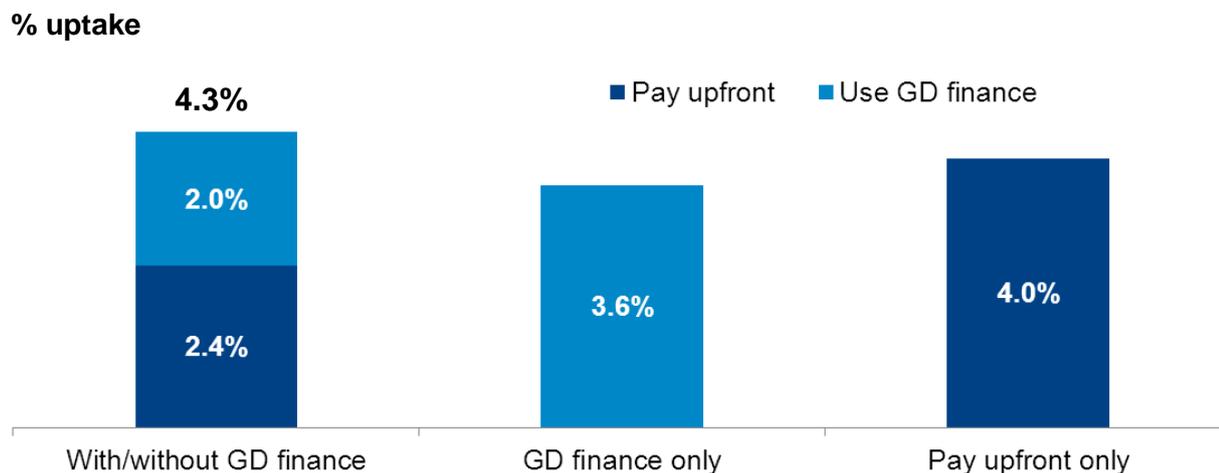
In comparison, there appeared to be less sensitivity over the change in interest rate among households needing cheaper measures with a shorter repayment term. For example, the drop in uptake for those needing loft insulation was 0.3 percentage points and for those needing cavity wall insulation it was 0.3 percentage points. The impact of choice on how to finance energy saving improvements on uptake.

5.2 The impact of interest rates on Green Deal finance

In order to test consumer preferences in relation to financing energy saving home improvements the conjoint task tested the appeal of two different options - either using Green Deal finance or paying for the improvements in full upfront.

As the chart below shows, the highest level of uptake occurs when improvements can be financed either with or without Green Deal finance. When consumers are only able to fund improvements using one of those finance options uptake drops slightly; when consumers can only pay for improvements upfront (and still receive the Energy Company Obligation (ECO) subsidy)⁹ uptake drops by 0.3 percentage points (this equates to a 7% decrease), but when consumers can only pay for improvements with Green Deal finance uptake drops by 0.7 percentage points (this equates to a 16% decrease).

Chart 9: Uptake by choice of how to finance improvements



Base: All respondents included in the conjoint analysis (1,975)

NB. Findings are based upon a 45% incentive, 6% interest rate and cash payment from government. Calculations are based on the amount to be financed (cost after ECO subsidy – up-front payment) x uptake % x number of owner-occupier/private rented tenant households in Britain. This does not include any interest payments or charges.

Clearly, giving consumers the choice of how to finance energy saving home improvements is preferable in terms of driving a higher level of uptake overall.

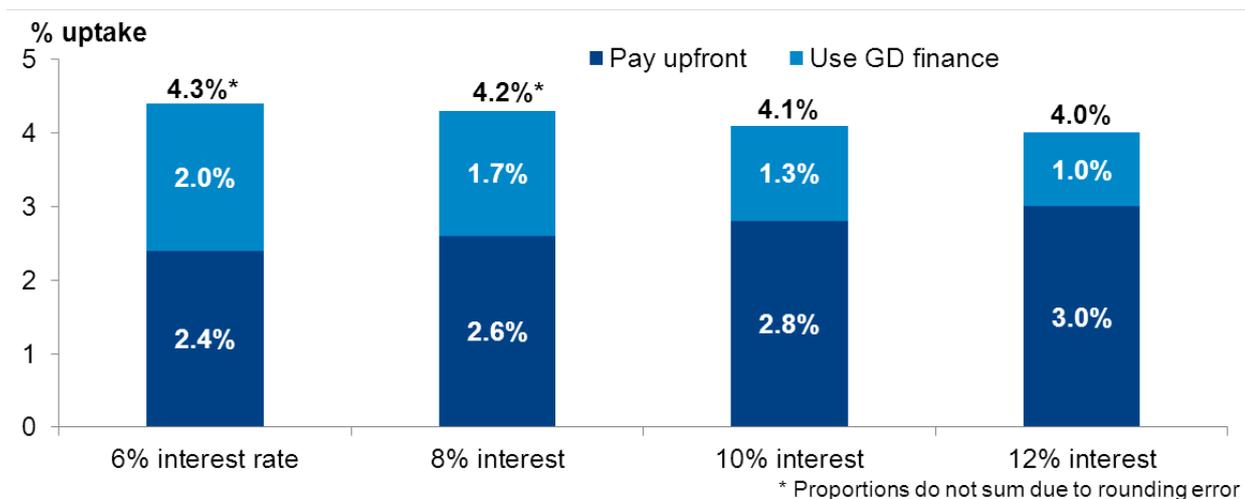
Interest rates on Green Deal finance appear to have a real effect upon whether or not consumers opt to fund their home improvements by paying upfront or by using Green Deal finance. When the lowest level of interest rate is tested the split between those choosing to use Green Deal finance and those choosing to pay upfront is fairly even; 45% of those who make energy saving home improvements would use Green Deal finance, while 55% would pay in full upfront. The split is broadly the same when an 8% interest rate is tested, but is more marked at both the 10% and 12% interest

⁹ Under part of the Energy Company Obligation, subsidy may be available for those living in harder to treat properties (e.g. period properties with solid walls).

rate levels. Based upon a 12% interest rate only a quarter of those installing energy saving home improvements would do so using Green Deal finance (see Chart 10).

The findings shown in the chart below are based upon a 45% incentive, but it is worth noting that this pattern – where the split between Green Deal finance and upfront payment is more evenly split at a lower interest rate – still holds when incentive levels are lower.

Chart 10: Uptake by consumers' choice of how to finance improvements and interest rates



Base: All respondents included in the conjoint analysis (1,975)

NB. Findings based upon 45% incentive and cash payment from government. Calculated on the basis of amount to be financed (cost after ECO subsidy – up-front payment) x uptake % x number of owner-occupier/private rented tenant households in Britain. This does not include any interest payments or charges.

5.3 How would consumers pay for improvements?

The research provides some insight into how consumers might pay for energy saving home improvements if they are able to choose to pay upfront rather than using a Green Deal finance package. When respondents said that they definitely or probably would take up a home improvement package which did not include a Green Deal finance package, they were asked a question to ascertain how they thought they would fund the improvements.

As chart 11 shows, three quarters of those who definitely or probably would take up the home improvement plan, but would pay in full without using the finance package thought they would pay for the improvements using savings (74%). The only other options mentioned by more than one in ten of this group were loans from friends or family members (11%) and using a credit card where the balance is paid off in full (10%). By grouping together various finance options we can see that 82% of this group would look to pay for their home improvements without incurring any interest (this is based upon those who said they would pay from savings, credit card (balance paid off), loan from friends or family, loan from DWP/Job Centre).

The option to pay from savings was popular across all sub-groups, and unsurprisingly, particularly amongst the more affluent groups:

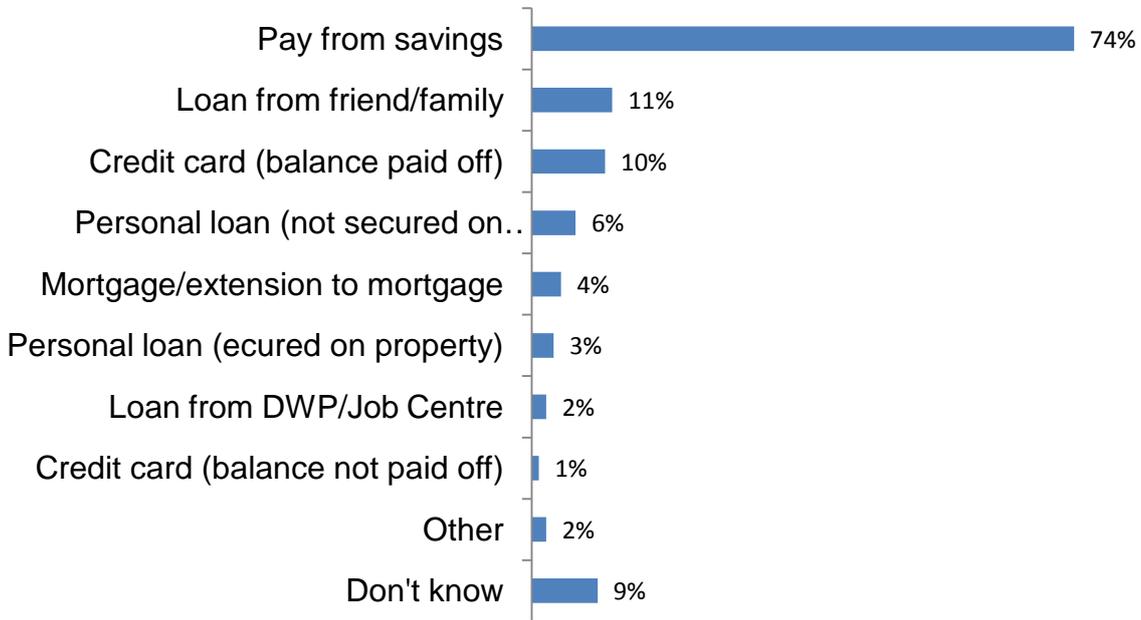
- 83% of higher income households compared with 63% of households earning less than £37k p.a.
- Households in higher social grades (79% compared with 61% of lower social grade households)¹⁰
- Households who were managing their energy bills well (81% compared with 64% of those who were 'getting by alright')¹¹
- Owner-occupiers (80% compared with 64% of renters)
- People aged 55+ (79% compared with 70% of 18-34 year olds)

In addition, those who needed to replace their boiler were significantly more likely than those who need solid wall insulation to say that they would pay for the improvements using their savings (76% compared with 64%). Given the difference in cost between the two improvements shown to consumers in the survey (£2,500 compared with up to £7,275) this is not surprising.

¹⁰ The MRS social grades are a system of demographic classification based upon the chief income earner's occupation. The ABC1 group (referred to as 'higher social grades') combines those households in the upper middle, middle and lower middle classes, while the C2DE group (referred to as 'lower social grades') combines those in the skilled working class, working class and those on the lowest levels of subsistence (e.g. casual or lowest grade workers, pensioners and others who depend on the welfare state for their income).

¹¹ Comparison with those in financial difficulties cannot be shown because of a very low base size (n=30).

Chart 11: Finance options for those who definitely or probably would take up the home improvement plan by paying in full without using the finance package



Base: All who definitely or probably would take up a home improvement plan not using Green Deal finance (341).

6. The importance of different variables in driving Green Deal uptake

Findings from this research suggest that around two thirds of owner occupied and private tenanted households in Great Britain could benefit from the energy saving home improvements which were included in the survey. In order to ensure that uptake amongst this group is as high as possible the following findings should be borne in mind.

Of all the variables tested, it is the incentive level which has the most marked impact upon uptake. When a 45% incentive level (calculated as a proportion of installation costs to the consumer) is offered, uptake is more than twice as high as when no incentive is offered.

The key finding in relation to incentive level is that as it increases so too does uptake. There is no evidence to show a 'flattening out' of uptake at any point - the highest incentive level tested in the research was 45% and this is associated with the highest level of uptake .

Incentive type has less of an impact upon uptake but the research does suggest that, of the four incentive types tested, a cash payment from government is associated with slightly higher uptake levels whereas credit on an energy bill is associated with the lowest uptake levels. Based on a 45% incentive level and credit on their energy bill uptake is 0.3 percentage points lower (equivalent to a 7% decrease) than when consumers are offered a cash payment from government.

The research indicates that lower interest rates are associated with a higher level of uptake. Uptake based on a 12% interest rate is 0.3 percentage points lower than uptake based on a 6% interest rate (equivalent to a 7% decrease). This finding is based upon a 45% incentive, but other incentive levels were tested and all indicated that increasing interest rates has a minimal effect overall.

Interest rates have a more marked impact in relation to how respondents say they will finance their energy saving home improvements. As interest rates increase respondents are more likely to pay for improvements upfront rather than using Green Deal finance. Again, this pattern occurs regardless of the level at which incentives are offered.

Finally, when consumers are only offered one option on how to finance their energy saving home improvements uptake drops and, so, consumers should be given the choice over how to pay for improvements (i.e. either using Green Deal finance or paying in full upfront while still receiving incentives).

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