rb&m BUILDING TRUST IN THE ENERGY TRANSITION

Consumer Research in the Microgeneration Sector

Key findings from an online survey and focus groups

February 2022

Consumer Research in the Microgeneration Sector: Key findings from an online survey and focus groups

Content

Tables and charts

Consumer Research in the Microgeneration Sector

Objectives

The consumer research was designed to:

1. Learn the basis for consumer decisions to invest in low carbon technologies;
2. Understand better how existing messages and information about low carbon technologies are perceived, and test MCS brand recognition;
3. Learn what barriers need to be removed and what needs to be put in place for consumers to invest in low carbon technologies;
4. Identify the renewable installation outcomes and use that information to describe experience and risk in the consumer journey;
5. Learn the kinds of protections consumers want and expect to be in place, when investing in low carbon technologies.

Research methodology

Survey

Opinium were commissioned to conduct an online survey of 2000 nationally-representative individuals who have responsibility for home energy decision-making, alongside an online survey 'boost' of 500 such individuals who have one or more renewable energy systems at home. The fieldwork took place between 20th December 2021 and 10th January 2022. The base numbers for each individual survey question are provided in the various charts within the body of this report. Sub-samples were too small to use for viable comparisons between geographical regions. The critical sample sizes are provided overleaf.

This report presents the findings of the research among those who have renewables installed and from households that have so far chosen not to install renewable generation. In the survey, the latter group includes those who have replaced their boilers recently and did not consider installing renewables and those who did consider them but consciously rejected renewable generation in favour of fossil fuels.

Focus Groups

Incling's platform was used to conduct 5 online focus groups, each lasting 1 hour and comprising 6 or 7 participants, with 2 groups made up of individuals *with* renewable energy at home and the remaining 3 groups comprising individuals *with no* renewable energy systems at home. ***rb&m*** devised a structured Topic Guide covering key questions, which included presenting all groups with a series of logos to test brand recognition. Those in the groups comprising individuals without renewables were also provided ahead of the session with examples of performance estimates for an Air Source Heat Pump and a Solar PV system to review. Members of the ***rb&m*** team convened and mediated the groups and transcribed and analysed the results. The quotes used to illustrate this report are verbatim unless indicated.

Survey Sample	Sample Size
Nationally representative sample of UK adults who are responsible for the energy system in their house	2,000
Those who use some form of non-renewables for space/water heating	1801
Those who have some form of renewable generation installed in 2,000 sample	199
Those who use some form of non-renewables for space/water heating and installed a new boiler within the last five years	575
Those who use some form of non-renewables for space/water heating and installed a new fossil fuel boiler within the last five years and considered installing renewable alternative	123
'Boost' sample comprising of UK adults who are responsible for the energy system in their house and who have at least one renewable generation technology in their home	502
Note: Due to uncertainty surrounding consumers' understanding of MicroCHP, those identifying that they had this installed at home were removed from the achieved sample, reducing the numbers of those with renewables to 432.	
'Boost' sample comprising of UK adults who are responsible for the energy system in their house and who have at least one renewable generation technology in their home. Those with MicroCHP removed	432
Those with at least one renewable system including GSHP	92
Those with at least one renewable system including ASHP	89
Those with at least one renewable system including Biomass	68
Those with at least one renewable system including Solar Thermal	156
Those with at least one renewable system including Solar PV	209
Note: To allow for viable comparisons *between* technologies, those respondents who had only one renewable technology installed were identified as follows.	
Those with a heat pump only	55
Those with a biomass boiler only	21
Those with a solar installation only	226

Consumer Research in the Microgeneration Sector: Nine Lessons

1. Carbon and Environmental Concerns are drivers of take-up. Those who have invested in renewables were motivated by environmental concerns as much as financial objectives. This finding suggests that the goal of reducing carbon emissions and making green consumer choices are perhaps underestimated as consumer motives. Placing more emphasis on how all renewable technologies (and renewable heating in particular) reduce carbon emissions may improve awareness and boost installation numbers among some consumer groups.

2. Satisfaction with renewables is generally very high but within that overall level, there are areas of concern. Those who have heat pumps are less satisfied than those with solar technologies. And overall more than 1 in 10 have had to make a complaint about the system, 16 per cent said ongoing support had been difficult, and close to half felt their expectations in terms of bill savings and energy generation have not been met.

3. For those without renewables, the results indicate that – if engagement doesn't improve – the actual market for renewable space heating may be considerably smaller than usually assumed. Most consumers are not currently engaged with renewables. Among all households in the survey that do not yet have any form of renewable installation, around two thirds say it is unlikely they will consider any form of renewable heating within the next five years. Even when the Boiler Upgrade Scheme is explained, the number who would consider renewable heat remain a minority – just one in five. Furthermore, only a minority of the nationally-representative sample claimed awareness of existing government incentives and the brand recognition of MCS is low.

These results could indicate that the most basic and simple barrier to the uptake of renewable heating technologies is likely to be a lack of engagement with information about renewable options.

4. Consumers without renewables are deterred by more than just the cost of renewables, fearing disruption, the hassle of identifying what's right for them and the risk of being an early adopter. These findings suggests that a strategy that only focusses on bringing down the cost of the systems will not address the nearly a third of those put off by the disruption, nor those who are just fearful of making the leap without reassurances that they are making the right decision.

5. For consumers without renewables, the market needs to be de-risked. Consumers are, unsurprisingly, guarded about spending large sums on what are perceived as new or at least unfamiliar technologies to provide an essential service to their homes. Overwhelmingly, their answers indicate that they need reassurance about taking the plunge: they want certified, qualified installers who know what they're doing and who have rules to follow and who install products that meet standards and are proven to work. And they want to know there is some protection should anything go wrong: long warranties with insurance backing and an

independent body with teeth to deal with unresolved complaints and get things put right. One respondent called for an Ombudsman for the sector.

6. MCS's functions have overwhelming support. So, while the clear message is that consumers are supportive of an effective, independent body overseeing standards and assisting with complaints and getting things put right, the fact is that consumers have little or no awareness that there is already a body that fulfils most of what they wish for.

7. Consumers value independent and detailed impartial information the most. They want to know what works and in particular what will work for them in their property and in their individual circumstances. They want access to accurate calculators and/or home visits.

There is some evidence that consumers are sceptical of *information that focuses only on the benefits* when there are obvious disadvantages (such as the disruption associated with heat pumps and, often, the need for new emitters, water tanks etc.). Consumers need the whole picture in order to make an informed choice.

And they want to get that whole picture from a trusted source, one that is, and is perceived to be, independent and objective, with Which? and MoneySavingExpert seen as models by the focus groups. One respondent said that what is really needed is a National Institute of Clinical Excellence for renewables and others spoke of wanting a trusted 'one-stop shop' for information, advice and redress.

8. Consumers are often unaware of the crucial documents they should be given or they are not provided with those documents. Adopters in the survey were largely unaware of key terms and documentation and a majority indicated that they did not receive pre-and post-installation information that is compulsory under either the MCS Certification Standard or the relevant Consumer Code.

This might suggest that a 'joined up' 'one-stop shop' centre of excellence could usefully act as a repository where things such as the performance estimate, the Insurance-backed guarantee, the MCS certificate and other key documents are all accessible.

9. Performance estimates are critical documents, but current iterations were not well-received. The formal MCS performance estimate is the first MCS document given to the consumer and therefore key to building the MCS brand recognition and underlining the MCS role in providing impartial information. Ideally, it should provide critical and balanced information to the consumer upon which he/she can make an informed choice.

Unfortunately, reaction to two estimates shown to the focus groups were mostly negative, particularly that for an Air Source Heat Pump. To be truly useful to the consumer, the groups felt the estimates needed:

- to be put in context – what they would be able to achieve in their circumstances and the range of possible options, not just the single technology
- more visual presentation, using graphs/infographics
- All costs included, so if a heat pump would require a water tank and new radiators, the costs of those should be on the estimate too

One respondent particularly liked the EPC visuals and its approach to listing out possible actions, as it enabled her to prioritise.

Objective 1: Learn the basis for consumer decisions to invest in low carbon technologies

Key message: environmental concerns are as important as financial objectives in opting for renewables

Key Results

- *Potential cost saving, reducing carbon footprint, comfort and health were all identified as important by more than eight of ten of those with renewables, closely followed by financial incentives. Three out of four said achieving a 'Return on Investment' (ROI) or a quick 'payback' was important.*

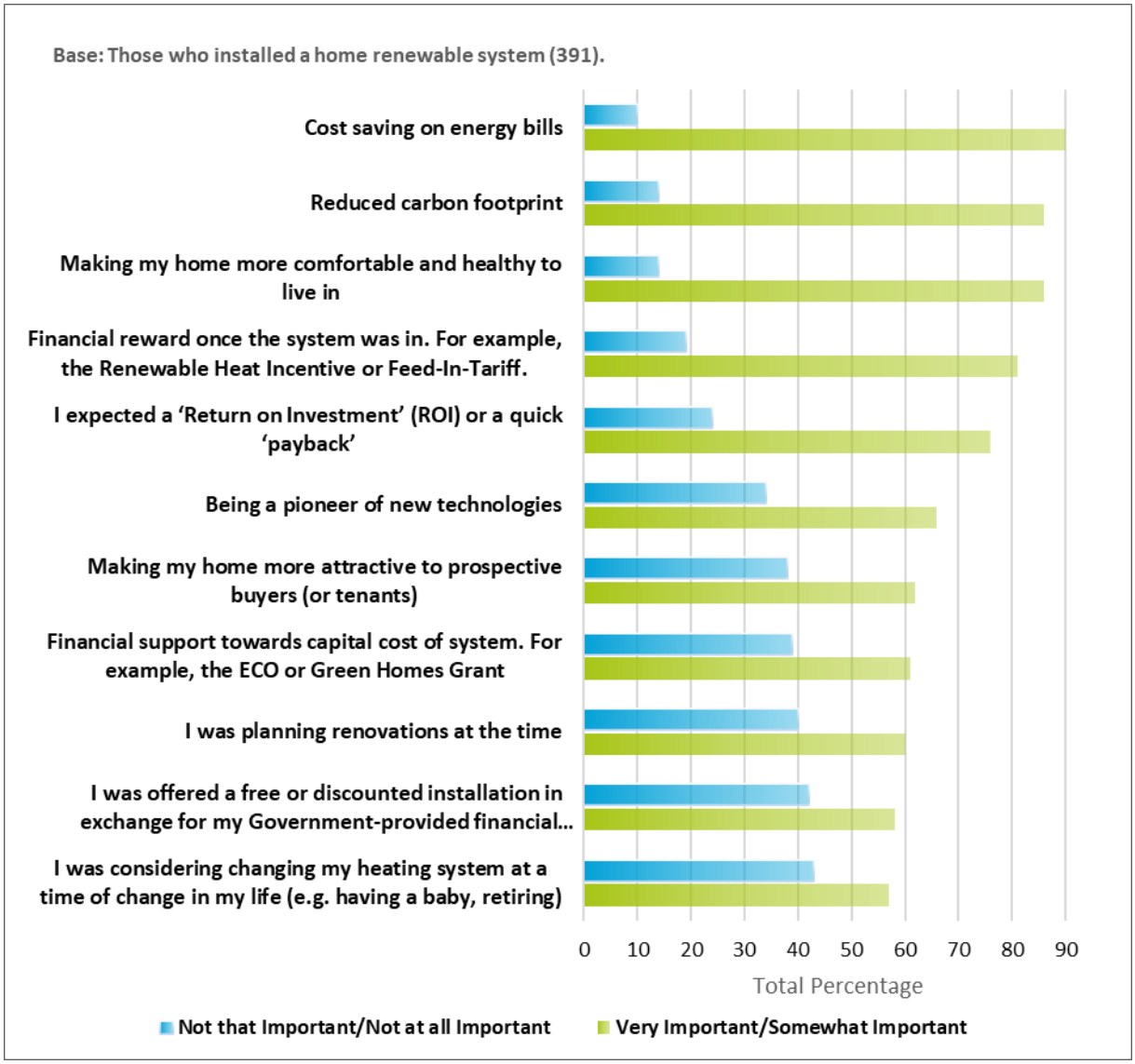
- *When asked for other reasons why they opted for renewables, the most cited centred around the environment: 'doing my bit for the planet' or the environment, energy conservation, reducing my carbon footprint.*

- *Focus group participants with renewables had both financial and environmental reasons for installing renewables. Having an EV also motivated some to install solar PV.*

Using survey questions put to a large sample of those who have installed a renewable technology ('adopters') and discussions in two focus groups of adopters, we identified the factors that motivate consumers to make the switch away from fossil fuel generation. We call these factors 'drivers'.

As Chart 1 shows, for those in the survey potential cost savings on energy bills is identified as the most important factor overall, but other 'drivers' such as what's best for the environment and 'making my home more comfortable and healthy to live in' are almost as important. Consumers also seek an early return on investment when they install renewable generation. Other non-financial factors were identified. For example, 'being a pioneer of new technologies' at 66% is ranked higher than 'making my home more attractive to prospective buyers (or tenants)' (62%).

Chart 1: Q27. Thinking about the factors that encouraged you to install a home renewable system, how important were the following in impacting/influencing your decision?



The respondents were asked if there were any other factors that encouraged them to install renewable energy generation (Q28). Respondents provided hundreds of responses to this question, of which the most cited related to environmental reasons: 'Doing my bit for the planet'/the environment/energy conservation/climate/carbon footprint was the most frequently cited, followed by reducing costs of energy/saving money. Less frequently cited were 'to get government incentives', 'payback/Return on investment', 'it was recommended' and 'replacing old boiler or roof'.

Typical responses:

- *'because I want to be more sustainable'*
- *'energy conservation'*
- *'to save our next generation'*
- *'I use renewable system to reduce my carbon footprint'*
- *'climate change'*
- *'clear conscience'*

- *' to prevent worsening the climate problems'*
- *'just wanted to be greener'*
- *'I wanted to do my bit for the environment plus it is the future way to go.'*

There was some variation across the sample:

- cost saving was more important for the older (35-54 and 55+) than the youngest group (18-34).
- a cheap service was more important to the younger cohorts, to those working, to those with a heat pump and to self-builders.
- reducing carbon footprint was more important among the 35-54 age-group than the other age cohorts;
- financial support towards the capital cost of the system was much more important for the younger age groups than the oldest group and for those self-building, as well as for those with a heating technology rather than PV.
- financial rewards and a return on investment were more important to the two younger age groups than to the oldest and to those working. Return on investment or payback was also more important for those with a Ground Source Heat Pump.

There was also possibly an indication of a certain nervousness among some consumers about making the leap into renewables: it was more important to the younger age-groups, those working and self-builders in the survey that the installer had worked for them before, had been recommended to them and/or that they worked for a well-known company.

In the focus groups, some of those in the adopters groups were clearly motivated by the financial side:

- '*I installed them for financial reasons*.' Householder with renewables (domestic and commercial)

- *'I'm getting a very good Feed-In Tariff, that was one of the reasons I did it.'* Householder with renewables (since 2014)

Others though were keen to stress that financial reasons were not the only, or even the primary, reason for investing in renewables.

- *'I was doing it for green and practical reasons'* Householder with renewables

- *'I was doing it more for environmental than financial reasons'* Householder with renewables

A number mentioned 'pressure' from their family – a son, a daughter, a wife and grandchildren had all wanted renewables – or strong personal recommendations from those they knew who had installed them. Those with a little money in the bank saw it as a 'good thing' to spend that money on, with any return more of an added bonus than the key motivator. That said, saving on energy bills and achieving payback were also strong motivators.

The findings suggest that the goal of reducing carbon emissions and making green consumer choices are perhaps underestimated as consumer motives. Placing more emphasis on how all renewable technologies (and renewable heating in particular) reduce carbon emissions may improve awareness and boost installation numbers among some consumer groups.

What matters in choosing an installer of renewables?

Key message: when choosing an installer, consumers want reassurance that an installer is certified for the work and assurance that they have protection should any problems arise.

Key Result

- *Around nine out of ten respondents cited workmanship warranties and government-recognised certification as important attributes when selecting an installer*

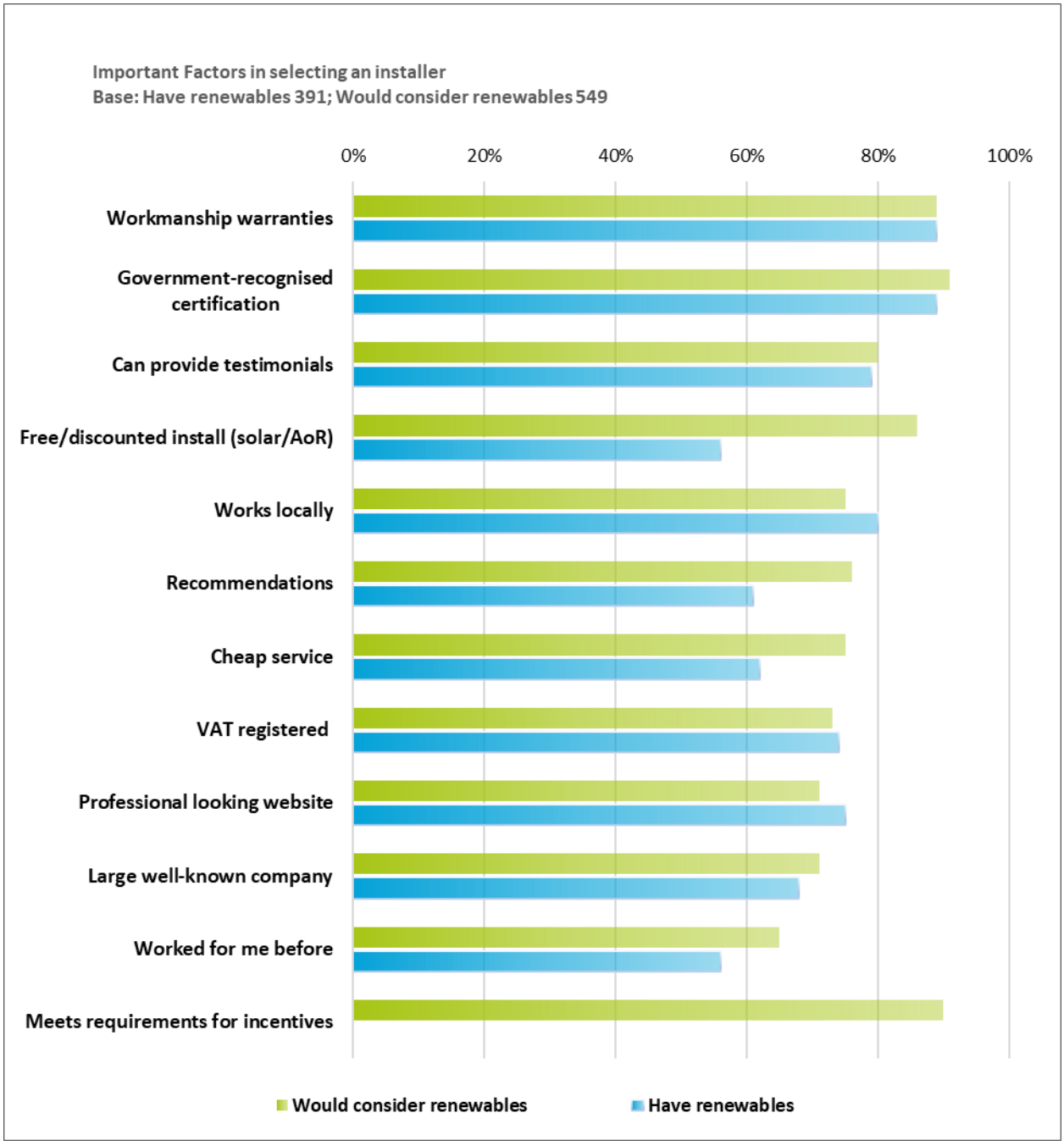
The survey asked what was or would be important to consumers in selecting an installer of energy systems, among adopters (Q34) and among 'considerers' (those without renewables who would consider them, Q24)

The message from both groups is that they want (or wanted) to be assured that the installer is approved and that they will put things right if there are any problems. It was also important to both adopters and considerers that the installer could provide testimonials:

- around 9 out of 10 regard the installer having a government-recognised certification as important
- around 9 out of 10 regard the provision of workmanship warranties as important
- around 8 out of 10 consider it important that the installer can provide testimonials.

Chart 2 shows the percentage of each group finding a characteristic very or somewhat important (ie 'net important').

Chart 2: Q19 and Q34 Thinking about how you selected your installer, how important were the following attributes to you?



The focus groups supported this finding, with consumers who had renewables wanting reassurance: they don't want to be ripped off, they are worried about companies going bust, and they had heard 'some horror stories' (even if their own experience was good).

- *`[I worried about] companies going bust/ripping people off. So I chose a long-standing local firm that others trusted.'* Householder with renewables

Those who would consider renewables appear to give slightly more importance to a cheap service than those who have renewables already (75% compared to 62% net important) though as noted above, this was also more important to younger and working householders

with renewables. Considerers also give more importance to a free or discounted install (in return for signing over the incentives) than those who have renewables do (86% compared to 56% net important).

Among considerers, a certified installer was particularly important for the oldest age group (96% important) as was a workmanship warranty (99% important). The warranty was also more important for home-owners than renters (95% v 74%), as was the installer being eligible for financial incentives.

Objective 2: Understand better how existing messages and information about low carbon technologies are perceived, and test MCS brand recognition.

In the survey, we asked adopters and considerers about sources of information and advice they would or have turned to in looking at renewables and asked adopters to indicate which sources they found most useful. We also asked those in the adopters focus groups about the sources they looked to, and asked those without renewables what they would look for if they were to consider renewables.

We also sought feedback from the non-renewables focus groups on two MCS standard performance estimates – one for an air-source heat pump and one for solar PV.

The findings suggest that when consumers first set out to investigate renewable options, they tend to value their own research and independent sources the most. Information provided by the body that certifies renewable products and services was ranked second most important. Later, when consumers are deciding on installation options, they want access to online calculators, home visits from independent experts and access to expert written advice.

A. INFORMATION

(i) Initial Sources of Information about Renewable technologies (Q23 and Q32)

Key message: consumers value their own research, but they also want independent and expert advice as well as online calculators.

Key Results

When asked what information they value the most when first setting out on the consumer journey to investigate renewable options, both adopters and those who would consider renewables ranked the following sources highest:

- *their own internet research (75% considerers, 79% adopters)*
- *information from the body that organises installer certification (72% considerers, 77% adopters);*
- *information from trusted independent bodies such as Which?, the Energy Saving Trust or Money Saving Expert (74% considerers, 69% adopters); and*
- *a local renewable energy installer (76% adopters).*

In the adopters' focus groups, sources included family, friends and work colleagues, the energy companies and in one case a local 'green' initiative. Others mentioned online fora, and trusted websites such as Which?, Money Saving Expert and Energy Saving Trust.

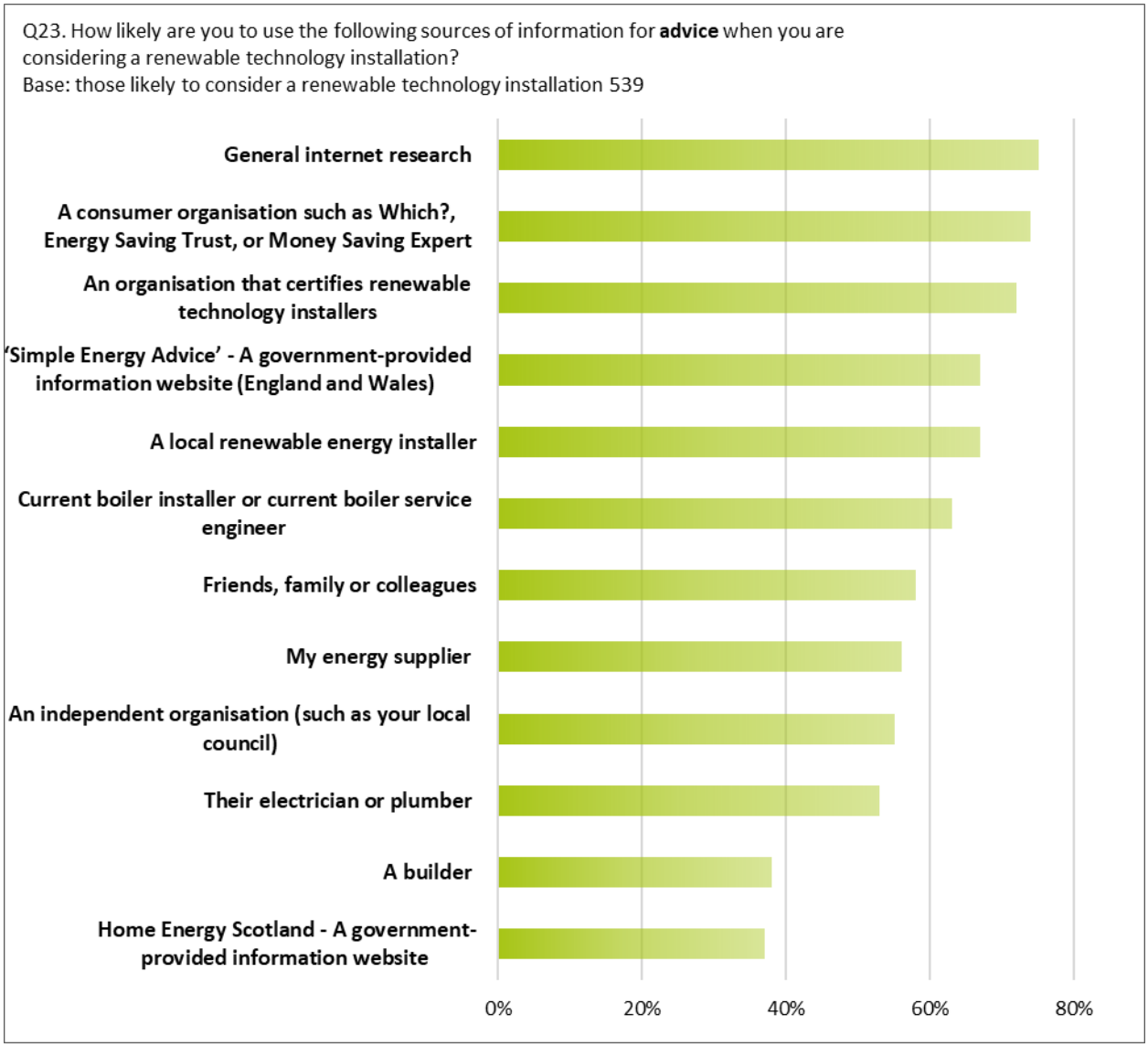
The survey results clearly show what sources of information consumers value the most when they first set out on the consumer journey to investigate renewable options. When those who may consider a renewable installation and those who already have renewable generation were asked which sources were, or are likely to be, the most valuable, the results were almost identical for both groups. Those ranked highest (in both groups) were:

- Their own internet research;
- Information from the body that organises installer certification; and
- Information from trusted independent bodies such as Which?, the Energy Saving Trust or Money Saving Expert.

Information provided by local renewable energy installers was also ranked highly by those who already have renewable installations.

549 respondents said they were likely to consider a renewable technology installation. Chart 3 shows the sources of information they said they were likely to use in doing so (ranked by net likelihood).

Chart 3: Q23. How likely are you to use the following sources of information for advice when you are considering a renewable technology installation?



In the focus groups of people without renewables at home, several felt there was a distinct LACK of information that they felt they could trust:

- *'[There's] definitely a lack of one good source….you end up on people's sites that are trying to sell you something rather than just giving you the facts and the figures; and it's not independent.'*

- *'You need some trusted source that will tell you A to Z and not just A to X.'*

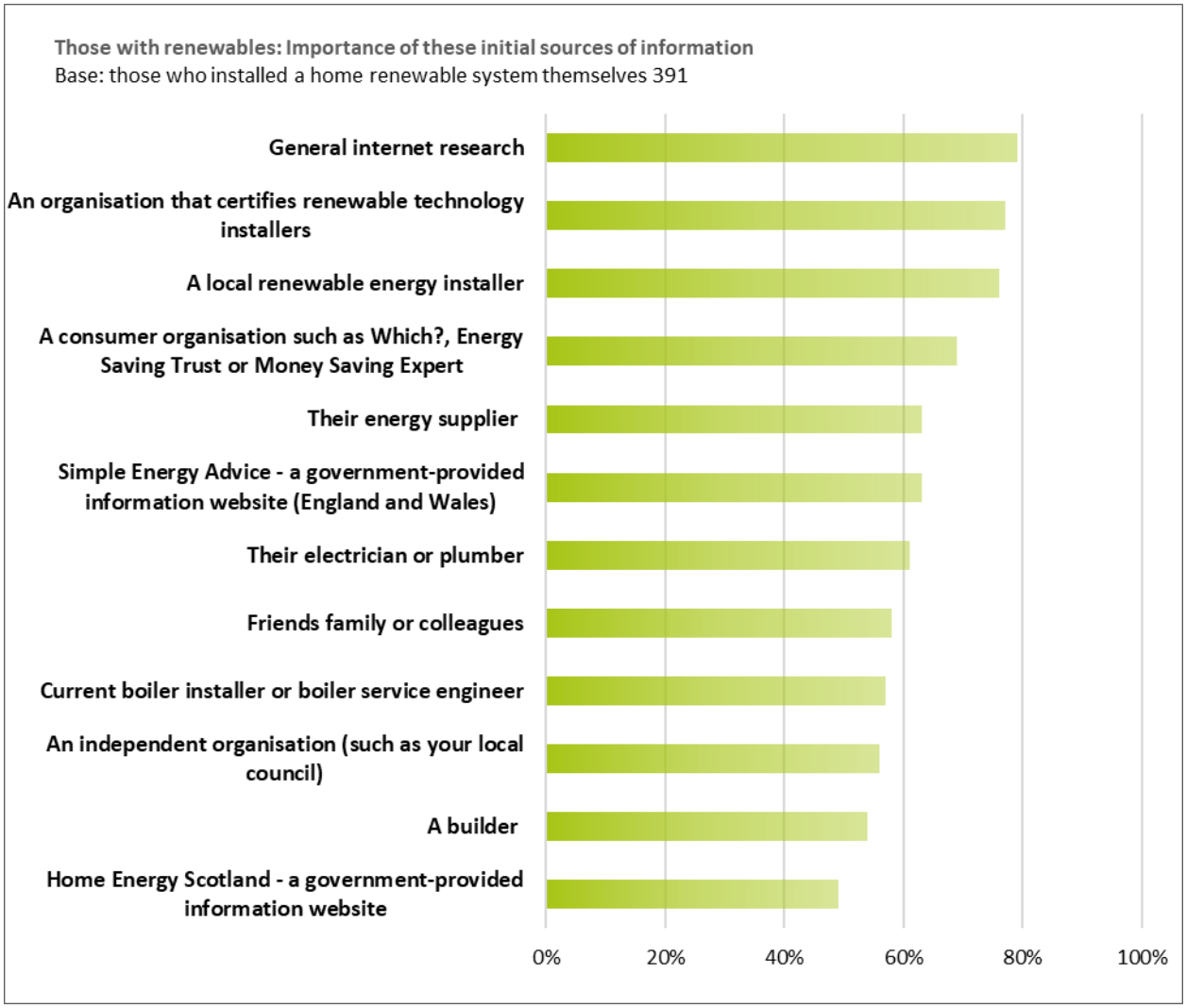
- *'Everybody wants to sell you something, but we need the full story.'*

(for more on this see Objective 3: Barriers).

Sources of information for those with renewables (Q32)

391 respondents who have installed a home renewable system were asked about the importance of these sources of Information when first looking into having a renewable technology installation. Their responses (ranked by net importance) are shown in Chart 4.

Chart 4: Q32. How important were the following sources of information when you were first looking into having a renewable technology installation?



(ii) Sources of <u>advice</u> on installation options for a renewable energy system (Q25 and Q35)

Key Results

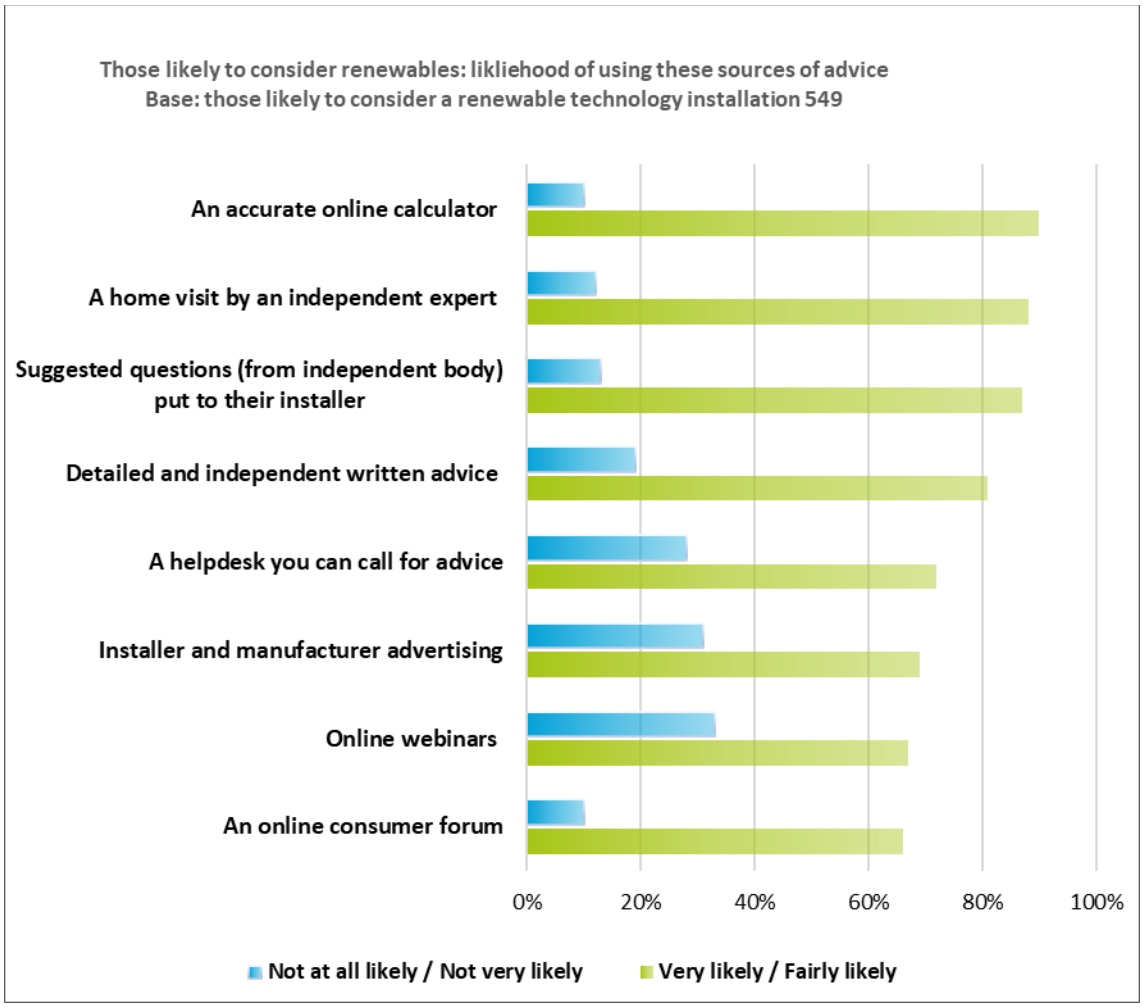
- *The top likely sources of detailed advice for those who said they were likely to consider a renewable technology were an accurate online calculator (90%), a home visit by an independent and expert organisation to assess whether a specific technology is suitable for their home and circumstances (88%) and suggested questions they could ask their installer (provided by an independent consumer or certification body) (87%)*

- *For people in the survey who have installed a renewable technology their top two sources of information were the same as above, but in third place 71% of them said that they used detailed and independent expert written advice to study, provided on paper and online. These were also ranked the most useful sources.*

- *In the focus groups of those with renewables, talking to others who had installed already was one of the main sources of advice, along with trusted online fora and websites, and those involved with a local 'green living plan'.*

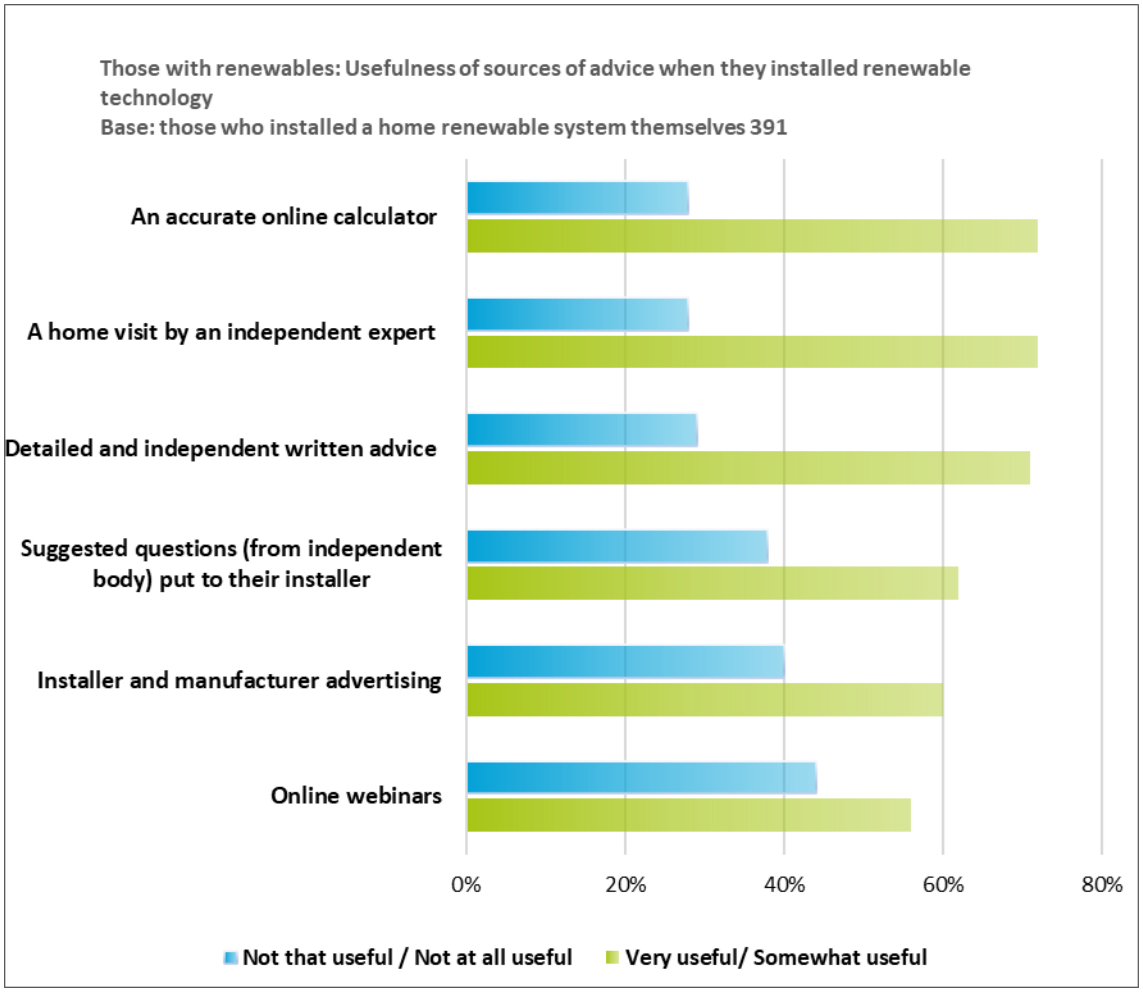
549 respondents who said they were likely to consider a renewable technology installation were asked: If you decide to have a home renewables installation, how likely are you to seek information from the following sources to make sure that you make an informed choice?

Chart 5: Q25. If you decide to have a home renewables installation, how likely are you to seek information from the following sources to make sure that you make an informed choice?



We also asked those that have installed a renewable energy system what sources of information were *most useful when they obtained advice on installation options*. At that stage in the consumer journey, an accurate online calculator that could be used to estimate energy generation and/or running costs was identified as the most useful. The results, ranked in order of usefulness, are shown in Chart 6.

Chart 6: Q35. How useful were the following sources of information when you obtained advice on installation options for your energy system?



It is interesting to note that some of these options ranked by the respondents are not currently provided in a formalised way. Although there has been access to online calculators, they have not been provided in line with formal MCS performance estimate methodology and processes for their maintenance are opaque. Additionally, home visits by independent experts are not formalised throughout the UK although they are available in some places such as via the Home Energy Scotland service.

In the focus groups there was a strong emphasis on what were seen as impartial sources of information such as those consumer organisations mentioned above, along with online fora and talking to those who already had renewables.

- *'I would personally, want testimonials from people who have already got them how they sourced it and how they found the whole process. … I think word of mouth would be better for me.*' Householder without renewables

More generally there was a desire for personalised advice, with calculators they could use to assess for themselves being popular.

- *'…a lot of this information is so compartmentalised, and it's not specific to the individual. You know, if there was a source that compiled lots of information and you were able to add in details of your home, of your family of your life stage, of your budget, and then that would spit out what you can actually adopt, I think it would be a really useful, helpful thing to allow people to make informed choices.'* Householder without renewables

- *'..if you could fill in a tick box, what is your property, how big is it and then filter it down for what might actually work for you. You don't want to spend hours researching, I don't know, air source heat pumps to then figure that, actually, that just wouldn't work in your scenario or, your roof is the wrong way around for getting the most out of solar…'* Householder without renewables

Impartial advice on an overall package of measures (not just one particular technology nor even just renewables but insulation, battery storage, EVs etc too) was seen as desirable. An objective evidence-based assessment of what would (and wouldn't) work in a particular home would be very welcome, 'a NICE (National Institute for Health and Care Excellence) for renewables' or demonstration homes for example:

- *'So, you'd be like you'd be looking for something similar [to NICE] for renewable as well. So, it will be this is the situation that you've got. This is how it should be dealt with. This is how it should be done. And then you're able to then sort of understand if the service you've received are going to receive isn't up to past would be the sort of thing I would expect*.' Householder without renewables

- *'I always wondered why the government don't have demonstration homes in the community? Give it to a household and say - this is what the technology could do to reduce your bills. So, friends and family could go and see and have first-hand testimony to what works and why.'* Householder without renewables

- *'I just think, you know, if the government was really adamant about changing fundamentally how we heat and in our homes, they should just equip people to go round and say this is what will work best for you. You know, it's not just - get a heat pump. It's not just get solar, it's about, this is a balanced approach that fits your budget, fits your style of life and is affordable for you. This is what works for an individual household*' Householder without renewables

Overall, these results show that consumers place most faith in objective performance calculators, personalised independent advice, generic information from independent sources and their own internet research.

Interestingly, we also asked those who had replaced their (fossil fuel) heating system in the last five years (ie with another such system) where **they** went for information. Six per cent didn't know where to look for information, but the rest were most likely to talk to the current boiler installer or engineer as well as doing internet research or talking to their energy supplier (see Table 1). This perhaps gives a steer on other avenues for information

about renewables if this is to reach consumers when they are looking to replace their heating system.

Table 1: Q17. How useful were each of the sources of information you looked at for advice on installing/replacing your energy system (fossil fuel)?

Source:	% seeking information	% finding source useful
Current boiler installer or current boiler service engineer	34	96
General internet research	20	91
Energy supplier	19	89
Friends, family or colleagues	16	96
A consumer organisation such as Which?, Energy Saving Trust, or Money Saving Expert	11	98
A builder	9	92
A Government-backed information website	6	68
The organisation that certifies companies that install traditional (fossil fuel) energy systems	3	92
An independent organisation (such as the local council	3	43

Performance Estimates

Key message: The current format of performance estimates is not user-friendly. More context and comparison and simpler presentation would be more useful.

One key source of information that consumers should receive on renewables is the performance estimate mandated by MCS. Those in the three focus groups comprised of householders without renewables were provided in advance with two examples: a heat pump performance estimate and a solar PV estimate.

The messages about the heat pump performance estimate were consistent across all three groups:

- The estimate lacks context/needs a frame of reference
- There are too many acronyms/it needs a glossary

- Graphs/infographics would be better

- Simplify it

- Make **all** costs clear If a heat pump would require a water tank and new radiators, the costs of those should be on the estimate too.

- *'…I can see from the running costs that you do make some savings…These figures would make a lot more sense if there was a bit more information to it. And maybe get rid of some of the stuff that's potentially confusing to the average consumer who probably just wants to get straight to the potential savings that they might make by switching to this new system.'*

- *'…there's a lot of information that's kind of irrelevant, so it doesn't make sense to the average consumer, and I feel like the document itself is set out in quite a hard way to follow. If it was just here is, cost saving here, the amount of energy produced. And here's all the statistics you need in a linear order, which kind of tells the story, it would make more sense. But here it's almost like, here's something, this corner here, something that corner. I wouldn't know where to follow. It does just need to be in a linear structure.'*

- *'…[make it something] similar to the smart meters that we have in the house; they give you all that information on the meter, so you see it in Kilowatt hours, and in monetary value, what you spend a day, what you spend in a year, what you spend per month and all that. So, something that, like, mirroring that kind of display.'*

More generally, what they actually wanted was something that provided comparisons with both the current system and with other possible renewables and even alternative approaches so they could make an informed decision from the options actually available.

- *'…would be good to have it stacked up against other things you know, this is the cost of a boiler, these are the benefits you would get from insulating your house, or sticking on an extra jumper!'*

- *'.. everything about the energy consumed and how much it produces, like kilowatt per hours and stuff; the numbers that makes sense. But I don't have much of a gauge of what to compare them to, so I can see it generates 3000 kilowatts, per hour. But then how much does a gas boiler produce, electric pumps and all that? And so, there's no reference of how good that really is. It's just numbers, and it needs, like a scale to some extent.'*

One participant held up the EPC's presentation as a possible model:

- *'…the EPC is actually set out quite nicely, you know, things you could do insulate - it will cost you this much, it will save you this much. LED lights etc…. And also, you could compare things like "Well, actually, should I just get some better insulation rather than ripping the whole boiler out?"… It's quite basic, there's not loads of*

detail, but it's actually a quite helpful way of working out if you want to do anything to the property…It's nice, it's colourful, it's easy to understand, and you can understand where the issues are, where you're doing well, where's all right'

- *'.. if you just sort of RAG rate things sometimes, red, amber, green it makes it a lot more sort of visual. Easy to understand and digest…'*

The Solar PV estimate was generally better received than the Heat Pump estimate in as much as it was felt to be clearer, but there were still criticisms:

- *'It's more concise. It's got the information you need and it's in a linear structure, so it is better set out….But… missing the cost benefits 'You might save this much by using this and all that sort of stuff is missing'*

- *'I like the [focus] on sort of the specific property and its location, so that felt like a more tailored service to myself'*

- *'…make it visual. So, like charts. ..I think if we added a bit of colour, it's a little bit more accessible.*

- *'..a bit more information would be useful, like the initial outlay costs for it'*

- *'…just have the headline figures at the top because you're scanning all the way down to the bottom to get to the bit of information you want. I'm sure they're not that interested, as a consumer, in the installed capacity of PV system, that means nothing to me yet, but that's the first bit of information I get. I probably know which way my house points. [put] the value to the customer [at the top]'*

- *'…it does obviously say there's somebody there half day, but a lot of it I don't get, like installed capacity. I wouldn't know what that is. I mean, what use is that to me? If I don't know what it is, I want the cost savings you know, how much is it going to cost me?'*

B. AWARENESS

Key message: awareness of existing government incentives is poor, though somewhat greater among those with renewables, while more claimed to know of the Boiler Upgrade Scheme.

Survey respondents were asked a series of questions on their awareness of existing government incentives (including a fictional one), and of the planned Boiler Upgrade Scheme, described in outline. Those with renewables were further asked about their awareness of certain key documents and terms, such as the MCS Certificate and insurance-backed warranties.

Awareness of Government Incentives

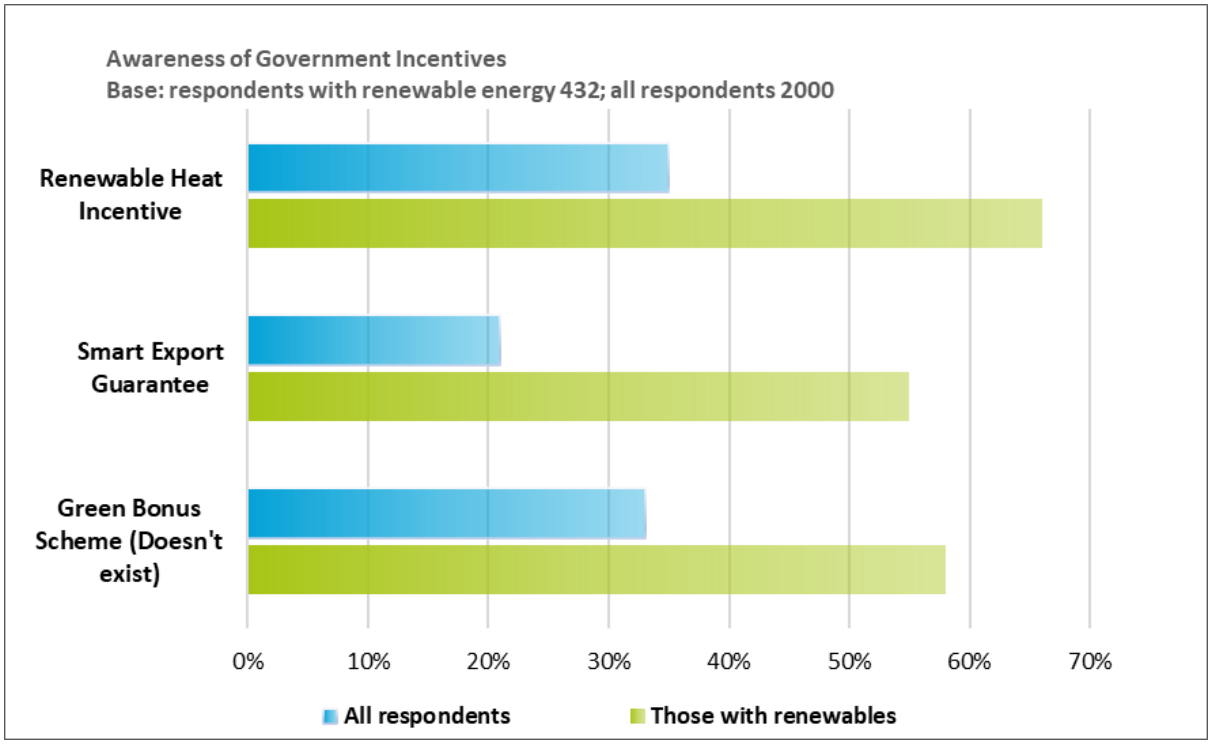
Key Results

- *There was generally poor awareness of government incentives. Out of all respondents, 35% were aware of the Renewable Heat Incentive (RHI), 21% were aware of the Smart Export Guarantee (33% claimed they were aware of the Green Bonus Scheme - which doesn't exist).*

- *Awareness was better amongst those with renewable installations. Of those with renewable installations, 66% said they were aware of the Renewable Heat Incentive (RHI) and 55% said that they had heard of the Smart Export Guarantee. (Interestingly 58% said they had heard of the Green Bonus Scheme, which doesn't exist (and 11% claimed they knew a lot about it)*

Detailed figures illustrated in the charts are provided in Appendix 1.

Chart 7: Q8. How much do you feel you know about each of the following?



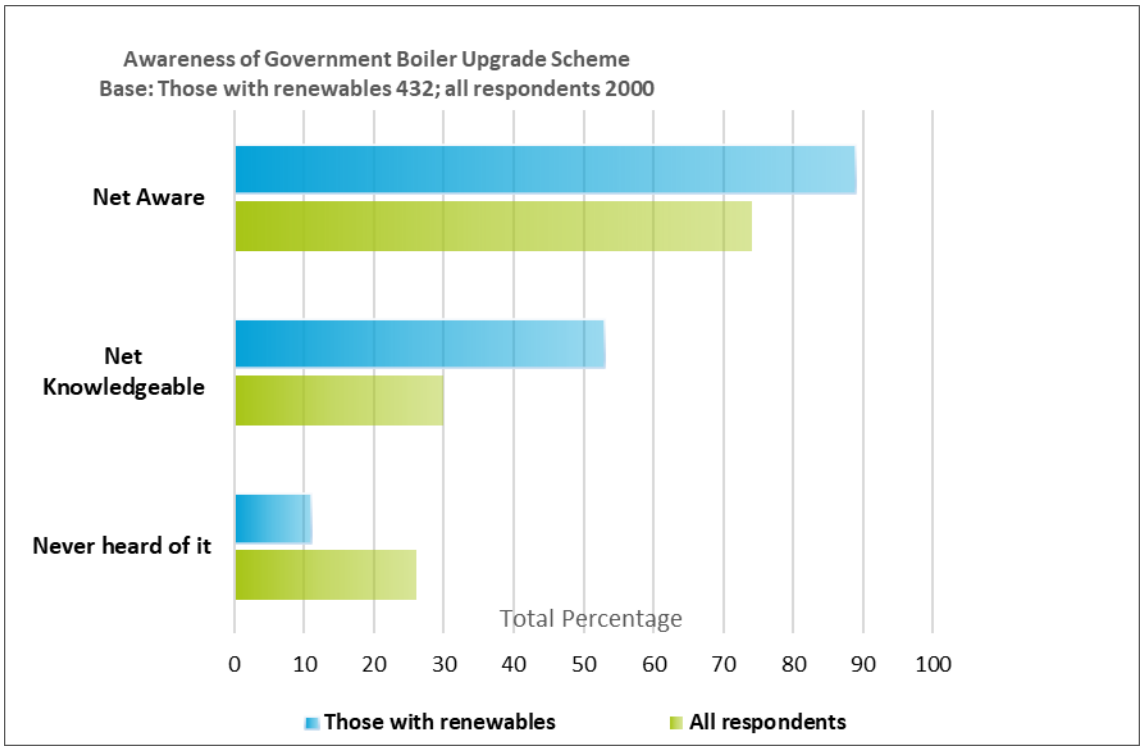
Awareness of financial incentives to help people with the cost of replacing fossil fuel boilers with Heat Pumps or biomass boilers (Q9)

Key Results

- *Out of all respondents, 74% said they were aware of financial incentives to help people with the cost of replacing fossil fuel boilers, 30% said they were knowledgeable and 26% said they'd never heard of it.*

- *2Of the 432 who have installed a renewable technology, 89% said they were aware of it, 53% said they were knowledgeable about it and 11% said they'd never heard of it.*

Chart 8: Q9. The UK Government has said that it wants everyone to phase out the installation of fossil fuel boilers such as mains gas boilers by 2035. People will be encouraged to swap fossil fuel boilers for low carbon alternatives. Have you seen or heard any news recently regarding financial incentives to help people with the cost of replacing fossil fuel boilers with Heat Pumps or biomass boilers?



Awareness of key terms and documentation (Q36)

Key message: a worryingly high proportion of those with renewables were unaware of key terms and documentation, with 3 in 10 not having heard of an MCS certificate.

Key Results

- *30% of respondents with a renewables system said they had never heard of an MCS certificate and 26% said they'd never heard of a Consumer Code.*

- *27% said that they'd never heard of an insurance backed warranty and 24% said they'd never heard of a Certification Body.*

Those with a renewables system were asked: Which of the following best describes your knowledge of each of the following names and terms that you may be aware of in relation to your renewable installation?

- 76% were aware of the term Certification body

- 74% Consumer Code
- 73% Insurance Backed Warranty
- 70% MCS Certificate
- And 69% Energy Saving Trust

30% of respondents with a renewables system said they had never heard of an MCS certificate and 26% said they'd never heard of a Consumer Code. 27% said that they'd never heard of an insurance backed warranty and 24% said they'd never heard of a Certification Body.

Low awareness even among those with renewables was reflected in the focus groups too where all bar one or two across all the groups recognised neither MCS nor the Consumer Codes and likewise didn't know what they did. The only logo that was well-recognised was Gas Safe.

C. MCS BRAND RECOGNITION

Key message: brand recognition of MCS is low, even among those who have adopted renewables.

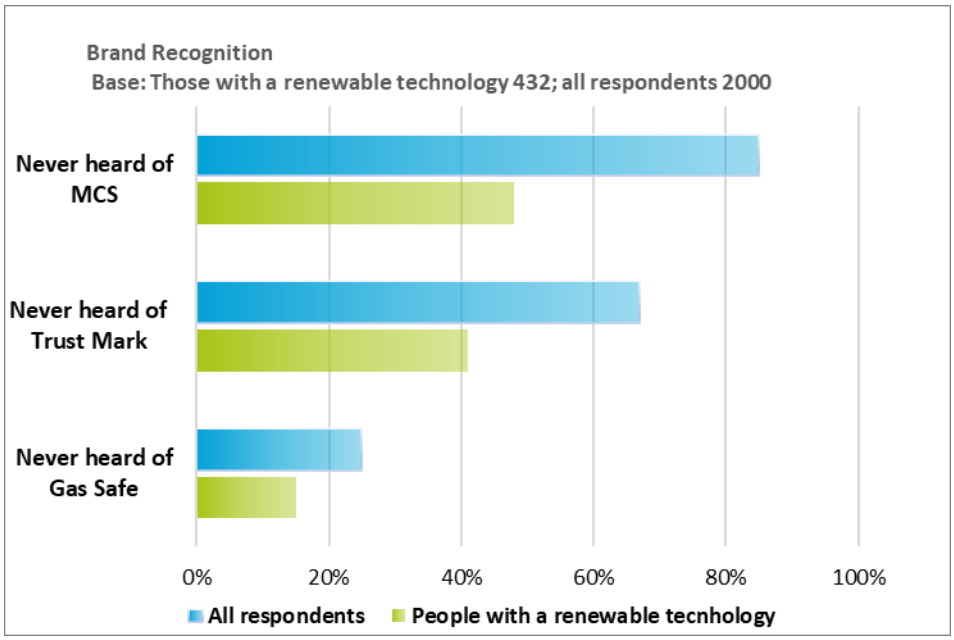
Key Results

- *Of the 2000 respondents 85% had never heard of MCS, 67% had never heard of Trust Mark and 25% had never heard of Gas Safe.*

- *Of the 432 people who have installed at least one type of renewable technology and answered this question, 48% had never heard of MCS, 41% had never heard of Trust Mark and only 15% had never heard of Gas Safe.*

In both the survey and the focus groups, we tested brand recognition. Survey respondents were asked if they had heard of MCS, Trust Mark and Gas Safe; focus group participants were shown the logos of the same organisations and of two consumer codes, RECC and HIES, and asked to say which, if any, they recognised. The results suggest brand recognition of MCS is low, even among those who have adopted renewables. Consumers clearly indicated elsewhere that an installer who is certified/qualified is particularly important to them, but it would appear they do not know that MCS is a good place to start to look for one.

Chart 9: Q6. Do you recognise the following brands?
Q7. Home renewables are systems for generating renewable energy sources at home, such as from solar panels, or wind turbines. Thinking about home renewables, do you recognise the following brand (MCS)?



In the focus groups, half of those with renewables recognised the MCS logo, but none of those without renewables did. There was even less recognition of the Consumer Codes. In one group, around half recognised Trust Mark, but its logo was generally not recognised across all other groups. In contract, the Gas Safe logo was well-recognised: in two groups (one with and one without renewables), all participants said they knew it, while in the rest the majority indicated recognition.

Objective 3: Learn what barriers need to be removed and what needs to be put in place for consumers to invest in low carbon technologies.

The survey found nine out of ten household energy decision-makers have a non-renewable energy system, with the most common being gas boilers connected to the gas mains (77%), while a quarter (23%) have another type of non-renewable energy system, including oil boilers (7%), electric heating (not storage) or electric storage heating (both 5%).

The consumer survey was designed to identify the barriers that exist that both prevent or deter consumers from opting to install renewable generation and what can be put in place to help consumers make the switch to cleaner energy generation.

The *barriers* were identified using survey responses from households that have so far chosen not to install renewable generation. We sought the views of the one-third of those in the sample who had installed or replaced their energy system in the last 5 years, both those who did not consider installing renewables and, in particular, those who **did** consider using renewable generation but consciously rejected that option in favour of one powered by fossil fuels.

Barriers

1. Lack of engagement

Key message: The vast majority of consumers have not engaged with renewables as an option for their home energy, and financial support does not greatly increase the likelihood that they will do so in the next five years. The size of the market will be severely restricted if this is not addressed.

Key Results

- *Among all households in the survey that do not yet have any form of renewable installation, around two thirds say it is unlikely they will consider any form of renewable heating within the next five years.*

- *Just over 10% overall said they are likely to consider some form of renewable heating during the next five years and just under 25% don't know.*

- *Even when the Boiler Upgrade Scheme is explained, the number who would consider renewable heat remain a minority – just one in five.*

- *Just over 1 in every 8 households (13%) are likely to consider an Air Source Heat Pump (the potential market for Solar PV is larger, with just over one in six households likely to consider installation within 5 years);*

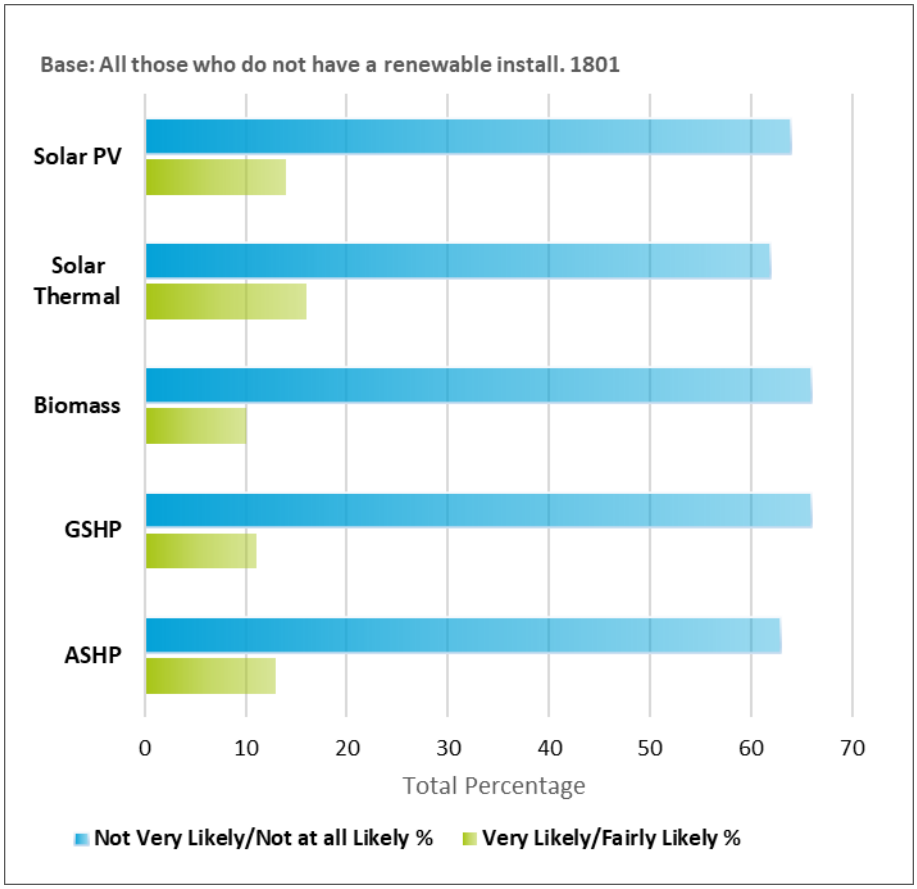
- *Six out of ten (60%) say they are not willing to even consider an ASHP within the next five years even when they are told of the help available under the Boiler Upgrade Scheme*.

- *It appears that most consumers are not engaged with information about renewable options or are unaware of renewable heating as a viable option when they plan a boiler upgrade.*

Around two in every three households that currently do not have a renewable installation say it is unlikely they will consider any form of renewable heating within the next five years. Only around 1 in 10 said they are likely to consider some form of renewable heating during the next five years and just under 25% don't know. A slightly larger proportion of people say they will consider Solar PV or Solar Thermal.

The figures for each technology are given in Chart 10. This shows just 1 in every 8 households (13%) are likely to consider an Air Source Heat Pump. The potential market for Solar PV is larger, with just over one in six households likely to consider installation within 5 years.

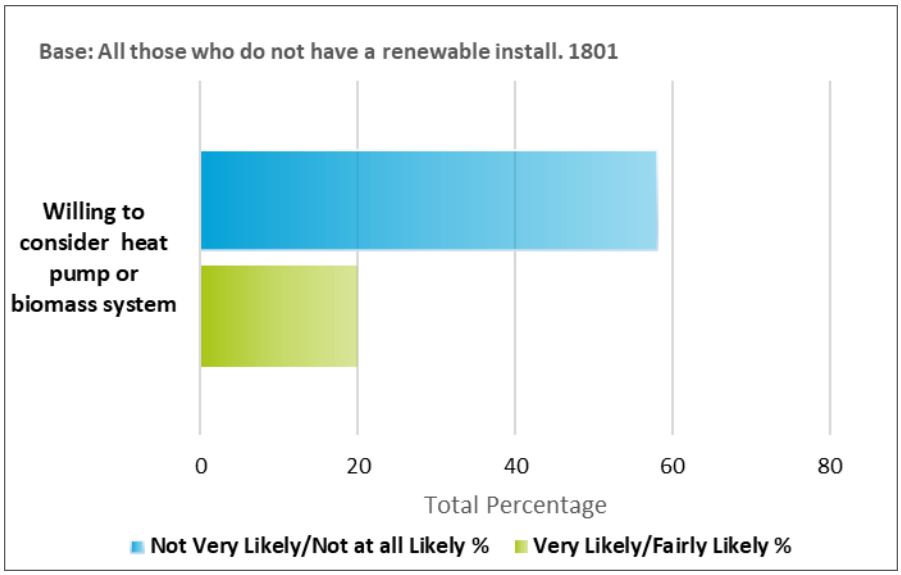
Chart 10: Q21. How likely is it, if at all, that you will consider installing any of the following technologies within the next 5 years?



We also probed how much this might shift, if at all, with the introduction of Boiler Upgrade Scheme. Respondents were told that from April 2022, the UK Government intends to offer householders in England £5,000 towards the cost of the installation of an air source heat pump or a biomass system and £6,000 for ground source heat pumps and that this could meet around half the typical cost of an air source heat pump.

The number of people willing to consider a change to renewable heating within the next five years did increase slightly to just one in five households. But six out of ten (60%) are still not willing to even consider it.

Chart 11: Q.22 Thinking about this new offer, how likely is it that you will consider installing a heat pump or biomass system to heat both your home and hot water within the next 5 years?



The focus groups found a similar lack of engagement around renewables:

- *'I've never heard of them [heat pumps] before. I was like, Wow, what's this kind of thing? Like, you know, the heat pump has never come to my attention before'* Householder without renewables

- *'..I think for right now we just sort of stick to what we are aware of, what we know.'* Householder without renewables

Lack of engagement: recent heating system installers

This lack of engagement with renewable options is brought into sharper focus when those who stuck with fossil fuel boilers when they replaced their heating system within the last five years are asked for their opinions. Although a key target market, the survey results suggest that, if anything, they showed an even greater lack of engagement with renewables.

Key results

- *Just under 600 of those in the survey had installed within the last 5 years (575), representing nearly a third of the sample*

- *Of these, 80% (461 people) said they did not even consider installing a heat pump*

- *92% said they did not consider installing biomass*.

- *The most common reason for installing was to have a more efficient system yet most did not even consider replacing an inefficient system with a renewable energy system*.

To find out why these consumers consciously rejected renewables in favour of those powered by fossil fuels, we asked them why they had decided to replace their boilers. The most common reason was that their existing one was old and inefficient (42%), a further fifth said that they just wanted a more efficient model (21%), or that it was an emergency (20%), while 16% said that their boiler was working but was not reliable.

This result suggests that having a more efficient system was the main driver – yet most of these consumers didn't even consider replacing an inefficient system with a renewable energy system.

Overall, these results indicate that the most basic and simple barrier to the uptake of renewable heating technologies is likely to be a lack of engagement with information about renewable options and/or a lack of awareness of renewable heating as a viable option when boiler upgrades are planned.

2: Lack of reliable information

Key message: consumers feel they lack access to accurate, reliable, impartial information about what works and what will work for them. Without it, they lack the confidence to go with renewables.

The survey findings on sources of information and advice, set out earlier, show that consumers place a high value on doing their research supplemented with information from sources regarded as objective and trustworthy. It seems clear that there is a real appetite among consumers for relevant, useful, impartial information about renewables. Regrettably, there is also some strength of feeling that it is just not there right now, that they don't feel they can trust much of what information there is and that this acts as a real barrier to switching to renewables.

Some of this is about just not knowing where to start:

- '*I think I'm going to have to do loads of research and understand all these things. Where do I start?* 'Householder without renewables

- '*I'm open to like solar panels and things like that but don't necessarily know how to go about it, because there isn't a lot of literature and a lot of information about.'* Householder without renewables

- '*I would not know what to turn to know what would be the best options, as far as, using my money well and trying to be sensitive as well to the environment….* Householder without renewables

But there's also a feeling that what is there cannot be trusted because it's not independent or impartial:

- *'[There's] definitely a lack of one good source….you end up on people's sites that are trying to sell you something rather than just giving you the facts and the figures; and it's not independent.'* Householder without renewables

- '*I just run out of patience with it in the end, because I couldn't find something that I genuinely thought was independent and factual and correct*.' Householder without renewables

- *'…[finding] somebody who can give us the information I feel we can trust. It is the biggest barrier… they only want to tell you the advantages. They don't want to tell you what's going to happen when it all goes wrong or it's going to cost you extra money.'* Householder without renewables

What they want is 'the full story', the pros AND cons, what works and whether it will work for their particular circumstances. But that is not what they felt they would or can currently get:

- *'You need some trusted source that will tell you A to Z and not just A to X.'* Householder without renewables

- '*Everybody wants to sell you something, but we need the full story.*' Householder without renewables

- *'So … you'd be looking for something similar [to NICE] for renewable as well. So it will be this is the situation that you've got. This is how it should be dealt with; this is how it should be done. And then you're able to then sort of understand if the service you've received are going to receive isn't up to past would be the sort of thing I would expect*.' Householder without renewables

- *'.. we don't know enough about it. There aren't people around there to tell us about it. The ones that do don't give us everything that we want* ' Householder without renewables

- *'I think there needs to be a more sustained and thought through communication campaign about why its beneficial beyond just the environmental impacts, but also what practical steps need to be taken in your homes. What kind of homes does it make sense for? I live in a terraced house. Where exactly is this heat pump going to go? Is it going to mean I lose some of the garden? …'* Householder without renewables

- *'I always wondered is why the government don't have demonstration homes in the community?.'* Householder without renewables

- *'I just think, you know, if the government was really adamant about changing fundamentally how we heat and in our homes, they should just equip people to go round and say this is what will work best for you. You know, it's not just - get a heat*

pump. It's not just get solar, it's about, this is a balanced approach that fits your budget, fits your style of life and is affordable for you. This is what works for an individual household' Householder without renewables

The findings suggest that a real job needs to be done on making information on the options – and how they perform in relation to existing familiar systems – readily available.

Barriers: real and imagined

Key message: consumers are deterred by more than just the cost of renewables, fearing disruption, the hassle of identifying what's right for them, the risk of being an early adopter.

Key results

- *Among the 575 households that have installed a new fossil fuel boiler in the last 5 years, 20% did consider installing a heat pump and 8% countenanced biomass but ultimately did not go ahead.*

- *Half of these (49%) said they decided not to go ahead because those options were too expensive. Three in ten (29%) said the renewable options were too disruptive, while 16% felt that it would take too long to research and consider the possible renewable options*.

- *In the focus groups of those without renewables, concerns about disruption, lack of space and a lack of education about renewables were all identified as barriers, in addition to cost.*

Out of the 575 people in the survey who had installed a fossil fuel boiler within the last 5 years a small but significant proportion did consider renewable heating *but decided against*: 20% (114 households) considered installing a heat pump and 8% (48 households) considered installing biomass (Q14 and 15a). Their demographics and decisions give critical insights into the real and imagined barriers to the deployment of renewable heat.

Those who are most likely to consider renewable heating:
- younger people (aged between 18 and 34);
- men;
- those in work;
- those in social grade C2DE (rather than ABC1); and
- those living in a city or suburbs.

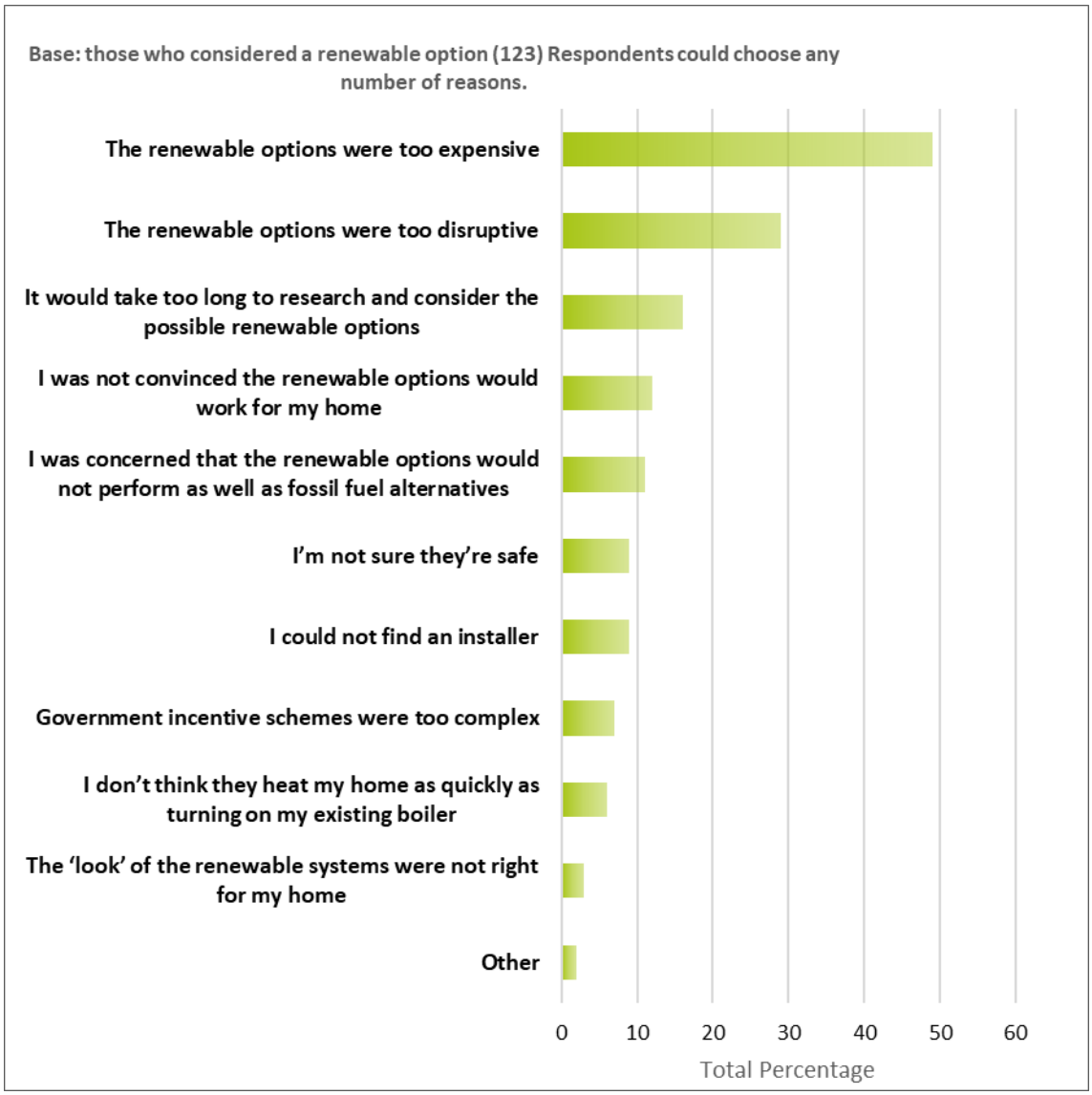
All ultimately decided against. They were put off by:
- the cost;
- potential disruption; and/or
- the potential hassle in carrying out the research.

Just under half (49%) said the renewable options were too expensive while 29% said renewable options were too disruptive. Just over one in 6 (16%) said it would have taken

too long to research and consider the renewable options. A significant minority of consumers are worried that renewable technologies may not be right for their properties.

The reasons for not going ahead with renewable heating are set out below.

Chart 12: **Q15a. For what reason(s) did you decide to not go ahead and install a renewable heating system?**



The responses varied significantly by age. Only 28% of those aged between 18 and 34 identified the cost as a problem and that age group was more likely to identify disruption as the main barrier. On the other hand, 67% of those aged between 35 and 54 were deterred by the cost.

The focus group participants too were put off by the cost but also by potential disruption, by fears of damage to the property and by lack of space. One mentioned being unable to find companies to quote for renewables. Renters felt they had no choice in the matter.

Renewables were considered expensive:

- '*..We were looking into [heat pumps] but at the moment, the cost of them; I just think it's very expensive*.' Householder without renewables

- '*the cost. ..No one has that kind of money lying around*.' Householder without renewables

- *'…the biggest barrier of all is the cost….it doesn't matter whether you've got the information or not whether you understand it or not, the additional cost of putting a new system in is more and the paybacks are a lot longer*.' Householder without renewables

But they also cited other significant barriers. Heat pumps in particular were seen as being potentially intrusive or disruptive:

- '*It's just it's not a suitable replacement, really, because it's just too much work*.' Householder without renewables

- '*I think there's issues around space, around kind of retrofitting your house to accommodate that technology…*' Householder without renewables

- '*I would think that having a heat pump is just the beginning, then there's your water tank, then there is the possibility of having to change your radiators and your pipes. Where does the heat pump go outside the house? How much noise does it make?* Householder without renewables

- '*Like if you change to a renewable heating system about the having to take floors up and everything like that… it just doesn't appeal to me at all… the bit I have heard makes me think it's going to be really expensive, really invasive and actually, um, for me at the minute, I would say maybe renewable heating system might not be an option,*' Householder without renewables

- '*The inconvenience, the mess. Are you going have to rip things out of my house and make more things that are going to have to have done, so yes, just uncertainty and not actually knowing where to even start with that'* Householder without renewables

Very few of the consumers in this sample were deterred by the 'look' of renewable options. Only 3% cited this as a problem. Just one focus group participant who had installed solar PV mentioned disliking the look of the panels.

In contrast, worries about the reliability and even the safety of these generally unfamiliar renewable heating options are significant, though again there were stark differences between the age groups in the survey on these issues:

- while more than half of those aged over 55 said they were *not* convinced the renewable options would work for their home, *nobody* in the age group 18 to 34 agreed that was a problem; but

- those aged between 18 and 34 were much more likely to think safety was an issue.

In the focus groups, being an early adopter of an unfamiliar technology was seeing as being just too risky just yet:

- *'… a lot of people [are] waiting to see what happens to those first adopters. Whether it works, whether it's affordable, whether it's sustainable, whether it makes an impact on their bills etc….'* Householder without renewables

- *'…making sure ..we're not going to have to change it again in 10 years. You know, you want something that really is going to be the best option, but a long term investment as well.'* Householder without renewables

- *'..it's not something simple, like changing your front door, it's completely changing, you know, wanting something reliable as well from that. It's a big decision. That would be it for me; making sure that you've made the right decision*.' Householder without renewables

- '*I wouldn't want to be the first in*' Householder without renewables

- *`..it's probably in its infancy. I may be wrong, but I would imagine it's more expensive and cumbersome now than it will be when it starts getting a critical mass and high numbers. So, while I do care about the environment, I'm not in a rush to inconvenience myself and pay more money until it becomes established..'* Householder without renewables

- *' ..how do we know that we can upgrade these renewable energy sources? How do we know that the product can develop as things change? [is it like smartphone updates or more complicated?] [I need to know] if I do something new to my home, [do] I have the ability to sort of update that as well with the times*..?' Householder without renewables

A further concern was around whether government incentives or policy could be relied upon. Some participants were aware that certain incentives had been reduced or removed, but not necessarily that they were not withdrawn from those already receiving FiT payments. Mistrust of consistency of **policy** was also expressed:

- '*I think one of the big challenges emerging, though, is the consistency of government policy. …the government cut that [PV] subsidy…. similarly, back in the day with diesel cars, the government told us that these would be the answer to all these things and lo and behold, it's part of the problem… I don't think, especially with this government, can't trust one word that they say. But that might be just me being quite cynical***.**' Householder without renewables

These findings suggests that a strategy that only focusses on bringing down the cost of the systems will not address the nearly a third of those put off by the disruption nor those who

are just fearful of making the leap without reassurances that they are making the right decision.

The overall message: de-risk renewables

Consumers are unsurprisingly guarded about spending large sums on what are perceived as new or at least unfamiliar technologies to provide an essential service to their homes. Combine this with the UK's home improvement sector reputational problems relating to double glazing, cavity wall insulation and, more recently, the Green Deal, and consumers understandably place considerable value on having the market for home renewables **'de-risked'.** The various measures by which this might come about are explained in detail under ***'Objective 5 - Learn the kinds of protections consumers want and expect to be in place, when investing in low carbon technologies'***, below.

Media stories about unsuccessful installations and negative outcomes may also create a significant barrier to uptake when spread by word of mouth. Interestingly, in the focus groups, adopters mentioned '*horror stories'*, or '*I always considered the green market a cowboy market*' or '*You see them appear and then go under'* and '*it seems a very unregulated market*'. Yet most had still gone ahead and were generally very satisfied, as the next section shows.

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Objective 4: Identify the renewable installation outcomes and use that information to describe experience and risk in the consumer journey.

The research explored the experience across the consumer journey of those in the survey and the focus groups who had renewable energy systems at home.

1. Satisfaction, outcome and experience

Key message: overall satisfaction with performance is very high but consumers identify problems at various stages through the whole consumer journey. Some consumers have had to take some form of action to secure a satisfactory outcome, a significant minority remain dissatisfied, and a small minority regret their installations. Those with a heat pump are more likely to report problems with their installation and dissatisfaction.

Key results

- *Nearly 90% of those with any renewables in the survey are satisfied with the system performance (41% are very satisfied and 47% fairly satisfied), with just under 1 in 10 (9%) dissatisfied.*

- *A significant minority of consumers are not satisfied with the performance and/or regret the installation. A larger minority report problems with maintenance and on-going support.*

- *The level of satisfaction varies by the technology installed, with dissatisfaction rising to nearly 1 in 5 of those with a heat pump installation (over 18% not satisfied).*

- *More than 1 in 10 (11%) have had to make a complaint*

- *Nearly 1 in 8 (12%) have had additional, or replacement equipment installed to make the system work properly.*

- *70% say the system has performed in line with expectations or better and more than half say they have saved more money on energy bills than expected. On the other hand, 47% said they have saved less money on energy bills than expected and 45% said their system has generated less energy than expected.*

- *Around 1 in 6 (17%) of respondents agreed with the statement: 'On-going support for my installation has been difficult because my installer has ceased trading.'*

- *Slightly more than 10% said they had made a claim on the insurance that covers the workmanship warranty (16% of those with heat pumps). The respondents also indicated that the vast majority of those insurance claims were successful.*

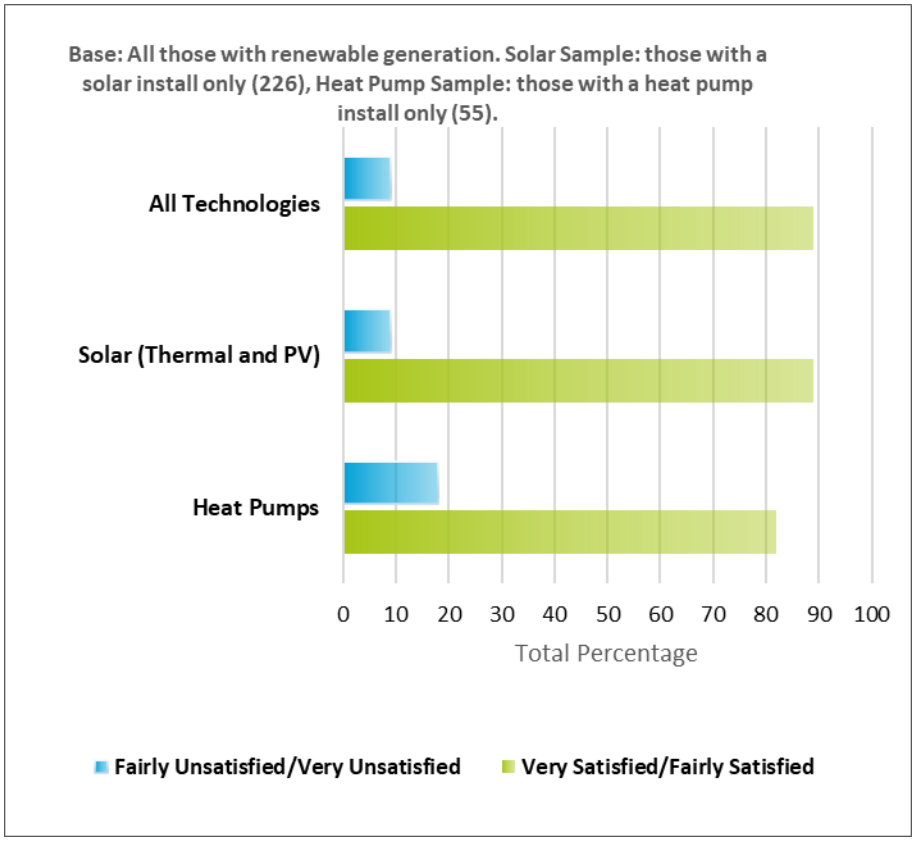
- *Those with heat pumps tend to be more negative with half of those saying their installations had not produced as much energy as expected (less than a third of*

those with a solar installation agreed); 18% said they have had to install further equipment or replacement equipment to make the system work properly and 15% have had to make a claim on the manufacturer's warranty and/or the workmanship warranty.

The vast majority of those who have installed renewable generation are satisfied with the performance of the system. Overall, just under 90% are satisfied with the system performance (41% are very satisfied and 47% fairly satisfied), while 9% are not satisfied. In the focus groups of those with renewables, too, the level of satisfaction was high; all of those with solar PV were very satisfied with their systems, with the performance, the savings on bills and, for those who had had them for several years, with the payback.

But the results vary by the technology installed, as Chart 13 shows: 82% of respondents who have a heat pump (and no other renewable installation) are satisfied but 18% are not satisfied. In the focus groups, only two participants had an air source heat pump, one of whom had only recently installed the ASHP and was very happy with its performance thus far while the other, who had moved into a home with an ASHP already installed, was very dissatisfied. She found it hard to heat her home and thought the system was expensive to run and was not as responsive as gas.

Chart 13: Q29. Thinking about your home renewable system installed in your home, how satisfied are you with the performance of your home renewable system?

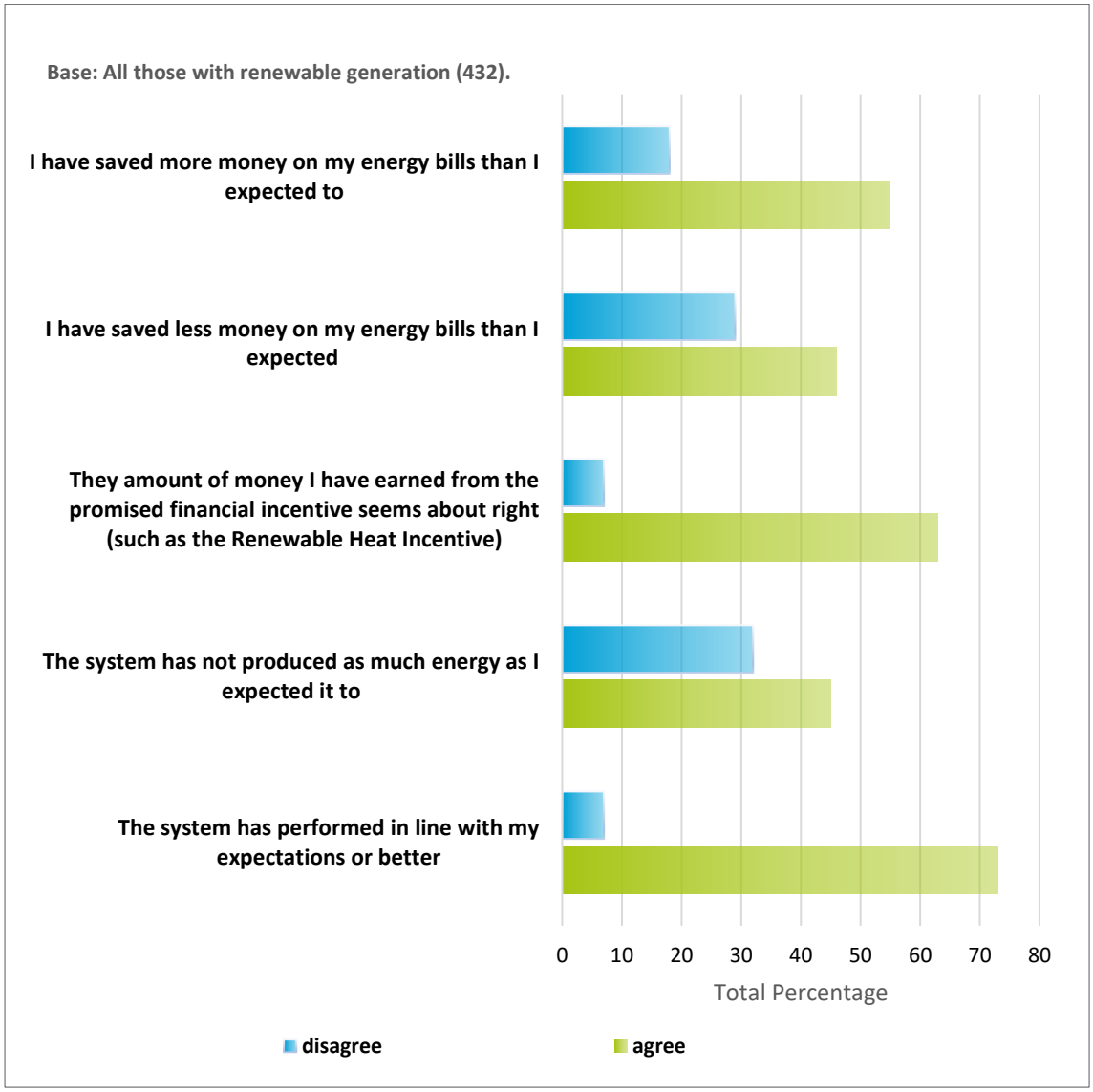


The results vary among some consumer groups. For example, the proportion satisfied with performance in the 18-34 age group drops to 83% (for those with any type of technology) with about one in every seven households in that group dissatisfied. The groups who are most dissatisfied are:

- tenants (30% who rent their homes are dissatisfied - although the total number in this sub-group is too small for us to draw firm conclusions);
- those living off the mains gas grid.

More detailed questions about installation performance show that opinions vary widely. For example: 70% say the system has performed in line with expectations or better and more than half say they have saved *more* money on energy bills than expected. On the other hand, 47% said they have saved *less* money on energy bills than expected and 45% said their system has generated less energy than expected.

Chart 14: Q.31 Thinking about your renewable system's technical performance i.e. its success in generating energy, to what extent do you agree or disagree with the following statements?

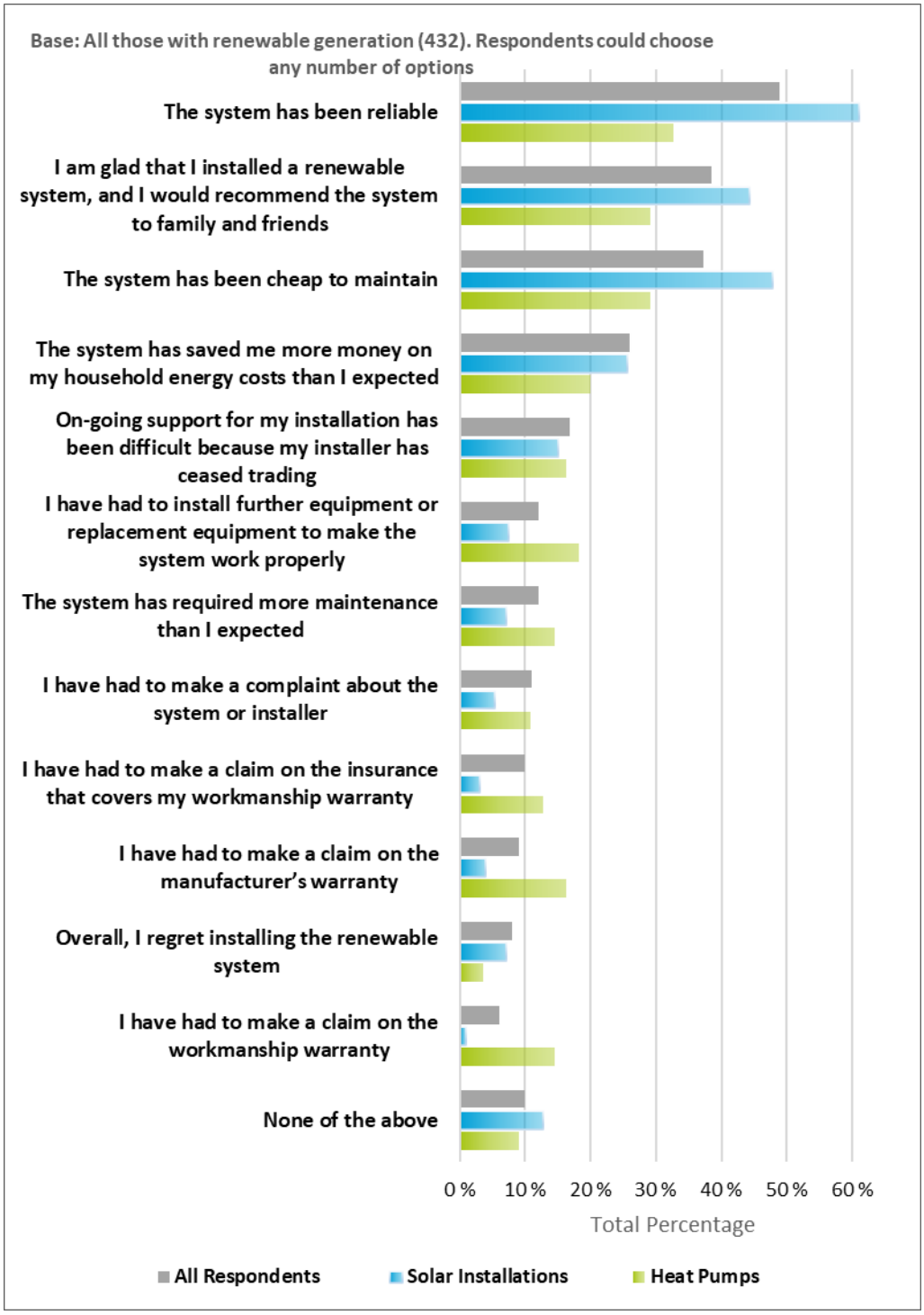


These results may indicate that, although a good majority of consumers are generally satisfied (with the system's performance), a significant proportion of consumers may also think that the generation and energy bill savings have fallen short of what they thought would be delivered. These results show that consumers are divided on some issues related to performance (and on cost savings and energy generation in particular) and more research is needed on consumer outcomes in relation to expectations.

The results do carry some firm messages, however. For example, those with heat pumps tend to be more negative with half of those saying their installations had not produced as much energy as expected, while less than a third of those with a solar installation said the same.

The consumers who already have renewable generation were also asked for their opinions about other aspects of the consumer journey. Those results are shown in Chart 15 (below).

Chart 15: Q39. Which of the follow statements reflect your experience? (Respondents could choose any number of options)



Consumers are most likely to agree with positive statements about their experience with renewable generation, in particular:

- 'the system has been reliable' (49%), and,
- 'I would recommend the system to family and friends' (38%): and
- 'the system has been cheap to maintain'.

However, these responses vary depending on the technology installed. For example, a significantly smaller proportion of those who have a heat pump (and no other renewable installation) agree with those statements.

Chart 15 (above), also shows that a significant proportion of consumers have had negative experiences. For example, 17% of respondents agreed with the statement: 'On-going support for my installation has been difficult because my installer has ceased trading.' And a range of responses reveal that a significant proportion of people experience problems related to reliability and maintenance and, overall, 11% said they have had to make a complaint about the system or the installer. Slightly more than 10% said they had made a claim on the insurance that covers the workmanship warranty (16% of those with heat pumps). The respondents also indicated that the vast majority of those insurance claims were successful.
Note: those findings on the Workmanship Warranty Insurance appear high and they may indicate that more research is needed to better understand the consumer impact of installers that go out of business.

Experience varies dramatically depending on the technology. Around 1 in 6 respondents with heat pumps (and no other renewable installation) said they have had to install further equipment or replacement equipment to make the system work properly and 15% (of those with heat pumps) said that system requires more maintenance than expected.

Overall, it appears that satisfaction with performance is high but for some the outcome may have fallen short of what was expected. Nor is satisfaction with performance necessarily evidence that the whole consumer journey was satisfactory, with a significant number of consumers having had to make a complaint or have additional, or replacement equipment installed to make the system work properly. And respondents are more likely to report problems if they have a renewable space heating technology installation rather than a solar installation.

2. Information Received

Key message: assuming the respondents can remember accurately, a majority of those who have renewable generation did not receive pre-and post-installation information that is compulsory under either the MCS Certification Standard or the relevant Consumer Code.

Key Results

- *Of those who have installed a renewables system only 45% said they had received a written quotation, only 42% had received a written contract and likewise 42% had received a written estimate of how much energy the system will generate.*

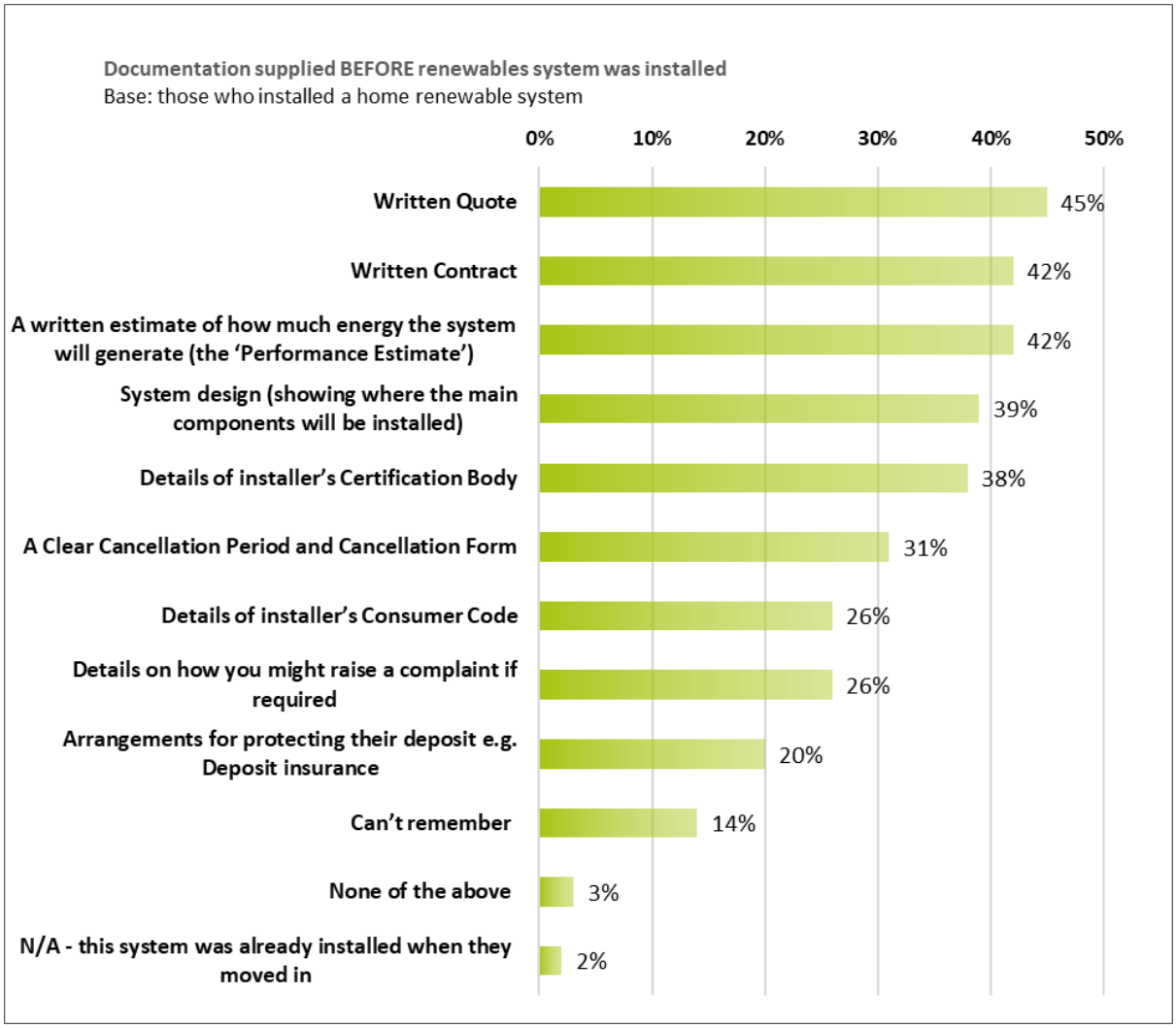
- *Only 31% had received information about their cancellation period and a cancellation form, only 26 % had received details of their installer's Consumer Code and 26% said they had been given information on how to raise complaint.*

- *Of those who installed a renewables system, less than half (46%) received manufacturers' warranties, only two in five (38%) receive instructions on how to use their system, information on maintenance or a workmanship warranty and just 1 in 3 (35%) received an MCS Certificate.*

To obtain more detailed feedback on consumers' actual experience, we also asked those who have renewable generation what documentation they received from installers both before the installation took place and after their system was installed. For example, information such as the formal quote, the MCS-mandated performance estimate and other technical documents.

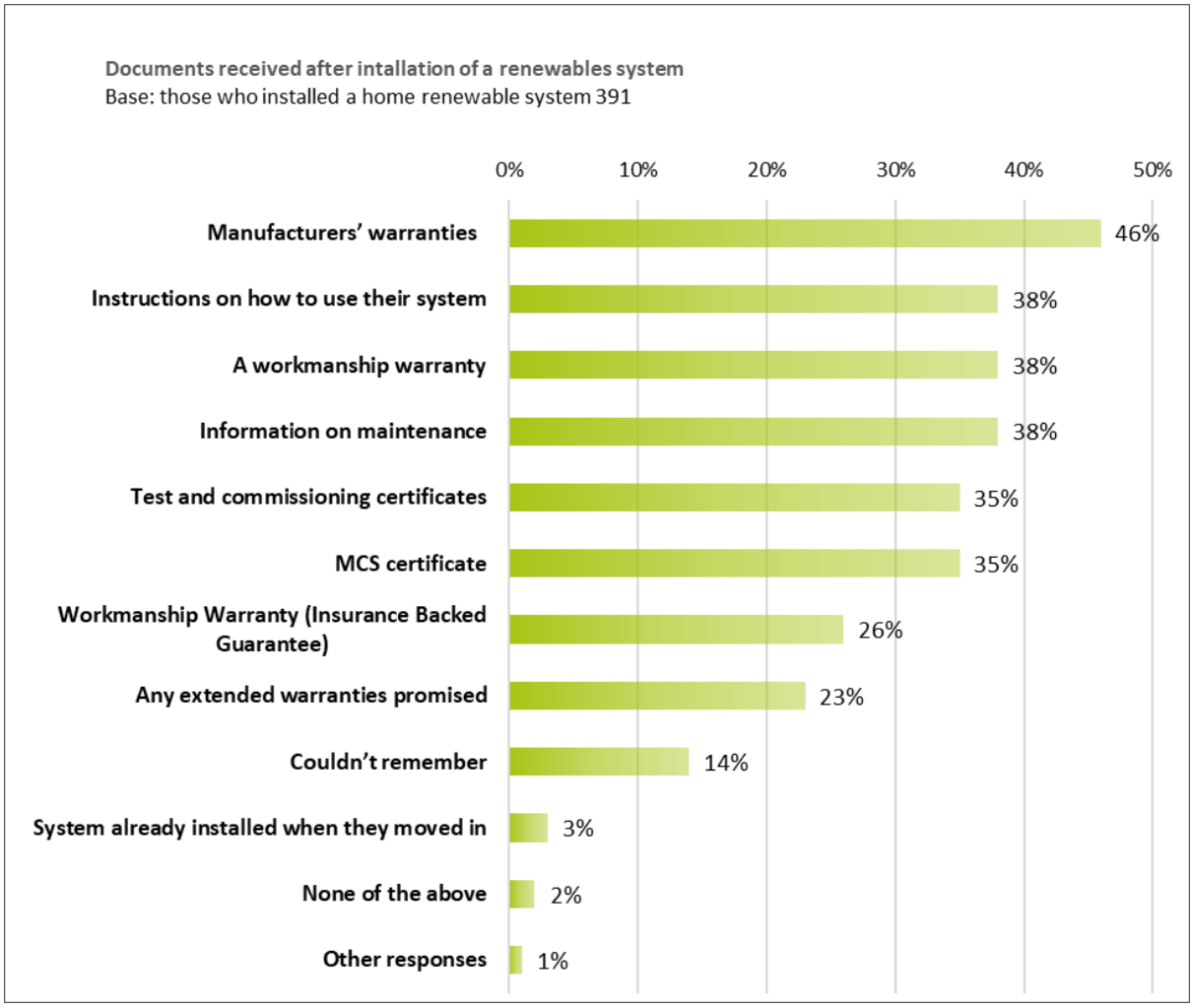
As Chart 16 shows, the majority had not received key documents ahead of the installation. (Q37) Less than half had received a written quotation (45%), a written contract (42%) or a written estimate of how much energy the system will generate (also 42%). Even fewer had received information about their cancellation period and a cancellation form (31%), details of their installers Consumer Code (26%) or information on how to raise complaint (also 26%).

Chart 16: Q37: When your renewable system was installed, which of the following were you provided with before your system was installed? (Respondents could select all those that applied)



Similarly, the majority of consumers said they did not receive key documents after the installation (Q38). Of those who installed a renewables system, less than half received manufacturers' warranties, just two in five (38%) received instructions on how to use their system, information on maintenance or a workmanship warranty and only 1 in 3 (35%) received an MCS Certificate.

Chart 17: Q38 Which of the following were you given after the installation of your system? (Respondents could select all those that applied)



Respondents were able to say what "other" information had been provided. There was little consistency and responses included, for example, "cowboys" and at the other extreme "contact details of local installer for on-going support".

3. Hurdles overcome

In the focus groups, we explored whether those with renewables had faced hurdles in the process of getting an installation. While most said it went smoothly, there were still a number of issues mentioned, from finding an installer to problems around information to delays in the surrounding processes:

- *'Finding the right installer'.* Householder with renewables
- *' [getting an installer was tricky]. 'A lot of installers were not keen as the house is not standard, access for the cabling is difficult.'* Householder with renewables
- *'I chatted with a gas safe engineer a while ago, and he just said, there's just a massive shortfall in plumbers who have adequately equipped to instal all of this stuff.*

I mean, they will come on stream as the government incentives stimulate that market. But he said he had transitioned from the military to be a trainer for plumbers, and he said the skill set's just not there. A lot of the older plumbers just won't want to retrain to do this kind of stuff.' Householder with renewables

- *'The council wasn't clear on whether planning permission was needed, there was a back and forth about and they wanted to charge to put anything in formal writing.'* Householder with renewables
- *'The electricity companies knew nothing about PV.'* Householder with renewables
- *'The DNO application seemed to take ages…'* Householder with renewables
- *'Getting the EPC took a while.'* Householder with renewables
- *'Getting a new EPC done.'* Householder with renewables
- *'[I had] problems with a smart meter [SMETS 1] installed in my house that has rent-a-roof panels: the PV stopped feeding into the house. It was a battle to get it sorted.'* Householder with renewables
- *'Friends with listed houses found it difficult. It should be acceptable for B and C listed homes.'* Householder with renewables

4. The voice of experience

In the survey we asked those with home renewables based on their experience, what advice they would offer to someone considering renewables. Some simply advised: 'do research' 'find a good installer' and 'get independent or expert advice' while others were more blunt 'just do it' at one extreme to 'it's all a con' at the other.

Thinking about your overall experience, what's the single most important piece of advice would you give to someone looking to invest in a renewable energy system for their home? (Q42)

- 10% of responses mentioned "research", around 5% used the word "check" in relation to installers, the benefits of the system or different sources of information and 5% spoke about the importance of finding a reliable, trusted or reputable installer. 3% said to seek independent or expert advice.
- 5% mentioned the planet, future generations or the environment.
- 3.5% said it saves you money.
- 3% said "just do it" but around 2% said "don't bother, "it's all a con" or "don't believe the hype"

Objective 5: Learn the kinds of protections consumers want and expect to be in place, when investing in low carbon technologies.

The research sought to elicit the views of consumers on consumer protection, both the rules installers should be required to follow before the contract is agreed and other consumer protections they regard as important. They were also asked what role they felt MCS should play in delivering those protections.

1. Protections

Key message: Overwhelmingly, consumers - and particularly those who already have home renewables - value consumer protection measures that 'de-risk' the consumer journey. There is strong support for rules that installers must follow before installation, product standards, long warranties with insurance backing, and an independent body with teeth to deal with unresolved complaints and get things put right. Accurate, impartial, comprehensive information is also a must-have.

Key results

- *The consumer protection rules that installers should follow are supported by most consumers, but those that garnered most support were related to information. More than 80% of consumers supported installers having to provide:*
    - *a fair estimate of performance that gives a reasonable idea of what the system will generate; and*
    - *a clear contract that the law recognises as fair.*

- *When asked about a range of other consumer protection measures, consumers ranked the compulsory provision of an insurance backed warranty (that ensures the warranty remains valid even when the installer goes out of business) as most important, supported by more than 80% of all consumers and more than 90% of those who already have a renewable installation. Other measures that ranked near the top were long workmanship warranty and guarantee periods and easy access to an independent body that can deal with complaints.*

- *Significantly, there is strong support for new protections: more than 80% said they supported a 'fund of last resort' (that will put right problems that the installer can't or won't fix) and more than 80% supported compulsory performance guarantees.*

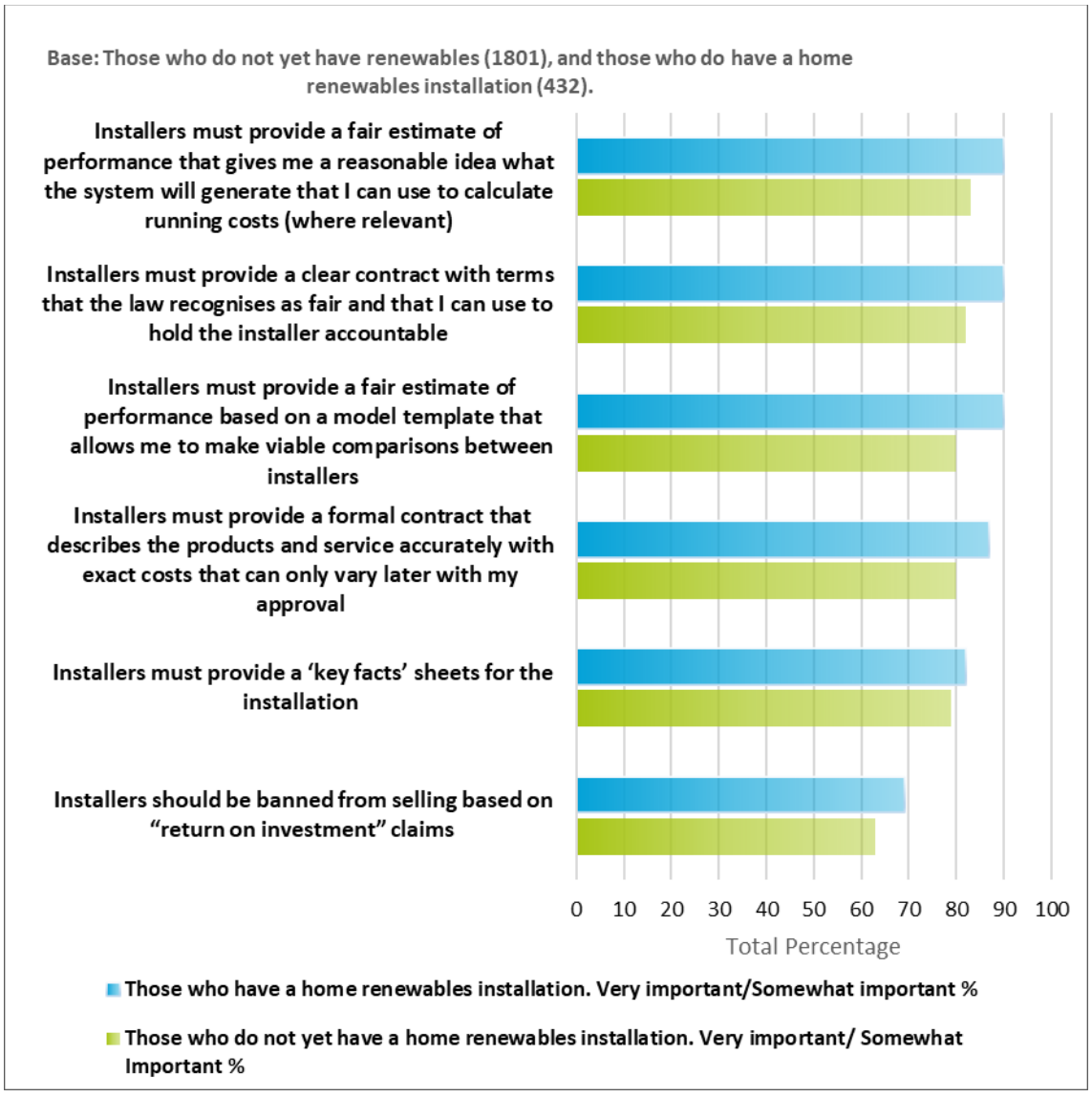
- *Those who have already installed renewable generation are more likely to support the full range of consumer protection measures suggested.*

In the survey, consumers were asked what consumer protection rules **installers** should be required to follow before the contract is agreed. As Chart 18 shows, all of the measures attracted majority backing, but support is strongest for measures on performance claims and provision of clear contract terms. Importantly, we also found that those who have

already gone through the process of buying and installing renewable generation are *more likely* to support these rules.

- *'Several companies came round to quote, some with utterly unrealistic claims of return on investment on a spreadsheet, had me saving more in electricity than we currently use…The company that gave sensible figures reassured me.'* Householder with renewables

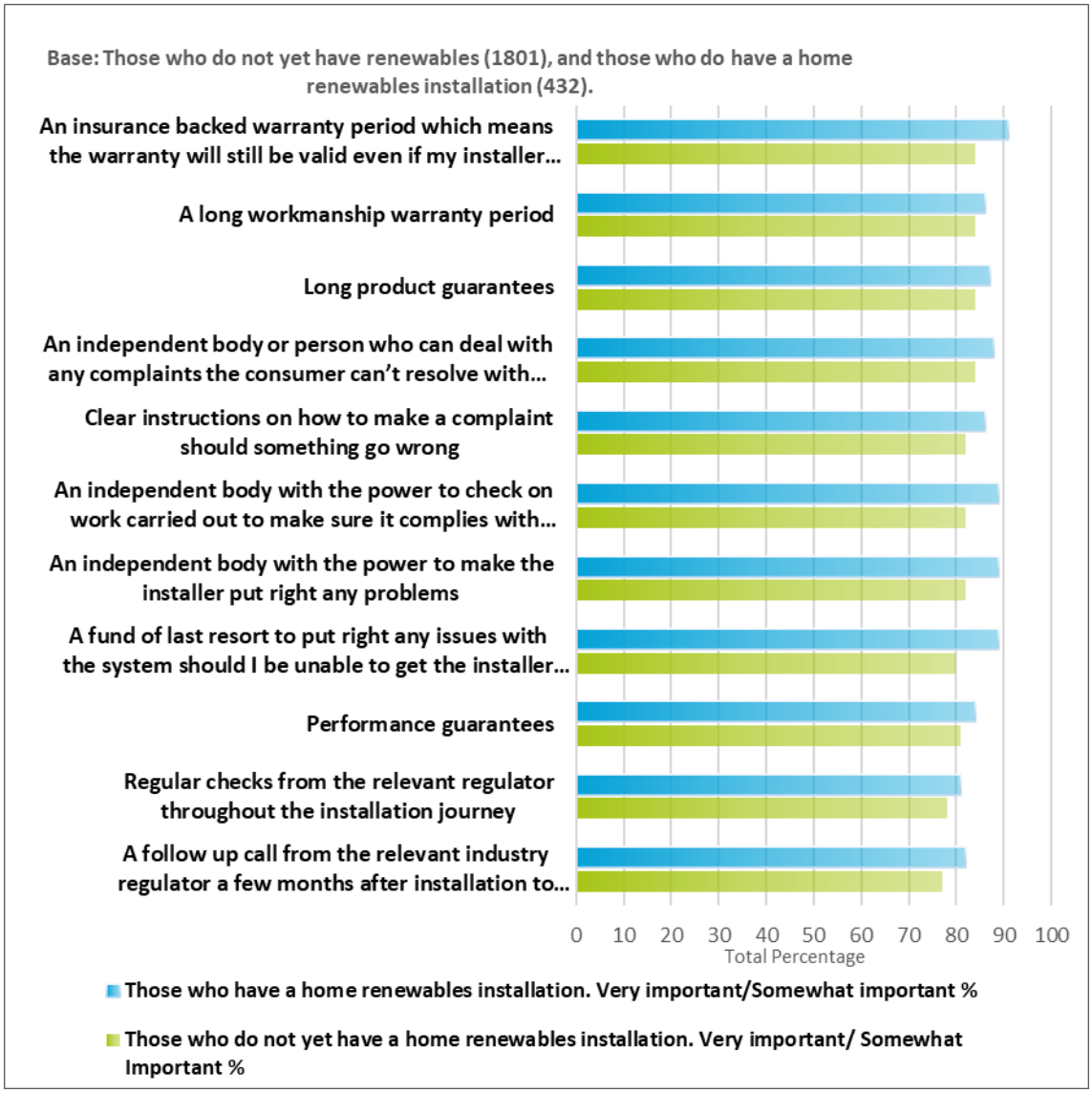
Chart 18: Q44. Thinking about the domestic market for home renewables, how important are the following consumer protection rules that installers should be required to follow before the contract is agreed?



The only rule that did not garner more than 70% of support was a rule that is not currently in force: that installers should be banned from selling based on 'return on investment' claims. That rule received 63% support among those who do not yet have renewables, and 69% support among those who have a renewable system.

The survey also asked consumers for their reaction to a range of protection measures that could ensure consumers' 'peace of mind'. The results are summarised in Chart 19 [Q45]

Chart 19: Q45.Thinking about the domestic market for home renewables, how important would these other consumer protection rules be for your own peace of mind?



There is strong support for all these measures but most support for an insurance-backed warranty period that ensures the warranty is still valid even if the installer goes out of business.

There is also support for new protections. More than 80% support:

- a 'fund of last resort' (that will put right problems that the installer can't or won't fix);
- performance guarantees; and
- regular checks and/or follow up calls from a relevant industry regulator.

Performance guarantees are currently optional but occasionally provided by installers voluntarily. This survey may indicate that some kind of minimum performance threshold would help boost consumer confidence.

Similar protections featured in the focus groups too:

- *'…an insurance backed warranty. …Any company can go and open businesses and they can tell you you've got a 20 year guarantee, but if that company goes into liquidation, you've got nothing. So that needs to be backed up*.' Householder without renewables

- *'…an insurance warranty and guarantee and government backed companies as well… reputable companies.. how long they've been in the renewable industry for and things like that*.' Householder without renewables

- *'…at least give me some sort of guarantee that, you know, in case it doesn't take off as expected, I've got some sort of fall back…'.*Householder without renewables

- *…some kind of guarantee or fall back, or something sort of centrally based that if actually we've all made this effort and pay lots of money and then it turns out that government did ban gas boilers, and now actually would really quite like to ban something else instead, that we're not all ripping out systems, for the second time in 10 years.'* Householder without renewables.

- *'…if I was spending X, thousands of pounds to put a heat pump in place. I would want to be able to have a warranty on that that was a really good one, equivalent of a boiler. Because, as people have said before, if something goes wrong, you don't want the cost of doing it. And it won't be covered on house insurance because normal central heating isn't covered on your house insurance. It's additional cost you have to pay to cover yourself.* Householder without renewables

- *…and [the warranties have] got to be backed as well because the thing a lot of companies, if you look to solar panels, double glazing.. something's gone wrong in the warranty year and that company's going into liquidation.'* Householder without renewables

Again, those who have already gone through the process of buying and installing renewable generation are *more* likely to support these other consumer protection measures and this may be because a proportion have used consumer protection rules that are in place to secure a better outcome. For example, and as explained under ***Objective 4*** (above), a substantial minority of consumers have made a complaint or have had additional equipment installed to make their installation work properly. Just over 10% have had to make a claim on the workmanship warranty insurance.

- '*The warranty on panels and knowing the workmanship warranty was insured to step in if the company didn't exist any more [reassured me]*'. Householder with renewables

- *'…companies [have been] going bust or ripping people off so I chose a long-standing local firm others trusted. I would have liked a government-backed or trusted certificate for the companies because otherwise it's a bit of a leap of faith.'* Householder with renewables

A very clear message from the focus groups whose participants did not have renewables was that they would need support, in particular more and better advice, to make that leap of faith.

- *'…renewable energies are all based on much more variable factors than a normal gas boiler, it's all estimates, what you're actually going to save or what it's going to cost you. It is a very big unknown'*. Householder without renewables

- '*I think you want to be supported better to do it*.' Householder without renewables

- *……[Landlords] probably need help from the government to transition such a big building into renewables*. Flat renter, no renewables.

- ***'…****it would be good just have maybe a central source of information where you get to learn about some of the benefits and the cons of some of these new techs*.' Householder without renewables

- *'…really credible information that [I} can rely on to make a good decision*.' Householder without renewables

- *'..having a demo house within certain communities so you can go see that actually works and how it saved you money, and how it's reducing my carbon offset and all these sort of things.'* Householder without renewables

- *'..It's feeling like it's all down towards those individuals to work our way through a bit of a minefield here to get to what we think is the right answer without any help from the council or the government*. *If there was some factual information about what it* ***should*** *cost (plus or minus 10 or 20%). But if something went badly wrong and it's going to cost some one another £10,000 or something for taking a bit of a punt on something that is important…if there was a guarantee where you know you won't be stiffed for the entire £10,000 bill… The thing that I'd be nervous about is where something catastrophic happens and it possibly 10,000 quid that wasn't expected to put it right.* Householder without renewables

2. The role of MCS

Key message: consumers are most supportive of MCS's roles in implementing minimum standards, *enforcing* those standards and in providing training and guidance to installers. Overall, consumers give strong support to all of MCS's various functions and potential roles, and those who *already* have home renewable generation gave particularly strong support.

Key results

- *Among all those surveyed, MCS's role in implementing strict minimum standards and the provision of training and guidance to installers were seen as its most important functions (74% said those roles were important) and 73% said enforcing standards was important.*

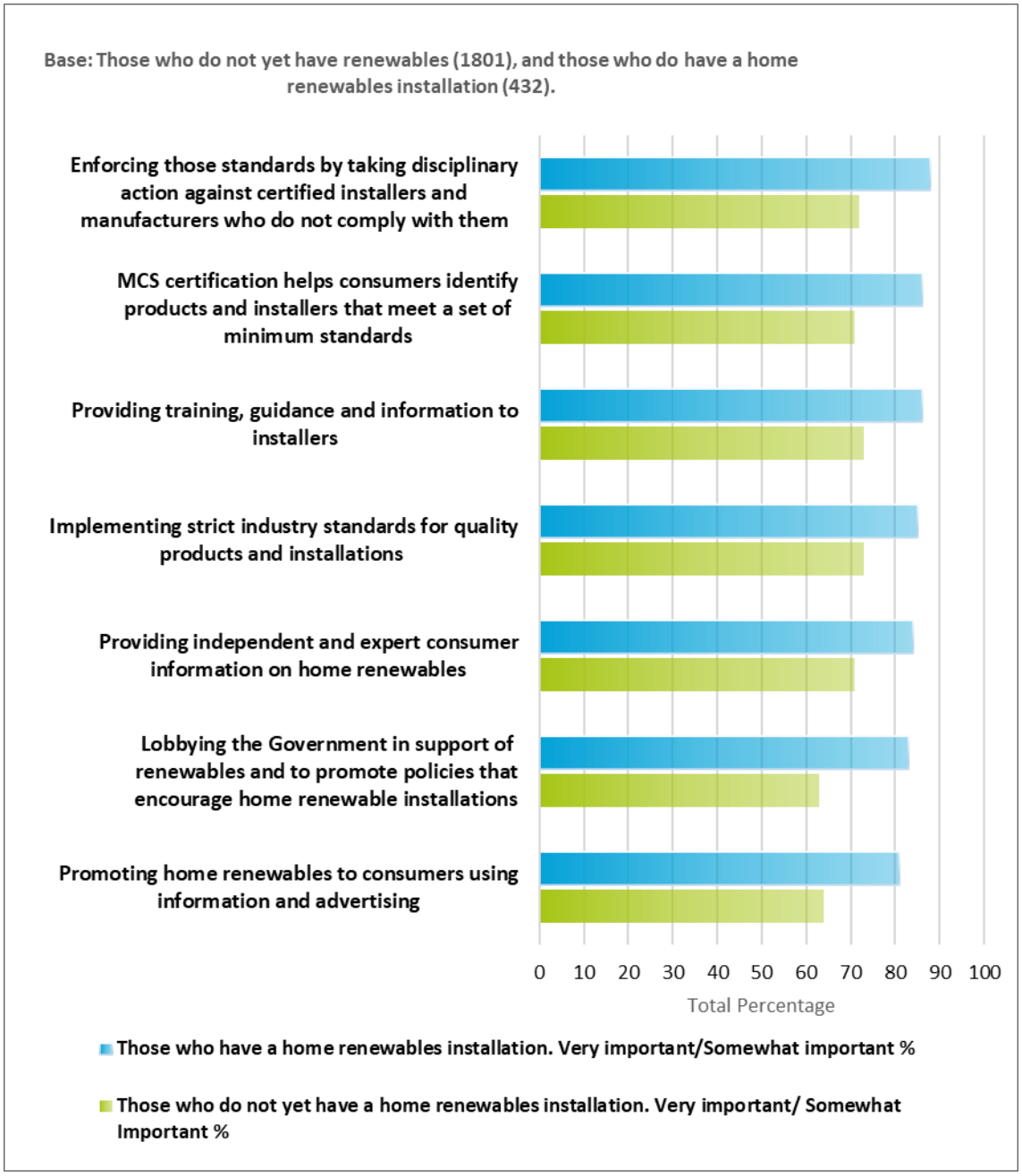
- *Among those who already have renewable generation, 88% said enforcing standards was important.*

- *More than 80% of those with renewables supported all of the actual and potential MCS functions.*

The support for strong consumer protection measures is mirrored in the results regarding MCS: the independent body that certifies both the installers and the products for home renewable generation. Among all those surveyed, there is most support for its role in implementing minimum standards and in *enforcing* those standards by taking disciplinary action against certified installers and manufacturers that do not comply. MCS's role in providing training and guidance to installers also ranks near the top.

As Chart 20 shows, those who have already gone through the process of buying and installing renewable generation were more likely to support the various MCS roles. And, although all the possible MCS functions attracted support, there was least support for the MCS in *promoting* home renewables directly to consumers and in lobbying the Government in support of home renewables.

Chart 20: Q43. MCS is the organisation that works with industry to certify renewable technology products and installers. MCS defines, maintains and improves quality – by certifying products and installers so consumers have confidence in the low-carbon technology they invest in. Thinking about MCS, in your opinion, how important are its following functions?



And from the focus groups, there were similar calls:

- *'…you'd expect there to be some sort of like, governing body or something like that, which may be set standards for the industry. … I look for something like that, which would, you know, ideally be filtered down by somebody like [Money Saving Expert]…You know, whatever the common industry standard is I'm not an expert. But*

if I was making a big decision like that, I'd certainly want it to have some sort of robust backing.' Householder without renewables

- *'You have to give them [ie the independent overseer] teeth, otherwise they're powerless'.* Householder without renewables

- *…[I would get reassurance] from the independent information that they would have a list of trusted people you could go to…'*Householder without renewables

- *..[I want to know] that its proved and tested. That it's proved that will do the job and it's tested…I don't want to jump when something comes along and be the first*.' Householder without renewables

- *'..one stop shop where you can go, and if you've got a problem, you can talk to them and they can give you advice on it.' '*Householder without renewables

- '*some source of where I can get help or assistance [if something goes wrong]… whether it's a hotline or a website where they can get in touch and get some form of assistance with it*, Householder without renewables

- *…[an] Ombudsman service would help to escalate… claims where the company doesn't want to do it*. Householder without renewables

Again, a clear message from the focus groups is that the *independence* of any body fulfilling these functions is key. For example, there was some mistrust of any inspections being done by companies:

- '*If they are trained from the companies that are installing them, they're going to be biased….There's only going to be a certain amount of companies are going to be able to do this thing to start off with so how independent are they going to be?*' Householder without renewables

- *'. if there's a scientific body with a lot of knowledge behind them I would 100% trust them.'* Householder without renewables

- *'…to me it would have to be truly independent, and whoever is picking holes in [the work during an inspection] it has nothing to financially gain from doing so if you see what I mean… who would be doing the rectification works if there was something wrong? Is it the person that's checking it? Because are they then just trying to find problems, to get paid themselves?* Householder without renewables

So, while the clear message is that consumers are supportive of an effective, independent body overseeing standards and assisting with complaints and getting things put right, the fact is that consumers have little or no awareness that there is already a body that fulfils most of what they wish for.

Appendix 1: detailed figures

People with Renewable Technologies	All respondents
Government Incentives 66% said they were aware of the Renewable Heat Incentive (RHI) 55% said that they had heard of the Smart Export Guarantee 58% said they had heard of the Green Bonus Scheme, which doesn't exist (11% claimed they knew a lot about it)	**Government Incentives** 35% were aware of the Renewable Heat Incentive, 21% were aware of the Smart Export Guarantee and 33% claimed they were aware of the Green Bonus Scheme (which doesn't exist)
Awareness of financial incentives to help people with the cost of replacing fossil fuel boilers with Heat Pumps or biomass boilers? 89% said they were aware of it 53% said they were knowledgeable about it 11% said they'd never heard of it.	**Awareness of financial incentives to help people with the cost of replacing fossil fuel boilers with Heat Pumps or biomass boilers?** 74% said they were aware of it 30% said they were knowledgeable 26% said they'd never heard of it
Sources of Information when first looking into having a renewable technology installation 79% General internet research 77% An organisation that certifies renewable technology installers 76% A local renewable energy installer 69% A consumer organisation such as Which?, Energy Saving Trust or Money Saving Expert 63 % Their energy supplier 63% Simple Energy Advice - a government-provided information website (England and Wales) 61% Their electrician or plumber 58% Friends family or colleagues 57% Current boiler installer boiler or service engineer 56% An independent organisation (such as their local council) 54% a builder 49% Home Energy Scotland - a government-provided information website (68% for respondents in Scotland)	**Sources of Information if they were to consider a renewable technology installation** 75% General internet research 74% A consumer organisation such as Which?, Energy Saving Trust, or Money Saving Expert 72% An organisation that certifies renewable technology installers 67% 'Simple Energy Advice' - A government-provided information website (England and Wales) 67% A local renewable energy installer 63% Current boiler installer or current boiler service engineer 58% Friends, family or colleagues 56% My energy supplier 55%An independent organisation (such as your local council) 53% Their electrician or plumber 38% A builder Home Energy Scotland - A government-provided information website 37%
Sources of information on installation options for a renewable energy system	**How likely are you to use the following sources of information for advice when you are considering a renewable technology installation?**

72% An accurate online calculator used to estimate how much energy the installation will generate and/or the running costs 72% A home visit by an independent and expert organisation that assessed whether the technology was suitable for their home and circumstances 71% Detailed and independent expert written advice provided on paper and online that can be studied 62% Suggested questions put to their installer (provided by an independent consumer or certification body) 60% Installer and manufacturer advertising 56% Online webinars provided by neutral expert organisations that explained the technology and process and that allowed you to ask questions	90% An accurate online calculator you can use to give you a realistic estimate of how much energy the installation will generate and/or the running costs 88% A home visit by an independent and expert organisation to assess whether a specific technology is suitable for your home and circumstances 87% Suggested questions you can ask your installer (provided by an independent consumer or certification body) 81% Detailed and independent expert written advice provided on paper and online that you can study 72% A helpdesk you can call for advice provided by an independent and expert organisation 69% Installer and manufacturer advertising 67% Online webinars provided by independent expert organisations that explain the technology and process and allow you to ask questions 66% An online consumer forum