

Heating our homes in a Net Zero Future: Understanding what matters to consumers

Project Appendices for

nationalgrid

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Appendix A: How the research was conducted

A.1 Approach and methodology

The research was designed to meet the project objectives, and hear the views of consumers across a broad range of demographics. At the outset of the project, three topics were agreed to be explored in the research:

- **Background:** consumer understanding of the UK's role in climate change and net zero targets, the extent to which the need to decarbonise is understood and supported, the role of households in meeting targets, issues around decarbonisation of heat that will impact on, and concern consumers; and future communication and engagement channels, including who should lead on future engagement.
- **Options:** consumer views on the options for decarbonisation of heat, including views on the pros and cons, and initial views on the acceptability of the options.
- **Options for funding decarbonisation of heat:** consumer views on the acceptability of the payment options for decarbonisation of heat.

The research was implemented via qualitative consumer research across England and Scotland. The locations were chosen in order to gather insights from as broad a range of consumers as possible, and included consumers with a range of ages, incomes and occupations; vulnerable consumers and carers; those that rent and own their homes including social housing; and those on and off the gas network.

Qualitative research tends to be in the form of semi-structured discussions, which provides the flexibility to probe **how** consumers feel, and **why** they feel the way they do. It provides a rich dataset of in-depth insights on topics that are currently not well understood. The deliberate approach meant that the discussion, debate and trade-offs for consumers could be better understood and deliver a deeper level of insight on how consumers perceive and assess the options available today to lower emissions from heating, and what would matter most in how these options are delivered.

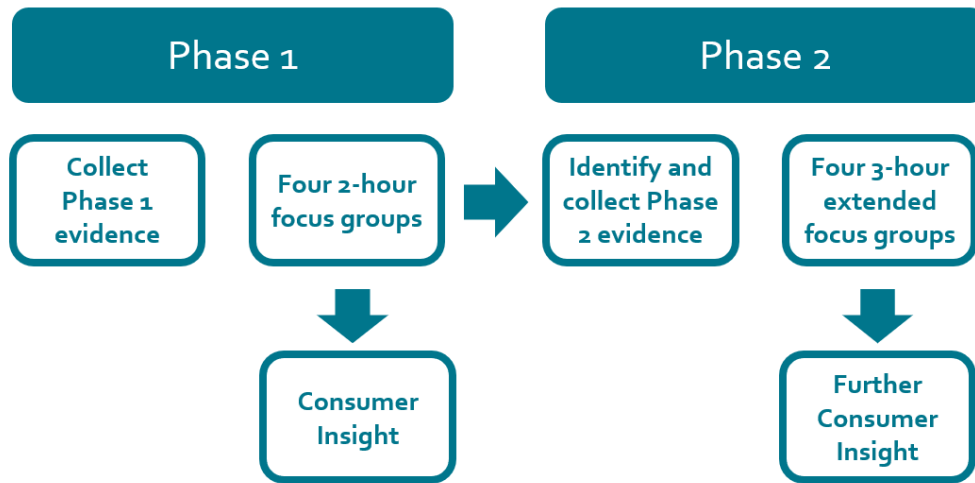
A.2 Research Phases

The research was conducted in two phases.

Phase 1 consisted of four 2-hour focus groups. Phase 1 focused on decarbonisation targets and current initiatives. Consumers were given information on the policy background to help them engage in discussions covering government targets around decarbonisation and heating, including why heating is an important part of the Government strategy (i.e. how much does it contribute to energy used and carbon emissions). Consumers were asked their initial and uninformed views around decarbonisation and the role of heating in that.

Phase 2 consisted of four 3-hour extended focus groups. Phase 2 focused on reviewing the options in more detail, including the ability of each option to meet the 2050 targets, levels of disruption and reliability, and their overall reliability. Consumers were also asked their views on the pace and funding for the options, including acceptability of the payment mechanisms and which organisations are trusted to deliver the options.

Figure A.1: Research phases



Consumers were given pre-reading materials prior to each session – to give background on National Grid and the energy industry and its stakeholders, to ensure the groups could focus on the main content in the sessions.

All the groups were organised and run by ICS moderators – who are members of the Market Research Society, and thereby adhere to and follow industry standards. The moderators ensure discussions are independent and unbiased: both aspects are extremely important in ensuring a discussion where everyone's views are valid and there are no right or wrong answers.

Group topic guides and supporting materials were developed for each phase and finalised with input from National Grid and are included in Appendix B.

A.3 Selecting consumers and locations

There were eight groups in total, across four locations, engaging 60 participants.

The reasons for selecting three locations in England (Hull, Taunton and London), as well as Scotland was to ensure that we achieved a good spread of deprived (Hull and Dumfries) and more affluent (London and Taunton) areas; rural and greater likelihood of being off-grid areas (Taunton and Dumfries), and urban (London and Hull). London was also chosen to make it easier for Department of Business, Energy and Industrial Strategy (BEIS) representatives to observe. A more rural Scottish location (Dumfries) was selected on the basis of colder winters further north in the UK, potentially eliciting different responses to the other regions, including Wales.

Figure A.2: Research Locations



The research included consumers with a mix of ages and socio-economic groupings¹ to ensure a diverse range of opinions. Each group focused on a particular consumer segment. We also sought to recruit to each group vulnerable consumers; those that rent and own their household and in social housing; and those on and off the gas network.

Participants had a range of experiences and occupations, including those working in construction/house building, and transport, as well as carers, who all helped to bring important perspectives to the discussions. The sample also included a mix of those with standard and smart meters, and in the lower income groups, some people with pre-payment meters.

¹ The Office of National Statistics (ONS) divides households into different groupings, based on the occupation of the main income earner, known as SEGs. Given the correlation between occupation and income using these to segment customers in market research ensures a diverse range of households by income are considered. The groups are: A - Higher managerial, administrative, professional; B - Intermediate managerial, administrative, professional; C1 - Supervisory, clerical, junior managerial; C2 - Skilled manual workers; D - Semi-skilled and unskilled manual workers; E - Casual labourers and unemployed. For simplicity we have grouped these into descriptive categories for reporting, such as just about managing and financially vulnerable.

The National Grid Policy Team attended and contributed to each of the sessions. Viewing facilities were available at the London groups, which were also observed by BEIS.

A.4 Structure of the sessions

Whilst the objectives of the research were to understand views on heat, it was important to spend time on education to allow enough context for participants to then consider the actions they could take on heat. As such, the content focused on climate change, as well as decarbonisation of heat.

The structure of the focus groups is summarised below:

Figure A.3: Phase 1 structure

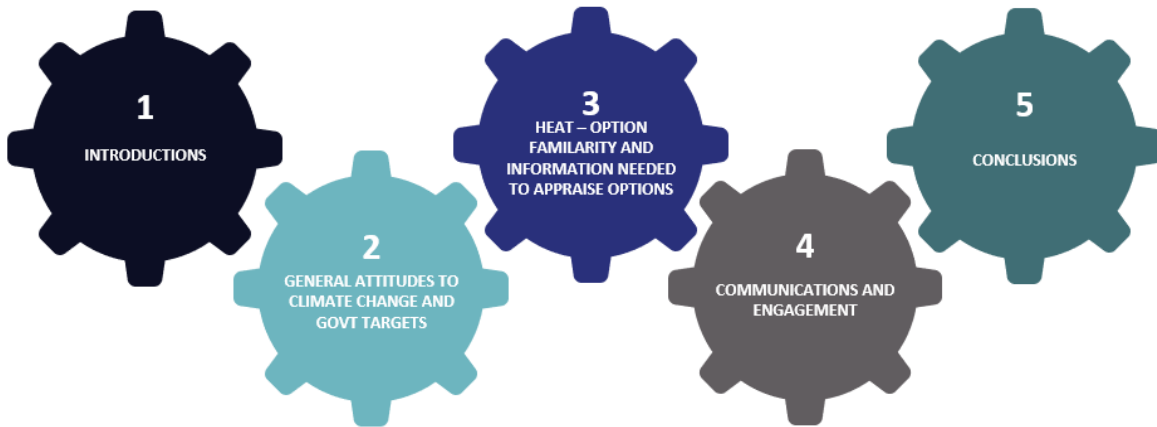
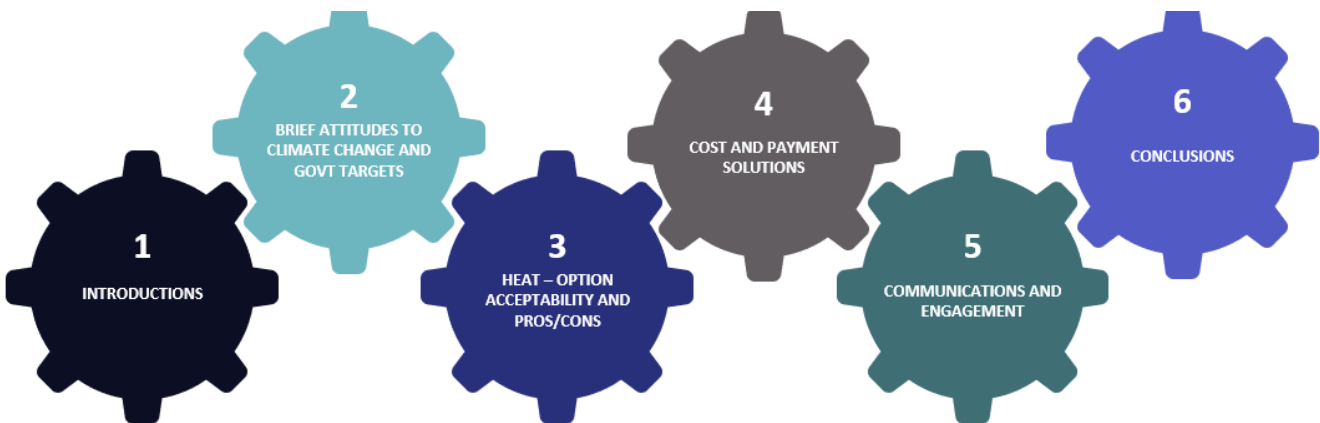


Figure A.4: Phase 2 structure



The explanatory files used in the groups are in Appendix D.

A.5 Information on options: Phase 1 v Phase 2

Phase 1 focused primarily on the decarbonisation of heat in general. Information on the options was based on a review of the existing government and stakeholder literature on decarbonisation of heat. Phase 1 was important in understanding the types of information needed to engage effectively in Phase 2.

When discussing the options in Phase 1, consumers asked many questions about each of the options – questions they considered to be essential to critique and assess them. As much of this additional evidence as possible was provided for Phase 2. The extra data covered:

- Ownership and potential service costs for the assets
- How the heating options would be co-ordinated, if at all
- Reliability – e.g. availability of resources, whether tried and tested, suitability for different types of housing and regions, ability to provide the right level of heating for the household.
- Impacts on other sectors – e.g. impact on farming, transport, etc
- More on disruption, e.g. levels of noise, any smells, household maintenance requirements, etc
- Impacts on consumer types, such as vulnerable consumers, renters, etc.

Phase 1 consumers were clear that additional information on the likely bill impacts was essential for consumers to fully judge and rank the options. Whilst information on upfront costs, and ongoing household costs (e.g. service costs) was sourced from available literature, information on network infrastructure costs (e.g. electricity and gas, transmission and distribution network costs) was not clear from the literature. This is to be expected given that the low carbon heat options adopted in the UK could result in different infrastructure requirements. National Grid could only provide views on its own potential costs and not of other network operators.

Therefore, whilst more information on the options provided in Phase 2 was in line with consumer views of the information needed, detailed costs that consumers consider essential to any option review and ranking were not available. In the absence of this information, Consumer views were elicited, but care needs to be taken in its interpretation and application. Care also needs to be taken as different technologies are at different stages of maturity and scale today, and are expected to evolve in the future.

A.6 Case studies

During the research, some consumers provided particularly personal insights into their circumstances and how the future of heat may affect them. Three consumers' experiences were collected and summarised. The individuals were identified with National Grid at the end of the sessions. The audio recorded sessions were reviewed to capture their full views, which are documented in the report.

Appendix B: What we heard

In this appendix we provide additional information on what we heard in the sessions. This builds on the information presented in the main body of the report.

B.1 Familiarity with the energy industry

Many people have heard of National Grid, but familiarity with its role in the energy industry prior to reviewing the reading literature was low. For example, some were unclear its scope of activities included transmission but excluded generation/production; or that they were responsible for gas as well as electricity transmission.

Generally, awareness of the energy industry and the role of National Grid was higher in the older and more affluent groups. Interestingly, of the four locations, consumers in Taunton were the most familiar, with a high knowledge of the energy industry across both groups, including Hinckley Point.

Despite uncertainties around how the industry is structured overall, consumers do have strong views about the energy industry. The most commonly cited view is that energy bills are high, and of concern to many.



"It's all about the money" - Financially struggling (DE), 18-45, Hull

Other concerns around the industry centred on the environment, i.e. the impact of burning fossil fuels, and the recognition that the energy industry has a role to play in protecting the environment. Consumers are aware of the growth of renewable technologies and their increasingly lower costs.



"Solar panels are everywhere you look now" – Just about managing (C1C2), 18-30, Taunton

Consumers indicated they want to see more renewable energy used. This was a particularly strong view of the more affluent consumers. There was discussion about local resistance to renewable energy, e.g. on the grounds that technologies such as wind turbines can be noisy and visually unattractive. But across the groups, consumers were very critical of this viewpoint.

"We should be investing in renewables rather than power stations" – Just about managing (C1C2), 18-30, Taunton



"Wind turbines are amazing" – Lower SEGs (C2DE), 46+, Taunton

A further theme mentioned was around energy security. This was mentioned in most of the groups, along with the view that UK oil and gas will start to run out.



"We don't want to rely on Russia" – More affluent (ABC1), 46+ Hull

Consumers agreed that the energy industry has already begun to change in response to challenges – albeit perhaps a bit slower than ideal.



"It is changing, and it needs to change" – Just about managing (C1C2), 18-30, Taunton

*"There is no coal now – any new coal plant now would be unacceptable" –
Just about managing (C1C2), 18-30, Taunton*

*"In an ideal world it would be done a lot faster, but it does not work like that" –
Just about managing (C1C2), 18-30, Taunton*

B.2 Familiarity with issue of climate change

Across the sessions, everyone thought it was an issue - albeit to varying degrees.



"Anyone that denies climate change is not looking at the facts" – Lower SEGs (C2DE), 46+, Taunton

"It is moving up the agenda and I am glad it has" – Lower SEGs (C2DE), 46+, Taunton

"If we don't cut climate emissions then we are going to end up in a world that is relatively uninhabitable for the number of people we have" – Just about managing (C1C2), 31-50, Dumfries

The minority view was that it is not as much of an issue as is made out, with some commenting that the climate changes naturally over time.



"I sometimes wonder if part of it is the evolution of the planet anyway" – More affluent (ABC1), 46+ Hull

"We were making wine in this country in the 19th century, then we had the time where they used to ice skate on the river Thames – so there are natural fluctuations." – Lower SEGs (C2DE), 46+, Taunton

But for the vast majority, the evidence is seen as overwhelming – most of which is from the news and social media. Across the groups, consumers cited the recent fires in Australia, as well as extreme / record breaking weather as evidence.



"Weather extremes are becoming more regular" – Just about managing (C1C2), 31-50, London

*"I will definitely be looking into installing air conditioning because of climate change" –
Just about managing (C1C2), 31-50, London*

"We didn't need air conditioning 30 years ago" – Just about managing (C1C2), 31-50, London

"The severe heat in our summers now seems to be more a regular thing and the need for air conditioning." – Just about managing (C1C2), 31-50, London

"The arctic is ridiculously warm – like 18°C" – Just about managing (C1C2), 31-50, Dumfries

The emphasis on climate change is relatively new for some consumers.



*"5-10 years ago we didn't even think about climate change" –
Just about managing (C1C2), 31-50, London*

*"It is something that we have not taken much notice of, but now it is becoming quite serious" –
More affluent (ABC1), 18-45, London*

*"We have known about this for 100 years – now we see the consequences" –
More affluent (ABC1), 18-45, London*

Sources of information on the energy industry are the news, social media, adverts and from children. Children are considered great influencers on this topic.



"My little girl says can we walk (to school)? Or go on the scooter or bike instead of going in the car?" - Financially struggling (DE), 18-45, Hull

Of all the groups, the first Hull group had the least awareness/least engagement in the subject. This financially vulnerable, younger group of consumers said they had little interaction with mainstream news; the only news they engaged with was that shared on social media platforms, for example, they were familiar with Swedish campaigner Greta Thunberg having seen her on social media platforms. This group considered other issues, such as bills and household finances, more pressing.

Some consumers have much awareness about the issue. But a large proportion of consumers – of all ages and socio-economic groups (SEG) – consider information on the energy industry and climate change to be mostly background noise, occasionally spilling into discussions with family and friends, but mostly having little impact on day to day lives.

There were some reservations about hearing more about climate change.



"We hear about climate change all the time – daily" – Lower SEGs (C2DE), 46+, Taunton

"It's too much" – Lower SEGs (C2DE), 46+, Taunton

And one commonly heard message was that it could be presented or discussed in a more engaging way.



"It's a boring topic" – Financially struggling (DE), 18-45, Hull

"I have other stuff to worry about" – Financially struggling (DE), 18-45, Hull

"We are not being told the truth" – Just about managing (C1C2), 31-50, London

Amongst those *just about managing* - one reason that was cited for a lack of enthusiasm around doing or learning more was the perceived additional cost of being green.



"To be green is not that affordable" – Just about managing (C1C2), 18-30, Taunton

"The Government are incentivising you to use more efficient cars through road tax, etc but what is the real cost without subsidising them?" – Just about managing (C1C2), 31-50, London

*"If you can afford environmentally friendly stuff then fair enough" –
Just about managing (C1C2), 18-30, Taunton*

B.3 The drivers of climate change

Prior to discussing the drivers of climate change, people were asked what they thought were the biggest contributors towards carbon emissions were. As shown in Figure C.2, 82% of consumers thought the transport sector contributes the most towards carbon emissions. In all groups, consumers thought the biggest change needs to be in the transport sector. There was little mention of aviation, the focus being on cars and public transport.

Consumers discussed factors such as households having multiple cars, the need to phase out diesel and ultimately all fossil fuel cars, as well as encouraging more people onto public transport.

Some cited frustration with buying diesel cars based on perceptions at the time that this was the right thing to do – only to be told these are the worst polluting cars. The moves to ban and discourage diesel cars has impacted on trust, especially among older consumers and those that said they could not afford to change their car.



“Diesel makes me angry – I thought I was doing the right thing getting a diesel and I was not” – Lower SEGs (C2DE), 46+, Taunton

“It’s zero diesel in Bristol now...how do you get stuff into the city?” – Just about managing (C1C2), 18-30, Taunton

This was echoed in London, with the Ultra-Low Emission Zone being introduced in 2021, where motorists will have to change their car to avoid the new charge.



“All of those vehicles are just going to be dumped.” – Just about managing (C1C2), 31-50, London

Consumers expect there to be an increase in the use of electric cars, although two people across the groups expressed concern with the environmental impact of disposing of batteries at the end of their life.

Consumers also consider an increase in public transport to be essential. Several consumers expressed concern about the costs of public transport – namely, that it should not be more expensive than using a car.



“Over £200 to go up-country? It costs so much” – Just about managing (C1C2), 18-30, Taunton

“People just take it for granted, you can jump on a plane and go wherever you like now, I think generally transport will have to be reduced” – Financially struggling (DE), 46+ Dumfries

Other drivers of climate change commonly identified across the groups were agriculture and industry. One view was that concerns can be over-egged, but generally consumers had heard messages about the impact of farming on climate change.



“Farmers get too much stick for carbon emissions” – Just about managing (C1C2), 18-30, Taunton

Many consumers said they had cut back on red meat, but often this was about saving money rather than reducing emissions.

Finally, some consumers thought a driver of climate change is energy wastage and the lack of energy efficiency in general across homes and businesses.



“Look how much Las Vegas is lit up... I don’t think that there is a need for wasted energy like that” – Just about managing (C1C2), 31-50, Dumfries

B.4 Personal steps to reduce emissions

At the start of the session, consumers were asked their views on steps they had undertaken to reduce their own carbon impact. Consumers indicated they are trying to change behaviours but there are still many steps that consumers have not yet adopted. Those steps that involve the least investment (e.g. changing food habits) appear to be more popular than those with high upfront costs (such as buying an electric car).

During the discussions, consumers said the common or easy steps to reduce carbon emission were:

- Changing the way we travel – e.g. cycling more, car share, walking more
- Saving energy in the home, e.g. energy appliances
- Changing eating habits

Those that have made these changes are focused on saving money as well as protecting the environment.



“Protecting the environment is a nice consequence” – Just about managing (C1C2), 18-30, Taunton

The older Hull group noted that adapting is hard, and that we can do more, but energy needs to be affordable. They thought the younger generation would find it easier to adapt to a low carbon future.



“Maybe the next generation.” – More affluent (ABC1), 46+ Hull

B.5 Understanding climate change targets

Consumers were asked their views on targets, in particular government binding targets around net zero emissions by 2050.

Targets need to be ambitious, but realistic, recognising easier quicker wins have been done. The registration form completed at the start of the focus groups shows that consumers want the UK to have ambitious targets and lead by example in reducing carbon emissions (Figure C.4). There is little support for the view that this is not a UK issue.

From the sessions it was clear that for most consumers, there was a vague awareness of targets around climate change / carbon emissions. Consumers were most familiar around transport targets, such as phasing out diesel cars, but overall there was a confused picture of the UK’s commitments and track record around climate change.

Overall, the awareness of targets was low. Consumers often appreciated there would be targets to reduce carbon or change behaviours, but they lacked detail on the specifics, or had dates and targets mixed up.



“They want to eradicate diesel vehicles by – is it 2050?” – Financially struggling (DE), 18-45, Hull

“I have heard that they want fossil fuel cars off the road by 2035 or something” – Lower SEGs (C2DE), 46+, Taunton

“They have just brought forward the car, the amount of diesel and petrol cars and hybrid cars to 2035” – More affluent (ABC1), 18-45, London

For those that had heard of targets around 2050 net zero, only a handful of consumers across the groups knew what this meant.



“It is all about moving to the neutral carbon emissions - which is a big thing” – More affluent (ABC1), 18-45, London

Despite the overall lack of awareness, the overwhelming view is that ambitious legally binding targets are needed – to drive change. Once UK targets was explained, there was considerable support for them. But these need to be communicated effectively. These need to be at the national level, but filtered down to regional and local targets, with councils and cities leading the way with their own targets.

As well as a poor understanding of targets, unsurprisingly the UK's success at hitting targets was also not known. Across all the groups no one knew – or could even hazard an educated guess – as to how much the UK has reduced its emissions.



*"It has been reduced by 40% now from 1990 levels, but obviously it will get harder."
Just about managing (C1C2), 51+ London*

"It's do-able, but the easy hits are taken already" – More affluent (ABC1), 46+, Hull

Some expressed doubt that we would be hitting any deadlines, the view being that these were just pushed out to later dates. Others expected the UK to be on track as we are good at meeting our obligations and have made big improvements in reducing pollution overall in recent decades.



*"Think how we were in industrialisation times when we belted out pollution" –
More affluent (ABC1), 46+, Hull*

Across the board, consumers were unclear what happens when we miss legally binding targets.



*"Who is breaking the law, the Government or the National Grid?" –
Just about managing (C1C2), 51+, London*

"So, the National Grid is a company that makes money so if they don't do what the Government tell them to do they will be fined?" – Just about managing (C1C2), 51+, London

Consumers also noted mixed messages from the Government around targets. For example, the January 2020 announcements from government that they would provide some financial support to Flybe in the aviation industry.

B.6 Targets and UK Performance

Consumers were shown information on UK performance. The overwhelming view is that current UK performance is good.



"It's heading in the right direction" – More affluent (ABC1), 18-45, London

"Looking at the chart - it looks pretty good" – Financially struggling (DE), 46+, Dumfries

*"I think it does look impressive, but I still think we have a long way to go to bring it down" –
More affluent (ABC1), 18-45 London 2*

"It just doesn't seem fast enough that drop in the last 10 years considering how urgent everyone has been talking about it" – Just about managing (C1C2). 31-50, Dumfries

It was only the minority view that the UK was not doing well.



"We are definitely not leading the world" – Just about managing (C1C2). 31-50, Dumfries

A small number expressed distrust in the data, especially for some countries where corruption may be a problem. But when questioned generally the view was that they could trust the data "enough" – and were happy enough with the data to appraise country performance.

Consumers want targets to be across all countries, with appropriate incentives in place to ensure they were all doing their bit. The UK was seen as a country that could introduce tariffs or penalties to encourage other countries to meet their obligations.



"Our country should punish economically those that fail" – Financially struggling (DE), 18-45, Hull

*"Everyone has to get on board with this - otherwise feels like we are fighting a losing battle." –
Just about managing (C1C2), 51+ London*

*"We can encourage other countries - because just us doing this in the world isn't going to make much difference" –
More affluent (ABC1), 18-45, London 2*

It was noted that richer countries are those causing emissions - through transport, agriculture and consumer goods. A handful of other countries were seen as particularly poor performers. Countries singled out for poor performance were China and USA, followed by India, Saudi Arabia and Australia.



"It's a bit rubbish if China still burn fossil fuels" – Just about managing (C1C2), 18-30, Taunton

*"Us doing a bit of recycling or car sharing to work is not enough when you see China and USA" –
Just about managing (C1C2), 18-30, Taunton*

However, across several groups there was some recognition that those countries that manufacture on behalf of other countries would have higher emissions. This was particularly the case in Taunton.



*"Is that because we outsource manufacturing to China?" –
Just about managing (C1C2), 18-30, Taunton*

*"It's misleading to show the UK going down and saying that is good" –
Just about managing (C1C2), 18-30, Taunton*

This led to more understanding for China's and India's higher levels of emissions.



*"If we are at 1% and struggling to get to zero, China has no chance" –
Just about managing (C1C2), 18-30, Taunton*

B.7 Net Zero 2050

Consumers were shown information on net zero 2050 targets and performance against interim targets.

There were very mixed levels of understanding of net zero by 2050. In all groups the slightly different 2045 target for Scotland was presented and discussed. **No one was aware of these slightly different targets, not even in the Scottish groups.**

The 2050 net zero target was questioned as to whether it is achievable. Consumers generally see this target as ambitious, for some very ambitious and possibly not achievable. For the majority, 2050 is a long enough time period to make the change and anything shorter would be more of a risk. **Very few in the groups had strong views on bringing this forward given the scale of investment needed to achieve it.**

Overall, 2050 seemed a sensible and reasonable target.



"2050 is not that far away"- Just about managing (C1C2), 31-50, Dumfries

"I don't think it is ambitious, I do think it is realistic" – Just about managing (C1C2), 31-50, Dumfries

"2045 is unrealistic as people don't want to change" – Just about managing (C1C2), 31-50, Dumfries

*"I think the targets are do-able because new technology is coming along every year" –
Just about managing (C1C2), 51+ London*

"It gives time to work out solutions" – Just about managing (C1C2), 18-30, Taunton

There was some distrust around whether the Government could or would achieve the target. Consumers expressed concern that future governments cannot be made to deliver current government targets. In addition, recent political issues have eroded trust in the Government.



"You are talking about 30 years away; the Government is going to change a million times between now and then" – Just about managing (C1C2), 51+, London

"A different government may have different targets" – Just about managing (C1C2), 31-50, Dumfries

Some worried that a minority of people may be disruptive if these targets are missed – although very few said they personally would be upset.

The cost of achieving net zero was an issue, especially for the financially vulnerable consumers.



"We will need to change the way we live"- Financially struggling (DE), 18-45, Hull

"There is not enough money in the pot for the health service or education – we cannot even afford that" – Just about managing (C1C2), 18-30, Taunton

"I don't want this affecting my future finances" – Financially struggling (DE), 18-45, Hull

Only one person out of 60 participants indicated that cost should be no object, and that the UK needed to do all it can, as quick as it can.

There was quite a bit of scepticism around the use of offsetting to meet the targets. Some questioned if tree planting and/or carbon capture and storage are workable solutions.



"The net zero thing is something I have a problem with - because essentially if you plant a tree then it offsets and the evidence is not great about how the offsetting works." –

More affluent (ABC1), 18-45, London

A common sentiment is that this UK target is important and worthwhile, but other countries need to do their bit.



"Otherwise we are wasting our time" – More affluent (ABC1), 46+, Hull

"We have to do our bit but unless the rest of the world does its bit, it's a waste of time" – Lower SEGs (C2DE), 46+, Taunton

One sentiment was that no communities should be left behind. For example, there is local employment from fossil fuel power stations in the Hull area. Moreover, the older respondents in the Hull and Taunton groups noted the impact of the demise of the coal industry in the north, and some worried about power stations closing, resulting in thousands being made redundant.



"I lived through that" – More affluent (ABC1), 46+, Hull (on the coal industry decline)

"You can't shut down an industry for polluting too much and not find a home for people" – Just about managing (C1C2), 18-30, Taunton

Some countered this, saying that today we are more technology-savvy and communities are less reliant on one industry. **But all agreed training and retraining in new skills will be important.**

The more affluent consumers (in the higher socio-economic groups) were more aware and more supportive of government targets around 2050. Financially vulnerable consumers were less sure whether they supported 2050 targets. The consumers that disagreed with the 2050 aims were older customers. Younger consumers and more affluent consumers were more likely to disagree that the Government is doing enough today to meet 2050 targets.

Regionally, London and Taunton were the most supportive regions of the 2050 targets, showing that views are not uniform across the country. Consumers in Taunton were the most supportive of the view that the Government is doing enough today to meet 2050 (linked to their higher awareness of the energy industry in general), with London and Dumfries slightly less supportive of that view.

B.8 Meeting future targets

During the sessions we sought to understand consumer perceptions on the Government's aim to achieve net zero emissions by 2050. This considered which sectors and technologies would be most affected; and the role of the Government, consumers and businesses in delivering the required change.

Impact on Sectors

A key focus area would be how to change sectors beyond energy, primarily transport. Food, manufacturing and industry were also mentioned.



"The Government needs to make public transport more reliable and cheaper so that people have got more incentive to use it." Financially struggling (DE), 18-45, Hull

"It's not just the royal family - it's anyone with a bit of money. They're just hopping on planes here, there and everywhere." More affluent (ABC1), 46+, Hull

Technology is seen as key, especially any technology that means we can be green in an affordable way.

All groups commented that **energy efficiency** needs to improve, i.e., insulate homes, use efficient appliances, improve glazing. Some groups mentioned the challenge of making current housing stock more efficient, especially older homes.

In addition, there was a sense that we need to do more to encourage the use of **low carbon energy in the home**, such as continuing to fund renewables in the home, e.g., solar power.

Role of the Government

Consumers indicated that government support is essential if we are to drive change – people cannot do much without government help, e.g. changing energy policy such as around diesel trains; home building regulations to ensure energy efficient homes, etc.

Consumers were very aware that change can cost. The view is that the Government needs to ensure the **cost is fair** through the use of scrappage schemes (for cars) and other incentive schemes.



*"The cost of change needs to be paid by the right people" –
Just about managing (C1C2), 18-30 Taunton*

*"Government needs to give subsidies to encourage homes and businesses" –
Lower SEGs (C2DE), 46+, Taunton*

Role of homes and businesses

Everyone has a role to play:



"It is the multinationals that probably need to do their best, because I think without that, individuals aren't going to make much of a difference" – Financially struggling (DE), 46+ Dumfries

*"Nothing will change unless households change behaviour" –
Just about managing (C1C2), 31-50, Dumfries*

"The biggest emitters are not households - it is big industry" – More affluent (ABC1), 18-45, London

Consumers also recognised the **need to change habits**. This includes moving away from the disposable economy (where we throw away things that break rather than fixing them) and making more eco-houses.

B.9 The impact of the heat sector on climate change

Across the groups there was considerable surprise that heat had a material contribution to UK emissions.



"I think heating is much higher than I thought it was" – More affluent (ABC1), 18-45, London

Most then indicated it was less of a surprise the more they thought about it.



"My biggest (household) expense is gas" – Just about managing (C1C2), 31-50, Dumfries

*"If you have 9 months turning the heat on, you are going to have a big (energy) bill." –
Just about managing (C1C2), 51+, London*

Consumers were overwhelmingly receptive to the idea that the way we heat space and water needs to be transformed to hit targets. There is no support for consumers needing to put extra layers of clothing on to stay warm in their homes.

This was a view shared by all groups and demographics.



"People can't freeze" – Just about managing (C1C2), 31-50, Dumfries

*"It is difficult to envisage not using gas and oil – they are warm and cosy" –
Lower SEGs (C2DE), 46+, Taunton*

*"Nobody is going to have an issue with that, they just need to make it easy for people to make the right decision."
– More affluent (ABC1), 18-45, London*

Similarly, there is little support for energy bills needing to rise to drive low carbon heating. There were very emotive responses on the potential consequences of this.



*"People in Scotland would die because they can't afford gas and electricity" –
Just about managing (C1C2), 31-50, Dumfries*

"Heating is expensive – you have to turn the heat down" – Just about managing (C1C2), 51+, London

Some of the older consumers thought it made sense to start planning now for an end to gas, recognising that North Sea gas will run out in the future, and thought that offices and workplaces may find it easier to adapt their heating compared to homes.

B.10 Low carbon heating options

Familiarity with the options

There is low familiarity with all options. Overall, consumers' experience of low carbon heating was low. All but a few had a poor appreciation of other options for heating their homes. Solar thermal panels may be the exception, but from the discussions it seemed that consumers were indicating their familiarity with solar panels on homes in general.

It was recognised that cost could be a barrier to households considering other options. Some recognised that the ongoing cost may be beneficial, but the upfront cost would preclude a lot of homes.

A number of people across the groups had changed their boiler in recent years following a boiler breakdown. They all indicated they bought the cheapest energy efficient replacement gas boiler, that the plumber recommended. No plumbers recommended alternatives.



"I am about to (change gas boiler). I am now thinking should I not be getting a gas boiler. But I had no idea about any of these" – More affluent (ABC1), 18-45, London

B.11 Views on the Options: Phase 1

In the first groups in Hull, the current view of the expected upfront costs and ongoing impact on energy bills (e.g. of additional or reduced fuel costs) of each option was provided. In contrast, in the Taunton groups, consumers were informed that the expected upfront cost would be dealt with through a payment mechanism – such as through energy bills, and only the longer-term impact on energy bills (once the upfront cost is covered) was presented to consumers.

Findings from Hull

In the Hull groups there was lots of focus on the upfront cost – these consumers focused on the cost, the disruption they would incur (such as the space required and visual impacts), and how viable and successful they would be. The following comments were made by the first group in Hull (Financially struggling (DE), 18-45).



"What if you have just had your garden done?"

"That is an eyesore in the garden"

"You've got to buy logs, got to store them – not everyone can do that"

"Is burning wood low carbon?"

They were also the most negative about all the options, and said they appreciated their current heating approach more on the grounds it is more reliable, adaptable and hassle free. Three of the four comments below were from the more affluent (ABC1), 46+ group in Hull:



"Not an option for me"

"I am less keen now I have seen the detail"

"They are not as cost beneficial as I expected"

"I am a bit miffed – do we have to?"

Some financial benefits were seen as essential if these options are to be accepted by all. **The views in both these groups was that it is not enough for there to be only climate change benefits – there needs to be financial benefits.**



"Why rip it out for no benefit?" – More affluent (ABC1), 46+, Hull

Findings from Taunton

The discussion in Taunton was notably different. Once the upfront cost was not shown and it was explained it would be dealt with through a financing option such as energy bills, consumers reviewed each option in a much more positive light. It is worth noting that overall, the Taunton groups had more familiarity with many options beforehand.

Some options were still considered unwelcome, but consumers were much more willing to consider the options for their household. In these groups, consumers were generally accepting of most of the options if their energy bills are unchanged, and especially if they are lower in the future. They were much more willing to accept alternative heating seen as more disruptive, if the upfront cost is dealt with by another organisation.



*"Yeah, they do look ugly, but I think you would get used to them" –
Just about managing (C1C2), 18-30, Taunton*

The Taunton groups recognised that some options are not viable in all homes, for example, listed buildings and flats.



*"I can't have any because I live in a listed terraced house." – Lower SEGs (C2DE), 46+, Taunton
"I don't know where you would put them in certain streets though" –
Just about managing (C1C2), 18-30, Taunton*

Across all of the groups in Phase 1, there was an appreciation that the strategy for new builds and the existing housing **stock may need to be very different, with different approaches and timelines.**

B.12 Views on the Options: Phase 2

Phase 2 of the project involved more detailed discussions of the options in extended 3-hour focus groups. There was more time to discuss each option and answer any consumer questions. The information presented in Phase 1 and the updates to the information gathered for Phase 2 was presented to consumers.

The information provided did not cover all the information consumers asked for, with the gap mostly around energy bills and costs. Whereas the upfront costs and ongoing fuel costs are approximated in the literature, the full impact on all network costs remain a gap.

The approach to dealing with the upfront costs followed the format adopted in Taunton. Considerable time was also spent discussing the options for paying the upfront costs of the options.

Furthermore, in Phase 2 we conducted an exercise to understand the initial ranking and acceptability of the options, using hypothetical costs to find out the size of the likely bill reduction that would be acceptable. This was seen as a sensible approach given the absence of complete data on costs.


However, it is essential that better information on costs is shown to consumers in later engagement research. There were many questions on costs, such as how long it would take for energy bills to cover the upfront costs – after which bills would adjust to their new levels; some older customers questioned whether they would see any financial benefits of change given the high upfront costs.

Direct heating


This was seen as a tried and tested safe option, suitable for all types of households; and electricity is seen as a reliable source and energy.



The biggest concern with this option is that electricity is expensive given that the cost of a unit of electricity is around five times that of gas². In terms of warmth and comfort, there were mixed views as to its reliability. For some, electric radiators and heaters are awful – being associated with a lack of heat control and drying out the air; but for others they work fine. This was particularly the case in Dumfries.


 *“Storage heaters heat the house when you are not there” – Financially struggling (DE), 46+, Dumfries*
“We used to have them in the office, old storage heaters. You couldn’t regulate anything, and you had to guess what the weather was going to be like the next day. And we used to have a bowl of water so that it would have some moisture in the air; it was amazing how much it emptied from the bowl because of the dryness” – Just about managing (C1C2), 31-50, Dumfries

Many of the negative views were based on actual experience. Whilst some agreed that technology must have moved on, those that had direct heating in the past were sceptical of technology updates: whilst modern radiators may work, the reputation is that they do not.

 *“I have lived with these in the last place I had - no gas just all electric and it was awful. When you turned it on, it made the room dry and uncomfortable, it felt like a very dry heat, it was horrible. As soon as you turned it off, 5 minutes later you were shivering. And they were expensive.” – Just about managing (C1C2), 31-50, Dumfries*

“My aunty says they are great, but I don’t believe a word she says” – Just about managing (C1C2), 31-50, Dumfries

And in the London groups consumers thought the disruption for the household through removing radiators and associated water plumbing could be quite challenging.

 *“Disruption as well, I think. First of all, you have to take up all the floorboards and take out all the pipes and radiators. I would have to reinstall electrical radiators; I would literally have to pull my home apart. People would need to know about these changes with time in hand.” – Just about managing (C1C2), 51+, London*

“I am in a flat and I don’t want to be ripping out all the radiators and putting in ugly electric things” – More affluent (ABC1), 18-45, London 2

Other issues cited with this option are the strain it could put on the electricity system.

 *“It’s totally unworkable” – Just about managing (C1C2), 51+, London*

“There would be a massive strain if we lost what is filling the gap now” – Just about managing (C1C2), 51+, London

Some groups were concerned about the impact of electricity power cuts: when you lose electricity, you lose heating. **This was of especially of concern in Scotland where electricity is seen as less reliable. Currently, if consumers lose electricity, they can still heat their homes.**

 *“Electricity is not reliable everywhere” – Financially struggling (DE), 46+, Dumfries*

² To illustrate, see <https://www.theenergyshop.com/guides/energy-prices-per-kwh>
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Heat pump

Whilst consumers were receptive to these overall, there were practical concerns around whether they would be warm enough in those homes where energy efficiency would be difficult to put in place.



*"Scotland is very different from England... as we have different winters to you." –
Just about managing (C1C2), 31-50, Dumfries*

*"My first thought is that there is a possibility it may not be warm enough." –
More affluent (ABC1), 18-45, London*

*"I would consider it - but I would have to be told that my house will be insulated enough." –
More affluent (ABC1), 18-45, London*

*"We just have to be confident that we are going to be warm enough" –
More affluent (ABC1), 18-45, London*

On balance, the air source heat pumps were more popular. The larger space needs of the ground source heat pumps made them less workable in practice; more so in density populated areas, such as cities and towns.



*"Our garden is a relatively new build and you would struggle to put a ground source in" –
Just about managing (C1C2), 31-50, Dumfries*

"You need a lot of space for a ground source." – Just about managing (C1C2), 51+, London1

"The problem that most people will face is the space availability" – More affluent (ABC1), 18-45, London

"In busy London it doesn't sound like it is going to work." – Just about managing (C1C2), 51+, London

Air source heat pumps were seen as more practical, especially as they could work with flats and other building types; and can provide air cooling during hot weather.



*"For current homes that would seem to make sense" – Just about managing (C1C2), 31-50,
Dumfries*

Visual amenity was rarely mentioned, but one commented that combined with rubbish bins, houses are starting to look unattractive.



*"There isn't much room for them, and a lot of people have bins at the front and this at the back - you
just think everything will look ugly." – Just about managing (C1C2), 31-50, Dumfries*

There are very mixed views on potential disruption caused by noise. Older consumers in particular seemed to think this could be more of a barrier. But for those consumers with any familiarity with these, the view was that it is not an issue.



*"I know someone who has one and you can only hear it outside." –
Just about managing (C1C2), 31-50, Dumfries*

*"If you have that thing making that noise, I wouldn't have it." –
Just about managing (C1C2), 51+, London*

*"I am really sensitive to noise so for that reason it would be a big no." –
Just about managing (C1C2), 51+, London*

There was also concern with this option that losing electricity would mean a loss of heating. This view applied to all options that rely on electricity. Consumers want to understand the risk of this happening.

Most groups recognised there could be a role for this option: it could work well in the right locations and properties. Consumers need more information on the likely bill impacts of this option, as well as how they can guarantee, or know if they will be warm enough.

Hybrid heat pump

Overall, consumers were receptive to this option. For many this was seen as a good compromise option that guarantees the comfort and warmth needed for all households.



"It sounds okay but is it going to be practical?" Financially struggling (DE), 46+, Dumfries

"It sounds too good to be true" – Financially struggling (DE), 46+, Dumfries

"It sounds like it is a middle option, you could deal with old buildings with this option" – Just about managing (C1C2), 51+, London

But for others, especially older consumers, this seems overly complex.



"What is the cost of looking after two systems" – Financially struggling (DE), 46+, Dumfries

"If you don't use the boiler in summer – how reliable is it in winter?" – Financially struggling (DE), 46+, Dumfries

And without a solution to the remaining gas use, this does not go far enough for some. However, if there is the potential for a long-term solution to the residual gas issue, consumers are much more supportive of the option.



"We are trying to go carbon neutral - this feels like a halfway step" – Just about managing (C1C2), 31-50, Dumfries

One group questioned whether the hybrid has to be fossil fuel – or whether renewable electricity could be used to fill the gap.

"Why does it have to be gas that is going to be supplementary?" – More affluent (ABC1), 18-45, London

Some of the pros and cons around the heat pump apply here – e.g. those worried about space and noise or welcomed air cooling and temperature control with the heat pumps also thought this applied for this option. Overall, the groups were split between this and the heat pump, with heat pumps marginally more acceptable.



"Hybrid cars are popular for a reason" – Just about managing (C1C2), 51+, London

As an option that uses electricity, there was also concern with this option that losing electricity would mean a loss of heating. Consumers want to understand the risk of this happening.

Most groups recognised there could be a role for this option: it could work well where heat pumps do not work so well. Consumers need more information on the likely bill impacts of this option, as well as understanding whether or not a heat pump, or hybrid heat pump, is better for their home in practice.

Biomass

Whilst this provided controllable heating, and was the option with the highest levels of familiarity, this option was overwhelmingly seen as a step back.



"It's like coal" – Financially struggling (DE), 46+, Dumfries

And possibly not scalable. For example, some questioned whether biofuels, such as wood, could be grown locally in cities.



"As there enough trees" – Just about managing (C1C2), 31-50, Dumfries

*"If everybody did this surely, we wouldn't have enough trees. How quickly do trees grow?" –
Just about managing (C1C2), 51+, London*

*"You see because property and land are so valuable no one will grow a tree over a block of flats." –
Just about managing (C1C2), 51+, London*

And even where it is – this is widely considered to be a polluting option; consumers did not expect this to be low carbon.



"This isn't carbon neutral - smoke is still going up" – More affluent (ABC1), 18-45, London

*"If you were burning things in central London the air would be black." –
Just about managing (C1C2), 51+, London*

*"Didn't we ban log burners in London because they are bad for the environment? Anyway, surely by
having these it is similar - the air quality will be poor." - More affluent (ABC1), 18-45, London*

This option was roundly considered too difficult for all households. Some commented it is better for organisations. such as schools that can have truck deliveries – but is not suitable for households.



*"The last place we lived it was so cold during the winter we had to use a log fire. That was a pain,
bringing the wood into the house - so I would think having to go out and putting that number of
pellets in a day is a lot. For the elderly it would be much harder." –
Just about managing (C1C2), 31-50, Dumfries*

This option was seen as too disruptive for the vast majority of homes. For example, one person in the first Hull group said she had a wood burner (alongside her gas central heating) and it was so inconvenient that she had started to burn coal in it instead.

Consumers were not interested in hearing more about this option – such as better estimates of costs. It is not considered an option, except for the odd home that likes it.

Heat network

This option was generally very well received. It was frequently seen as having the benefits of the biomass boiler option, without very much of the downside. Where viable, this option makes sense.



"They are good for densely populated areas. But there is an issue of where to put the large unit." –

More affluent (ABC1), 18-45, London

"Everything about it sounds good, it sounds like it is moving with the times of technology and modernising things." – *More affluent (ABC1), 18-45, London*

One group suggested decommissioned gas sites would make good locations.



"If it is coming from there it would make no difference to the user." –
Just about managing (C1C2), 51+, London

It was considered a good option for vulnerable people.

The downsides echoed some of the concerns about biomass boilers, such as the impact on farming and forestry:



"The wood would need to be nearby. You couldn't do this in Glasgow." –
Just about managing (C1C2), 31-50, Dumfries 2

Some disliked the disruption of putting hot water pipes in the ground. This was seen as too disruptive for some – especially in the older London group.



"If you think about the disruption we get when a water pipe burst in this weather now, can you imagine every single road in your borough being dug up, it is never going to work." –

Just about managing (C1C2), 51+, London 1

"Are there not huge disruption issues with it. We would have to get our houses dug underneath to get the pipes in, wouldn't we?" – *More affluent (ABC1), 18-45, London*

Some noted there may be concerns with electricity and hot water coming from a single source, meaning there would need to be effective regulation to protect consumers.



"You would need to have good regulation in place in terms of prices." –

More affluent (ABC1), 18-45, London

"You need regulations, I think everything is about reassurance." – *More affluent (ABC1), 18-45, London*

Consumers wanted more information on the scale of these (streets versus villages versus towns versus cities) – and whether they would be possible in their areas. They also were keen to understand how close the generation unit may be to homes, whether this would be a nuisance in some way (e.g. truck deliveries) and whether it would be landscaped or visible.

Hydrogen gas boiler

This is an emerging technology as a viable alternative to natural gas but there is very little public awareness at present. The main benefit of this option is that it is seen as possibly the least disruptive option to households as it is the closest to what we currently have in place.



A reaction from all consumers upon initially hearing about this option was to seek reassurances on its safety. This was an immediate and strong reaction across all consumers.



"It made me think straight away it can't be safe" – More affluent (ABC1), 18-45, London 2

"Immediately hydrogen doesn't seem safe - that is not based on any real knowledge, it is just what you think about hydrogen: hydrogen bombs. I know it is different but that is just is my perception." – Financially struggling (DE), 46+, Dumfries

"No one is on board with the hydrogen because everyone is just really unsure." – More affluent (ABC1), 18-45, London

Interestingly, consumers were more accepting of the use of hydrogen for other purposes, such as powering cars. When probed in greater detail, the view is that consumers would be accepting about the safety of this option, but that consumer communication and education would be essential to achieving this.

Many consumers questioned why trial and test a new technology when workable solutions already exist. This was compounded by the lack of support for offsetting as a means of ensuring net zero is met.



"It feels like a lot of wasted spending to get it implemented – when we could use it on other schemes and get there quicker" – Just about managing (C1C2), 31-50, Dumfries2

"How do we know they won't leak? I don't think it is a good solution." – Financially struggling (DE), 46+, Dumfries 1



"Over the six options we have looked at - it is the least disruptive." – Just about managing (C1C2), 51+, London

The potential for higher ongoing costs were a notable concern, and some indicated that consumers would not be willing to adopt this option if their bills increase, even if this is effective at protecting the environment.



"It isn't just the safety – it's the expense." – More affluent (ABC1), 18-45, London

"The question you have to ask people is do you want to save the planet or yourself. I can guarantee most people will want to save themselves" – More affluent (ABC1), 18-45, London

Overall, hydrogen is seen as a viable option, but consumers want to be reassured that it is safe and bills will not increase. Most people do not see the current gas supply as risky and need reassurance with hydrogen.



"If I was reassured then there wouldn't be a problem." – More affluent (ABC1), 18-45, London

"If the price and regulations are right and it is done properly then yes, it is an option." – More affluent (ABC1), 18-45, London

Protecting consumers

As shown in the Case studies in Section 4.2 of the main report, in all groups there were concerns for how wholesale changes in the way we heat homes would impact on vulnerable and elderly consumers.



"The elderly like to stick to what they know" – Financially struggling (DE), 18-45, Hull

"My parents would go into meltdown – they are too old" – Financially struggling (DE), 18-45, Hull

"Every age and every ability have to be able to deal with it" – More affluent (ABC1), 46+, Hull

"You can't put logs in boilers if you are elderly or disabled" – More affluent (ABC1), 46+, Hull

Overall, the view was that the elderly and disabled would need to be supported, and that those on lower incomes would be unable to pay for any transition to a new heating system.

Generally, it was felt the options with less maintenance and less change were best for vulnerable households.



"The heat network (is preferable) - because it has less maintenance: it is taken care of by someone else." - More affluent (ABC1), 18-45, London

Organisations such as housing associations would need to have a clear remit to help vulnerable consumers.

The case studies also show there was concern for tenants, specifically that landlords will not act in tenants' best interests, and tenants do not have control in this area. Questions were asked about what rights tenants will have, and what happens if landlords do not go for the best option.

Option acceptability

Overall, consumers across the groups indicated they would be willing to transform away from gas heating, to one of the other options. However, the right option for their household needs to get the bill and reliability levels right.



"I don't think anyone cares what the boiler is doing as long as it is heating your house and not costing you a fortune." – More affluent (ABC1), 18-45, London

"There is something for everyone." – More affluent (ABC1), 18-45, London

"It depends on your household, if you have kids you have to think about their welfare." –

More affluent (ABC1), 18-45, London

Consumers do like options that give them flexibility around the changeover.



"Being able to change when it suits you sounds great." – More affluent (ABC1), 18-45, London

As already stated, the options that require electricity to work do concern some consumers, especially for vulnerable households.



"So, there is no back up which is a problem." – More affluent (ABC1), 18-45, London

*"That is why I love gas stoves, if the electric goes you can still boil water." –
More affluent (ABC1), 18-45, London*

Whichever option(s) are progressed, there needs to be regulations in place to ensure that prices do not increase unregulated.



“Do you know what is wrong with that list, none of these have a rock-solid guarantee that we won’t pay this on Monday and then Tuesday we double it.” – Just about managing (C1C2), 51+, London

Scenarios

To understand consumer acceptability of the options, people were asked to state which options are acceptable to them and their household based on the information provided. A further exercise was to present consumers with a range of scenarios around the options, showing hypothetical bills, in order to gauge their initial views.

Consumers were presented with eight choices around two options with differing bill impacts and they were asked to pick the preferred option. Half of the choices were for their own home, recognising that options may not be feasible; the other half of the choices asked consumers to pick their preferred option assuming no feasibility restrictions in the home.

This exercise worked well. Consumers provided considered responses, and whilst they did not have sufficient information in the sessions to provide definitive views on the ranking of options, the results do provide some insight and additional views of the acceptability and feasibility of each option.

Figure B.1: In-session - Scenario voting based on suitability to homes and hypothetical cost – results

Ranked	Overall	In my home (given constraints)	In any home (no restrictions)
1	Heat Network	Heat Network	Heat Network
2	Hybrid Heat Pump	Direct Electric heating	Heat Pump
3	Heat Pump	Hybrid Heat Pump	Hybrid Heat Pump
4	Direct Electric heating	Heat Pump	Hydrogen Gas Boiler
5	Hydrogen Gas Boiler	Hydrogen Gas Boiler	Biomass Boiler
6	Biomass Boiler	Biomass Boiler	Direct Electric heating

The results verify that direct electricity and biomass boilers are the least preferred options (as these are ranked lowest in the final column of the table).

Interestingly, the current feasibility and viability of the options means that many households may need to have options they do not prefer.

The results of this exercise demonstrated the finding that if households can receive their preferred option, they generally do not need their bill to reduce too much as compensation. But if consumers need to have options they prefer much less, then potentially they would like their bill to go down by several hundreds of pounds as compensation.

The discussion on what drove choices shows that consumers consider cost to be a factor but not the primary driver. More important in all the groups are reliability (i.e. warmth and comfort), disruption, and freedom of choice (when and how).



"Definitely disruption and reliability" – Just about managing (C1C2), 51+, London

*"I think the reliability, and disruption in my house. Especially the installation disruption." –
Just about managing (C1C2), 51+, London*

*"It was more about reliability and getting the service I wanted; less disruption as well" –
More affluent (ABC1), 18-45, London*

"For me it is reliability, although sometimes definitely cost right now in the period of life I am in; but I think in the bigger picture it would be based on reliability" – More affluent (ABC1), 18-45, London

B.13 Options to pay for low carbon heating

In Phase 2 there was a discussion on how decarbonisation of heat should or should not be funded.

The initial reaction to the question is that households do not want to see higher energy bills. Across all the groups this was the majority view. But they recognise that households will need to pay one way or another. Government or businesses paying for it would ultimately end up being recovered from households.



*"The Government only get its money from tax so at the end of the day it is us paying for it." –
Just about managing (C1C2), 51+, London*

When presented with the options, there were mixed views as to whether energy bills and grants/vouchers are the best payment option. To some extent it does depend on the heating option.

The benefit of paying through tax is that it can be linked with the ability to pay. Tax is a good approach, but it needs to be fair. Those on lower incomes need to be protected, therefore income tax was seen as a good way to raise the monies.

Generally, consumers were against raising the funds through VAT, except if it is used to selectively target certain goods and behaviours.



*"VAT is already high at 20% but you could increase it on certain things that are carbon bad." –
Just about managing (C1C2), 31-50, Dumfries*

Council tax was the least popular approach.



*"I think council tax would be unfair. Not everyone has control over their heating system like housing association tenants, so you don't have the option to change that bill." –
Just about managing (C1C2), 31-50, Dumfries*

"It is bad for renters, completely out of their control." – More affluent (ABC1), 18-45, London

Whilst it was recognised that in theory councils works for the common good of those they serve, in practice they are seen as disorganised with opaque decision-making processes. They are currently not trusted enough.



"They are very disorganized generally aren't they" – More affluent (ABC1), 18-45, London

*"Some of them might be very well intentioned but they are not very good at financial management"
– More affluent (ABC1), 18-45, London*

There was also the worry with council tax that central government may use this as a means of giving councils less funds from the centre, putting this and essential services at risk.



"Road tax does not go to the roads" – Financially struggling (DE), 46+, Dumfries

Stamp duty was also dismissed as not workable, especially given some parts of the UK do not pay stamp duty.



"Not good - because the more expensive the house is going to be, the more money you will have to pay to the Government" – More affluent (ABC1), 18-45, London

Consumers liked taxation being used to fund a scrappage scheme or a grant. The view was, that this needed to be voucher and not cash based, overseen by an independent body (rather than councils), and ensuring consumers are in control and have autonomy.

Energy bills were also seen as a potential payment approach. The benefits of using energy bills to raise the funds are that it links paying for it with energy usage, and drives energy efficiency.



"Keep it simple and just pay for what you use" – Just about managing (C1C2), 31-50, Dumfries 2

"I think we wouldn't notice it as much if it was just part of their bill." –

More affluent (ABC1), 18-45, London

For most, the regulated energy network companies e.g. National Grid, were seen as a safe pair of hands, and trusted. Suppliers were seen as less suitable.



"We have all been on the phone to energy suppliers trying to sort out the mistakes on our bills, so it's difficult to trust these people" – Just about managing (C1C2), 31-50, Dumfries

"I wouldn't trust the council; I would trust even less the private suppliers." –

Just about managing (C1C2), 51+, London

Consumers said that they consider regulated network companies to have a clear mandate, are more transparent and are successful by providing efficient, reliable services to consumers.

However, there were some concerns with private companies having the potential to make excessive profits from the transformation.



"I trust the network companies because we know what it is in for them. I know their point of view will be a specific goal." – Just about managing (C1C2), 51+, London 1

The other payment options presented – e.g. saving schemes and equity loans were roundly rejected. These were seen as having limited application in practice – and therefore not suitable for all households.

B.14 Communication and Future engagement

At the end of the sessions, consumers indicated more of an appreciation of the issues discussed, and that in general, they would pay more attention to this topic moving forward.



"It has opened up our minds" – Lower SEGs (C2DE), 46+, Taunton

*"Probably be more conscious of it and it will be interesting to follow it." –
Just about managing (C1C2), 31-50, Dumfries*

"I now find it much more interesting." – Just about managing (C1C2), 51+, London

In support of this, consumers were asked if they had heard anything that made them think about how they will use energy and heating in the future to reduce their carbon footprint more. 83% said they would reconsider their energy use (Figure C.9).

When asked about renewable heating in particular, 42% consumers indicated they would explore renewable heating (Figure C.10). A key barrier cited by customers is the current cost and lack of existing financial mechanisms to support making a change. Unsurprisingly, more affluent customers said they were more likely to look into renewable energy for their homes, with over half of these consumers saying they would. Just about managing and financially vulnerable consumers indicated low likelihoods of exploring renewable energy at this time.

A key finding from the sessions is that messages regarding decarbonisation of heat need to be communicated soon. Consumers said that households will need years to understand that change is coming and prepare for alterations to their heating system, and to be assured that the regulations, laws and protections are in place to ensure they receive a safe, reliable and consistent form of heating. If households are informed now about the future changes expected over the coming years, they can get prepared.

Consumers need to see more information on the heating options - and less on the issue of climate change in general.



"I think the message needs to be sent to people more. I don't think I am told about my heating much compared to like my meat intake for example." – More affluent (ABC1), 18-45, London

*"They (people) need to receive correct information - no having to read in between the lines." –
More affluent (ABC1), 18-45, London*

Whilst 2050 is a long way off, interim milestones around heating and other sectors need to be communicated early if people need to start focusing on this now.



"Now we need to do something.... because people need to know that essentially there is going to be a transition." - More affluent (ABC1), 18-45, London2

The way people hear about this topic needs to change. Whilst most agreed that the news is constantly mentioning the issue of climate change, consumers want information on the future, and options to be presented in a clearer and more engaging way. Communication needs to be across a range of platforms such as mainstream news, social media, paid social media ads (e.g. google ads). Information on the financial schemes and assistance around changing heating option is of particular importance.

Communication strategies need to recognise there are issues around trust – not all sources of information are trusted, for example there is a growing concern about the accuracy of social media posts, so messages need to be from trusted organisations. Ofgem and the Government were cited as key information sources. **Ofgem in particular is thought to have the remit of protecting energy consumers – with no other agenda.**



"Shouldn't it come from Ofgem the regulator because they are neutral in the sense they are a regulator, they are there to regulate this?" - More affluent (ABC1), 18-45, London

Despite the positive steps outlined to improve communications, many in the groups were rather lukewarm about looking to seek out more information based on the discussions. Whilst they would listen to the news more – they were unlikely to start to search for additional information.

Despite the overall receptiveness of consumers to changing heating in the future, consumers' appetite for exploring renewable heating right now was generally not increased (Figure C.10). However, those that indicated they could potentially move to a new house or may need to replace their boiler in the near term were more at odds with this.



"I will be looking to see what (the changes) are" – Just about managing (C1C2), 18-30, Taunton

Appendix C: Summary of research polling

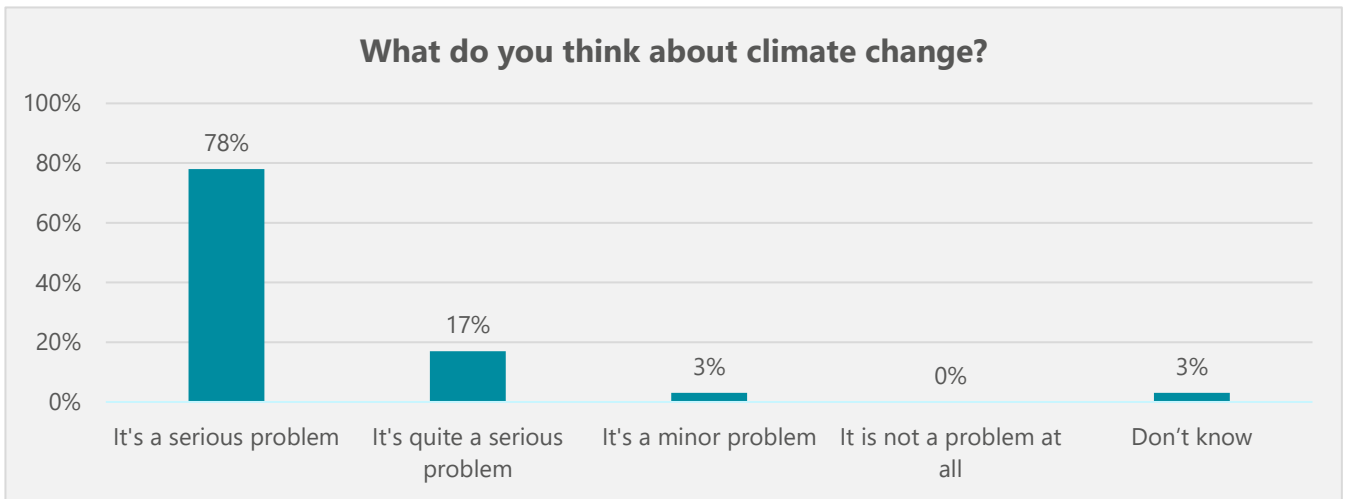
In this appendix we summarise the voting figures collected during the research.

C.1 Pre-session views

When consumers arrived and registered at the venue for their group, they were asked to provide their views on a range of questions. Responses to these questions are given below.

Consumers indicated that they consider climate change to be an issue. 93% indicated it was either a serious or quite a serious problem.

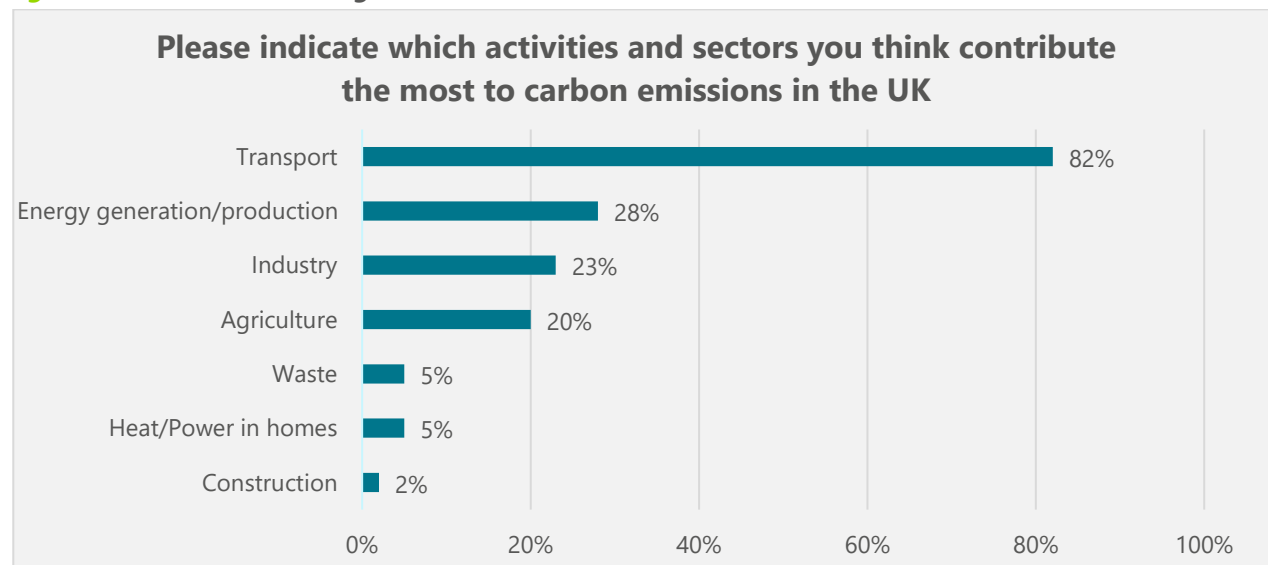
Figure C.1: Pre-session voting form: Views on climate change



Base – 58; two people did not answer

89% of consumers indicated they thought the transport sector contributes the most towards carbon emissions. 5% indicated heat and power in homes.

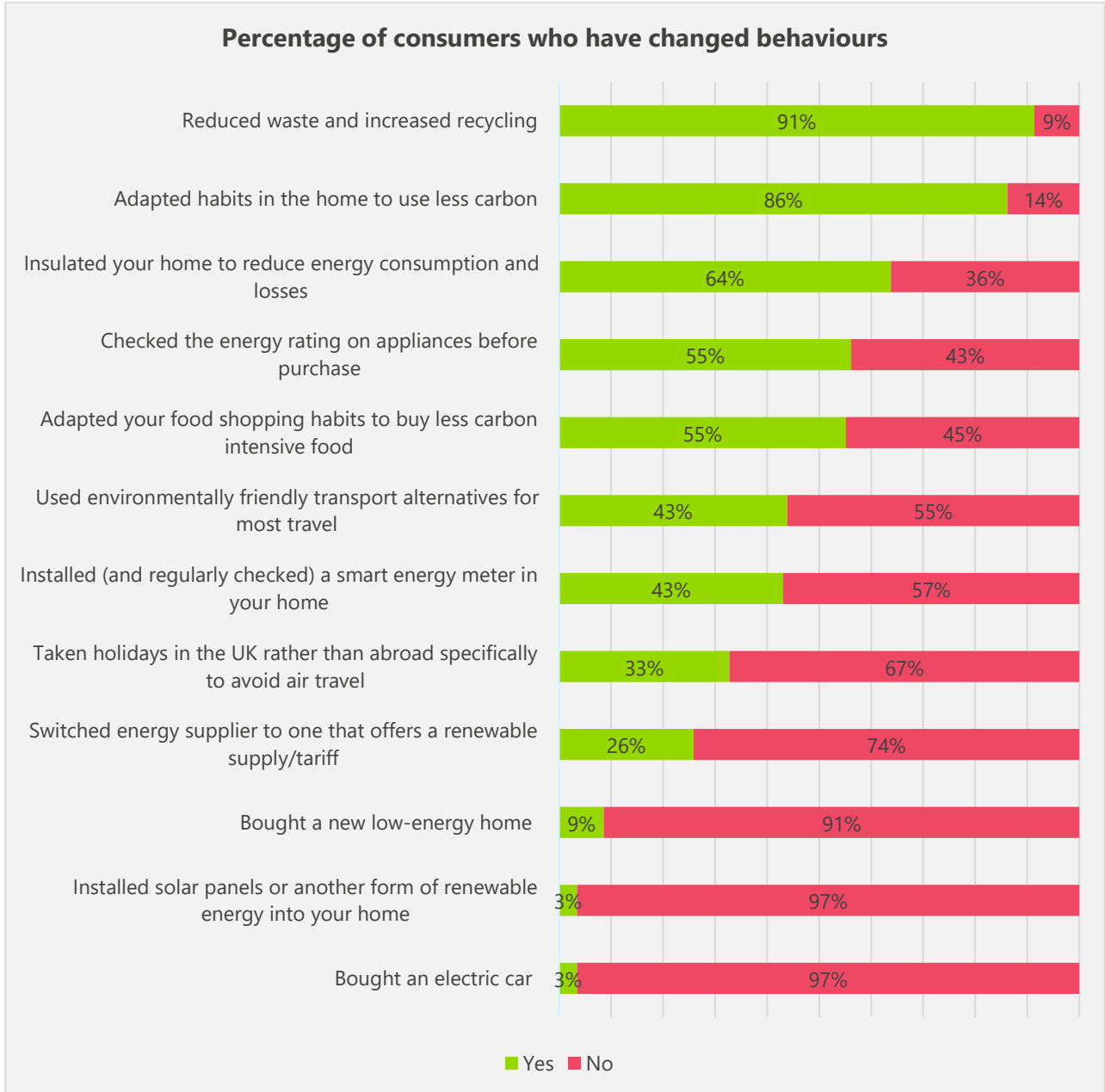
Figure C.2: Pre-session voting form: Views on which sectors contribute the most to carbon emissions



Base – 60; Multiple responses allowed

Consumers have undertaken a number of actions to reduce their carbon footprint. This shows that consumers are trying to change their behaviour, but there are still many steps that consumers have not yet adopted. Those that involve lower upfront or investment costs have a higher uptake.

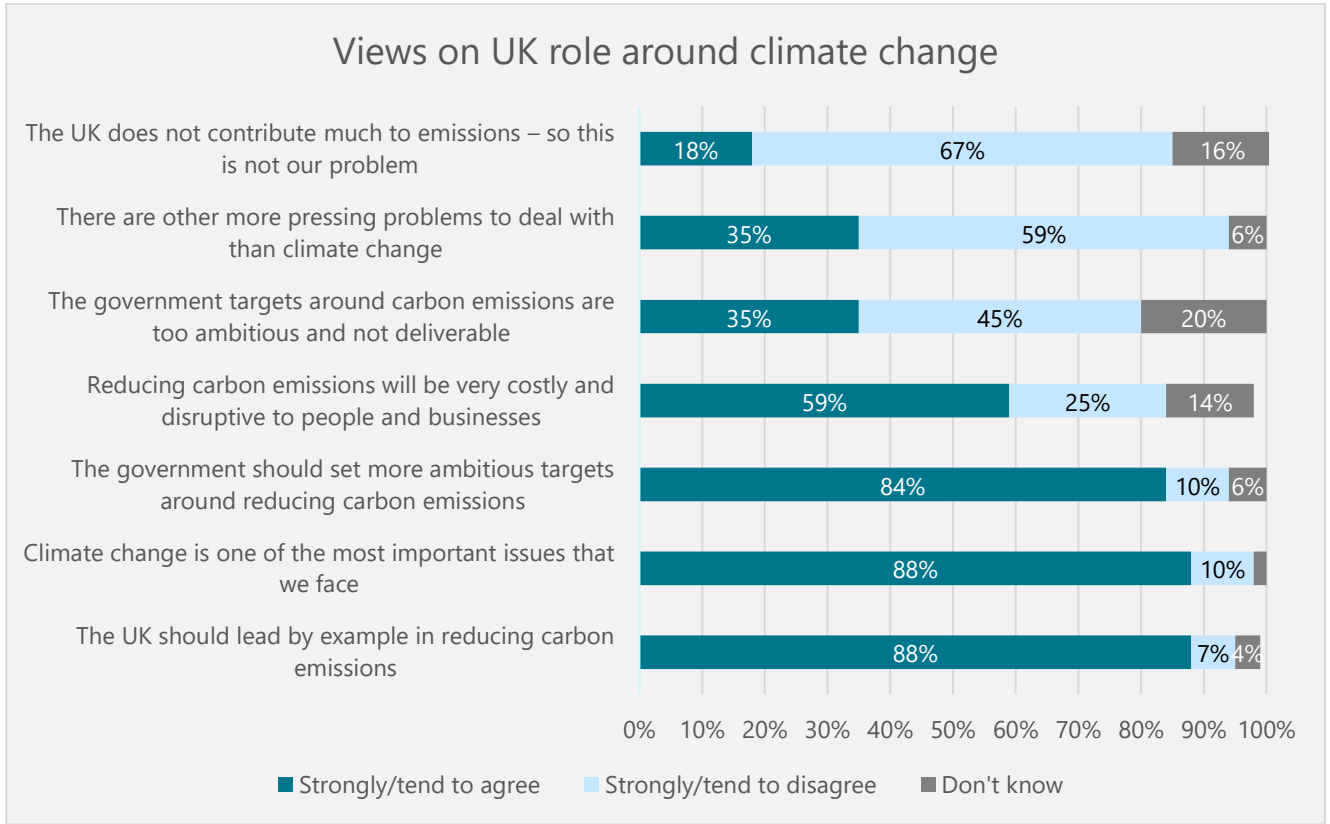
Figure C.3: Pre-session voting form: Actions undertaken to reduce carbon footprint



Base – 58; two people did not answer

Consumers want the UK to have ambitious targets and lead by example in reducing carbon emissions.

Figure C.4: Pre-session voting form: Views on UK’s climate change targets



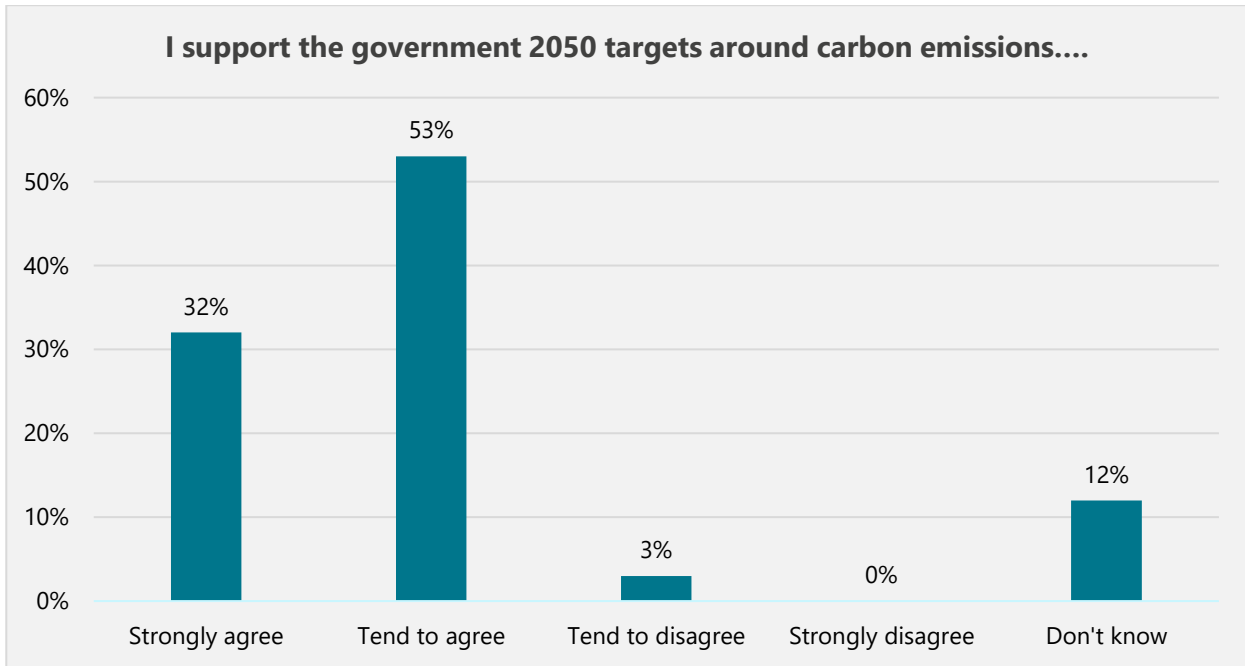
Base – 51; Nine people didn't answer

C.2 In-session views

During the course of the discussions, consumers were asked to provide their views/votes on topics as they were discussed. Responses to these questions are given below, which were asked after the groups had deliberated on the relevant issues unless stated otherwise.

This shows 85% of consumers support for the Government’s 2050 targets.

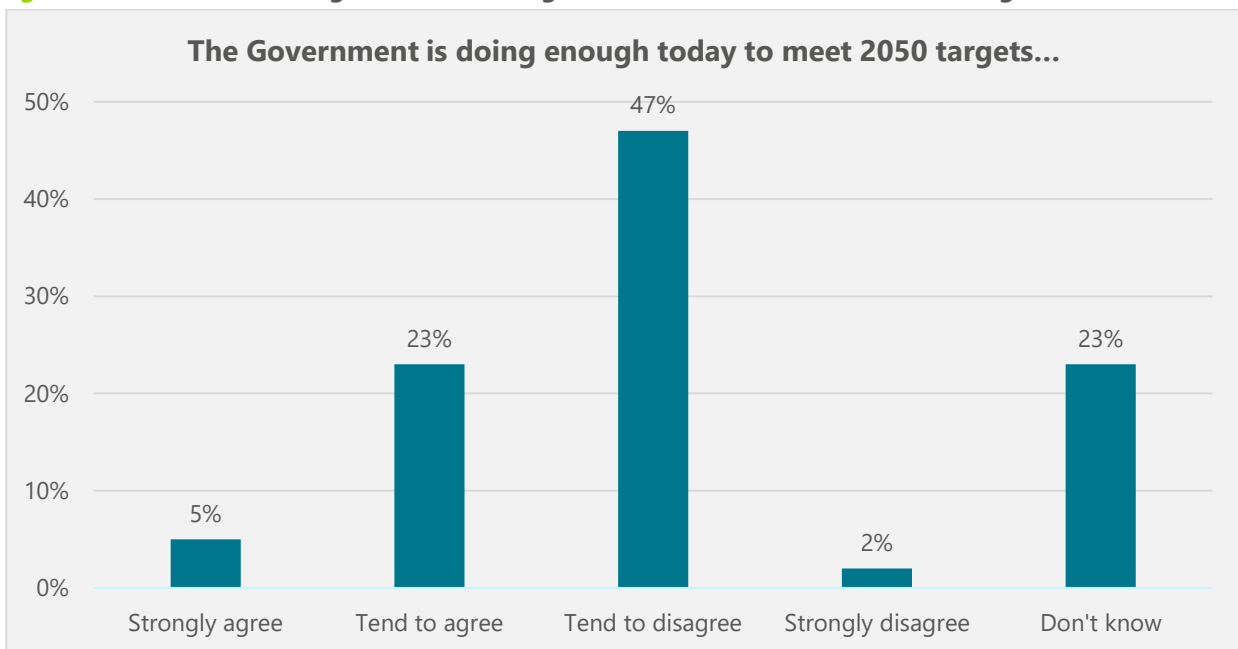
Figure C.5: In-session voting form: support for UK's 2050 targets



Base - 60

49% disagreed that the Government is doing enough to meet 2050 targets, and 23% were unsure.

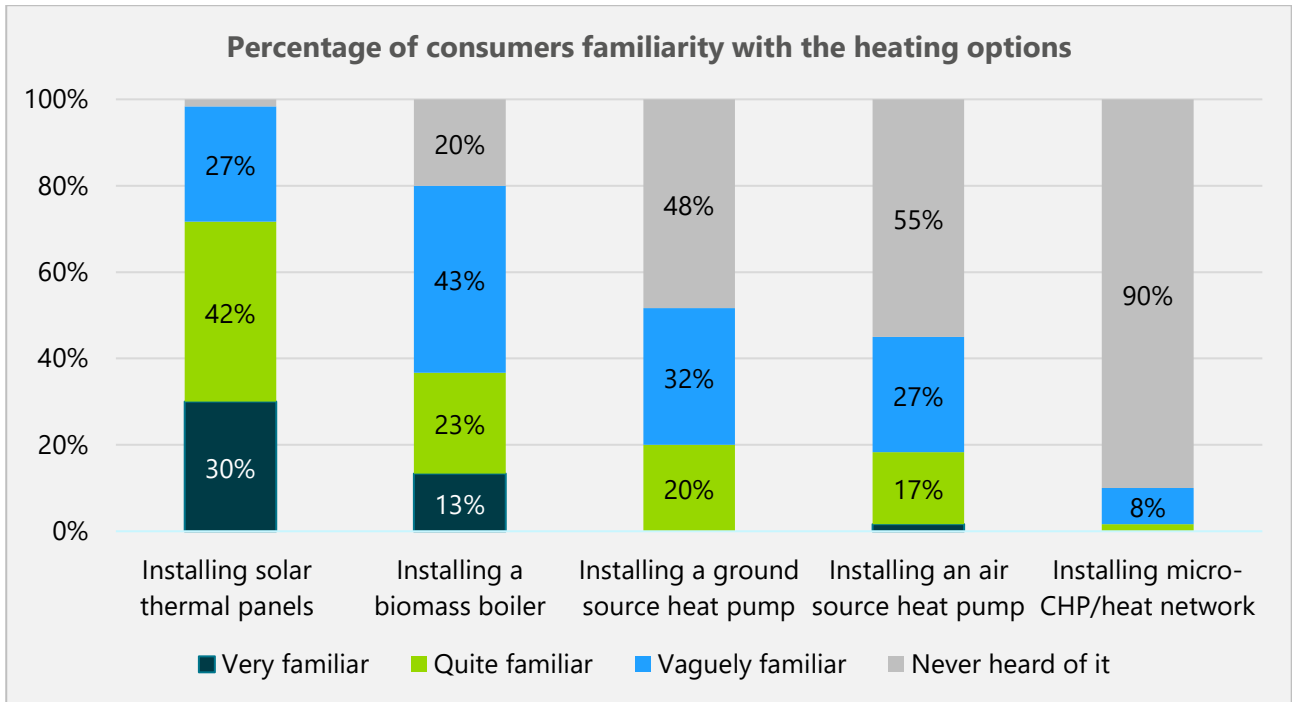
Figure C.6: In-session voting form: views on government actions to meet 2050 targets



Base - 60

Prior to seeing information on the heating options, consumers were asked to indicate their familiarity with existing heating options. There is low familiarity with all options. For example 37% indicated they were very or quite familiar with biomass boilers, 20% were very or quite familiar with ground source heat pumps, 18% were very or quite familiar with air source heat pumps, and only 2% were very or quite familiar with micro-generation. Solar thermal panels may be the exception (72% were very or quite familiar), but from the discussions it seemed that consumers were indicating their familiarity with solar panels on homes in general.

Figure C.7: In-session voting form: familiarity with heating options

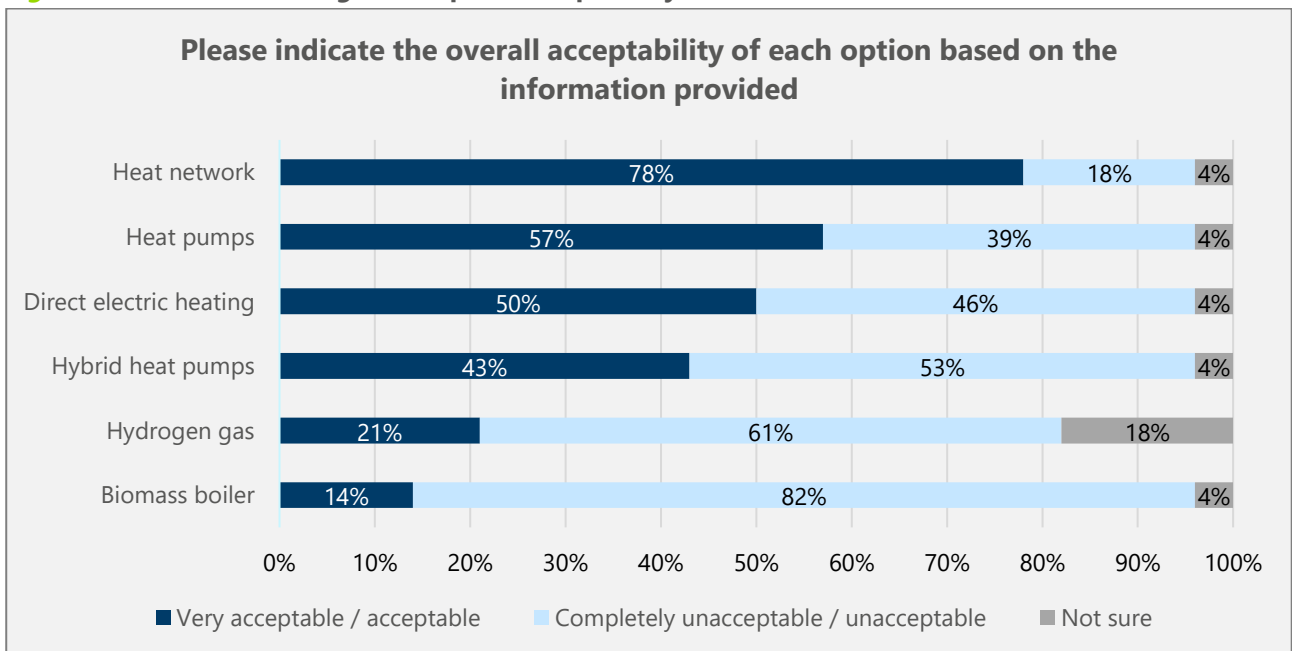


Note: this question was asked prior to information on the options being shown to gauge familiarity.

Base – 60

After seeing and discussing the options in turn, consumers were asked to state which options are acceptable to them and their household - based on the information provided. 79% found heat networks to be acceptable, and only 14% found biomass boilers to be acceptable. 57% found heat pumps to be acceptable; the hybrid heat pump was lower at 43%.

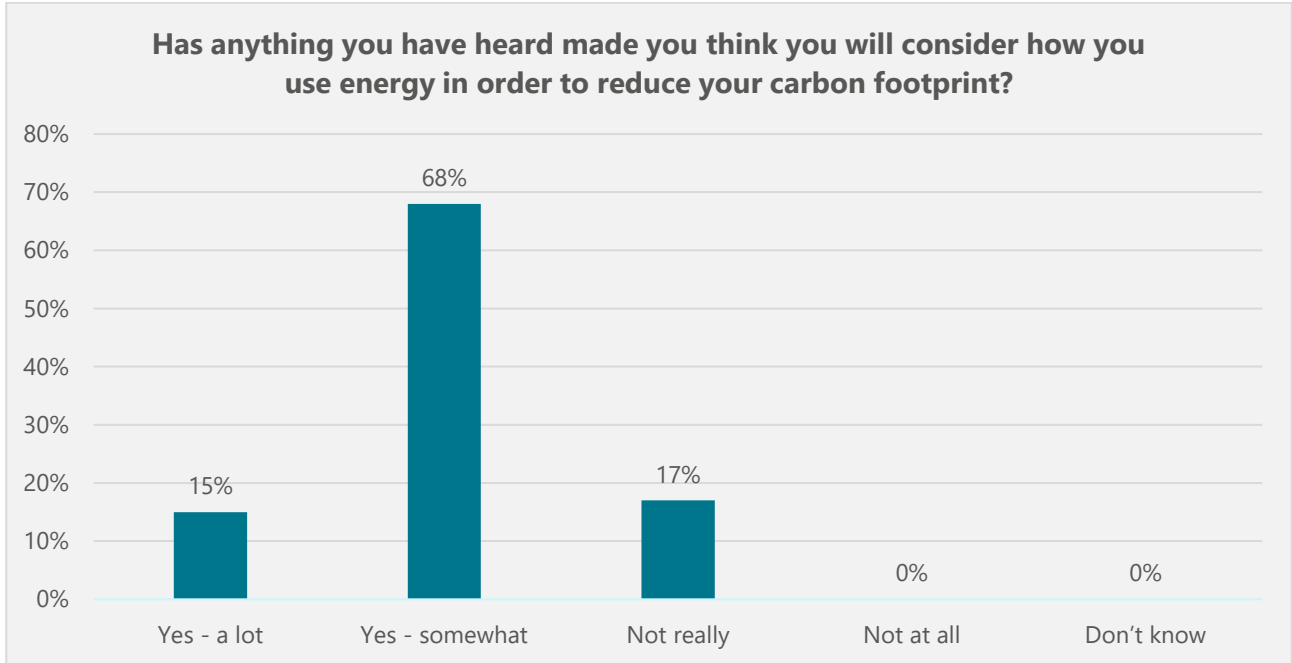
Figure C.8: In-session voting form: option acceptability



Base – 28 Acceptability only tested with phase 2 groups.

As the discussions were concluding, consumers were asked if they had heard anything that made them think differently about how they will use energy and heating in the future to reduce their carbon footprint more. 83% said they would reconsider their energy use.

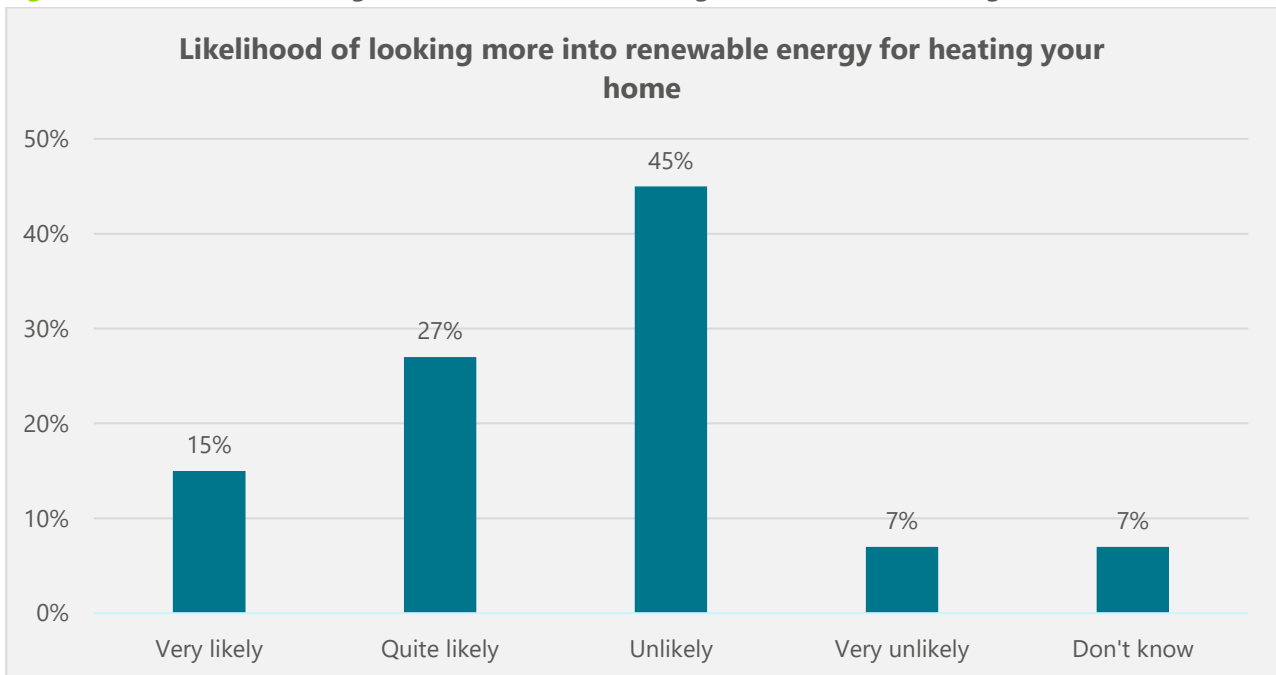
Figure C.9: In-session voting form: future use of energy to reduce carbon footprint



Base - 60

When asked about renewable heating in particular, 41% consumers indicated they would explore renewable heating. Those indicating they would not indicated their response was mostly due to the current cost of doing so – although would consider this when financial mechanisms for making the change are in place.

Figure C.10: In-session voting form: Likelihood of looking into renewable heating in the future

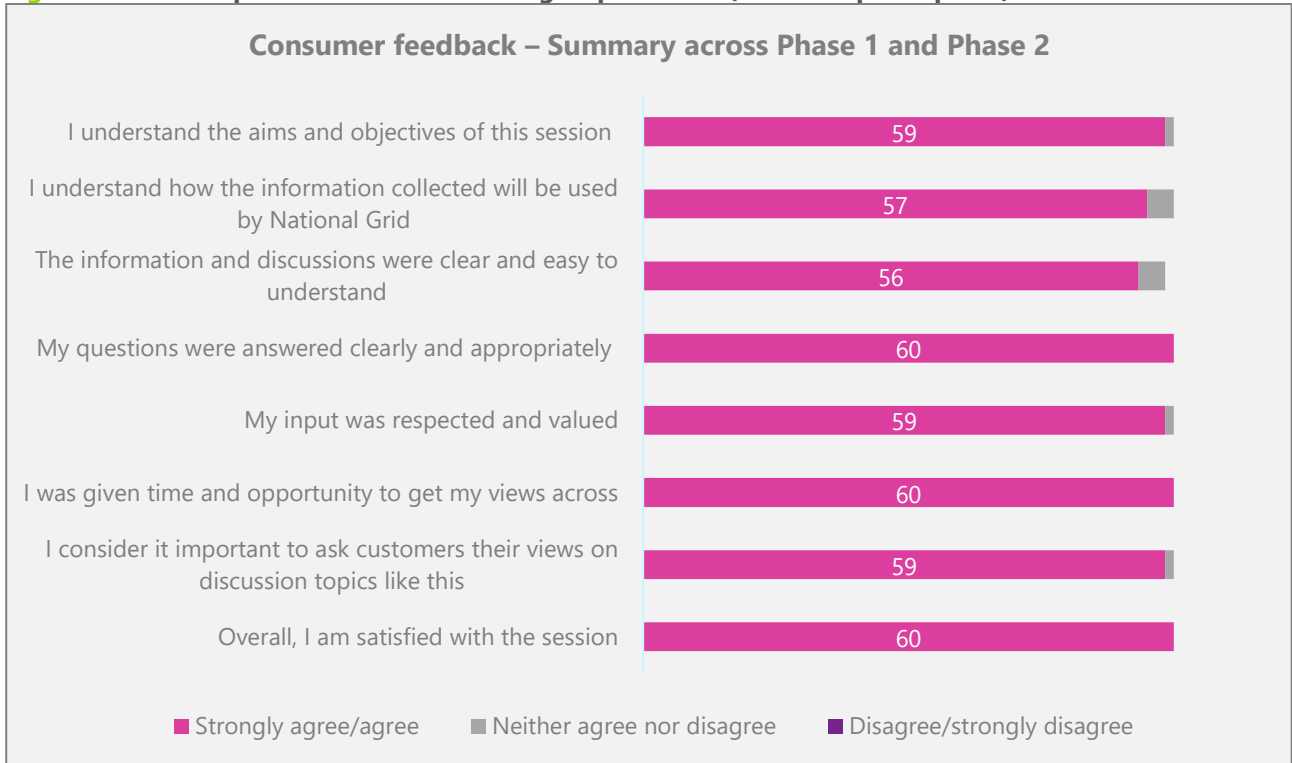


Base - 60

C.3 Post session evaluation

At the end of the session consumers were asked to evaluate the session. Consumer feedback collected across the eight groups which shows the positive views of the sessions were widely held.

Figure C.11: Participant evaluation of focus group sessions (out of 60 participants)



Appendix D: Project Files

Please note file materials cannot be downloaded from the PDF version of this report.

Please contact National Grid's Public Affairs & Policy Team if you would like further information on the material shared with participants.

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