Consumer attitudes towards decarbonisation and net zero

Findings from the Consumer First Panel
August 2020
Fieldwork in Nov 2019

ofgem

Making a positive difference
for energy consumers

REVEALING REALITY

Executive summary

In June 2019, Parliament went beyond the UK's existing commitment to an 80% reduction on 1990 emissions levels by legislating for a net zero greenhouse gas emissions target by 2050. As a nation, we've made significant progress in decarbonising our economy. Overall emissions have fallen by 40% since 1990; but this progress has been largely from changes that have not involved consumers changing their behaviour, notably decarbonisation of electricity supply.

If we are to meet our 2050 goals, changes will be needed to how homes are heated, and transport needs to transform. Consumers will have a role to play in engaging with new technologies and taking action to support decarbonisation.

In February 2020 Ofgem published its Decarbonisation Action Plan[1] which sets out how it will help achieve decarbonisation at the lowest cost to consumers. As a first step in understanding the current consumer mindset, Ofgem commissioned Revealing Reality to conduct research into the attitudes of energy consumers towards decarbonisation and net zero using its Customer First Panel. This research took place in November 2019.

Ofgem has run the Consumer First Panel for the past 11 years, engaging with everyday energy consumers to gain an insight into their needs, values and priorities. For our conversation about decarbonisation, the research team went to Falkirk, Hemel Hempstead, Blackpool and Swansea reaching 90 consumers in total.

NB: Since this research was conducted, Great Britain has entered an uncertain period brought about by the Covid-19 pandemic. This is very likely to impact on consumers' priorities going forward in number of different areas. Fieldwork for this research was undertaken in November 2019, before Covid-19. Therefore all sessions were conducted in face to face group settings.

Key findings

The sessions provided a baseline for current consumer understanding of what decarbonisation means, and to identify any attitudinal and behavioural barriers that need to be overcome in order to reach net zero from their perspective. We also wanted to uncover how consumers see their own and others' roles in helping the UK achieve targets. The following is a summary of what was learned.

Awareness

Many of the consumers we spoke to did not know about the need to decarbonise or about the 2050 target. While they know about certain measures with regards to recycling and transport, individuals rarely spontaneously link sustainability to their household energy consumption.

Once the targets were explained, most people were enthusiastic about meeting them. However, some were unconvinced that the target is achievable. While most were somewhat concerned about their impact on the environment more widely, they were also apprehensive about what this might mean for their current lifestyles. Questions people had included:

- How are we going to do it?
- What does it mean for me?
- What kinds of change are going to be needed?
- How easy are these changes going to be to maintain over time?
- Are these changes genuinely 'green' or do they have environmental impacts of their own?

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[1] https://www.ofgem.gov.uk/publications-and-updates/ofgem-s-decarbonisation-action-plan

Responsibility

Consumers do not feel ultimately responsible for reaching net zero, although some recognise that they will need to play some part in doing so. Most default towards saying the government and energy companies have a much bigger role to play in making it happen—although they did not always trust that either would do so.

Some feel like they are already doing their bit for the environment generally, through recycling or reducing plastic waste, but in their day-to-day lives they are not explicitly thinking about how their behaviour impacts the environment. When it comes to changing the way they use energy, they are unsure what steps they should take. They also worry about other people (and nations) not pulling their weight, making any significant changes they make themselves a waste of time.

Taking action

Despite acknowledging some need for change on their own part, for some, decarbonisation is not a high enough priority for them to make behavioural changes. The biggest concern consumers have is how much any changes would cost them financially. Many feel they are very unlikely to make changes to their current energy supply or system without support or guidance.

Overall, while most people are supportive of the targets and are aware things need to change in order to prevent further climate change, they are put off by the impact that decarbonising might have on their own lives in the short term.

Conclusions

The research revealed that many consumers support, in theory, societal change that leads to decarbonisation yet current levels of awareness and participation in actions required to support decarbonisation are low. It suggests that consumers are just at the start of the journey in understanding and accepting that they have a role to play if the UK is to achieve its net zero goals. The findings from this report provide the consumer context on which Ofgem and others can build on going forward, highlighting the potential barriers as Ofgem and government think about the levers needed to move the energy consumer along on this journey.

Introduction

The UK government's decision to commit to a target of net zero emissions by 2050 signals the urgency with which the threat of climate change needs to be tackled. Yet while warnings of the impact of carbon emissions rises regularly dominate the news, it remains unclear to what degree the British public is aware of the extent of change needed, and how that might be achieved.

As the energy regulator, Ofgem has a crucial role to play in helping the UK to decarbonise its economy. Meeting the 2050 target will require a substantial shift in the way energy is generated and used. Through household heating, vehicle emissions, electricity use and more, the British public has a major impact on national consumption and public opinion can be a powerful force in pushing the UK in the right direction.

Moving energy consumers along a trajectory from **awareness** of the issue to an acceptance of some **responsibility** would be a good start to support the necessary change. Engaging the public in the net zero target will be an essential part.

In February 2020 Ofgem published its Decarbonisation Action Plan which sets out the actions it will take to help achieve decarbonisation at the lowest cost to consumers. Ofgem will use their expertise and knowledge to inform and support energy companies, government and others.

This research helps Ofgem to understand more about current levels of awareness of sustainability in relation to energy amongst energy consumers, and to identify what consumers may feel are the barriers to change.

Reaching 'net zero'

> **What is net zero?** When something uses and releases the same amount of greenhouse gases it is 'net zero'. For a country, being net zero means absorbing the same amount of these greenhouse gas emissions as it emits into the atmosphere (for instance, through trees). Overall, this means there is no impact on the amount of greenhouse gases in the atmosphere.

The legislation passed on 27th June 2019 aimed at meeting net zero emissions by 2050 signals a commitment to ending its contribution to global warming.

While the UK has already reduced emissions by over 40% since 1990[2], significant work still needs to be done. The Committee on Climate Change (CCC) has outlined a range of proposed changes to the energy sector, many of them substantial, to meet the 2050 target. They include energy efficiency, the shift to low-carbon power, roll-out of electric vehicles and some low carbon heating.

Importantly, many of these link directly to household consumption, indicating that a significant behavioural shift needs to be undertaken by consumers.[3] It further notes: "Active engagement from households to reduce their carbon footprint will be vital" to achieving the targets.

Engaging domestic energy consumers across Great Britain[3]

Ofgem has run the Consumer First Panel for the past 11 years, engaging with everyday energy consumers to gain an insight into their needs, values and priorities. The Panel allows Ofgem to consult with consumers when developing new policies, to understand their views on key market issues and explore their attitudes and behaviour to shape ongoing policy design.

It centres on a series of deliberative events across Great Britain, bringing together nearly 100 people to explain and discuss some of the key concepts, policies and consumer behaviours around energy. For our conversation

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[2] https://www.ofgem.gov.uk/publications-and-updates/ofgem-s-decarbonisation-action-plan

[3] https://www.theccc.org.uk/wp-content/uploads/2019/05/Net-Zero-The-UKs-contribution-to-stopping-global-warming.pdf

about decarbonisation, the research team went to Falkirk, Hemel Hempstead, Blackpool and Swansea. The groups in each location included a variety of consumers with differing levels of engagement in the energy market, as well as those of different ages, incomes and employment.

The technical nature of the topic meant the deliberative approach was necessary, enabling Panellists to ask questions, hear different viewpoints and explore understanding and attitudes around decarbonisation together. The research team captured first thoughts, before explaining the government targets and various alternative home heating options as a way of stimulating reactions to potential changes in their homes. Using simple language, stimulus was developed to help people visualise and understand the more technical concepts and ascertain how different groups of consumers understood and could engage with the topics[4].

This report sets out the key findings on current consumer attitudes and behaviours in relation to energy and decarbonisation, covering people's awareness, sense of responsibility and willingness to change their behaviour.

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[4] Fieldwork for this research was undertaken in November 2019, before Covid-19. Therefore all sessions were conducted in face to face group settings.

Are consumers aware of decarbonisation?

There is a lack of public awareness regarding the direct link between energy consumption and high greenhouse gas emissions. This is a key obstacle in the way of reaching the 2050 net zero target. Change will only start to be achieved when awareness of the need to consume energy in a more sustainable way grows and is widely understood.

There is limited awareness of the link between reducing greenhouse gas emissions and individual energy consumption

Sustainability in general was high on people's radars. Most respondents defined sustainability in a fairly general way, such as "*being green, caring about the environment*" (D, Hemel Hempstead). Some spoke more specifically about the need to avoid the depletion of natural resources: *"It's about using things that aren't going to run out"* (L, Blackpool). Most Panellists felt able to talk quite confidently about the topic.

There was consensus that people are increasingly aware of the need to be sustainable—many people were reading more about sustainability in the media, watching documentaries or having conversations with their children after school. Some people even felt under pressure from their children to be more environmentally friendly: *"My son's entire rugby team have gone vegan"* (B, Swansea).

When asked which sectors have a big role to play in protecting the environment, recycling, reducing plastics and transport were often at the forefront of people's minds.

Many were aware of their consumption of plastic and were recycling more at home, perhaps because it has been a high-profile topic which has had a big impact on people's everyday habits. As M, from Hemel Hempstead, noted: "*I think we've gotten better, especially with things like recycling…That's a massive thing now.*"

People across the groups made comments such as: "*I think sustainability is something we [as consumers] all think a lot more about now…like with the plastic bags when you go shopping.*" (A, Hemel Hempstead), and *"I think about recycling everyday"* (C, Falkirk).

However, individuals rarely spontaneously linked sustainability to their household energy consumption. There was little unprompted discussion about how their homes could be heated and powered in a more sustainable way.

> " **I'm just thinking about the cost more than the environment.**
>
> (N, Falkirk) "

When people did reflect on their own energy consumption, they often spoke about the amount of electricity their household was consuming through devices and appliances. For example, many people spoke about how their children frequently left lights on, or how they try to switch appliances off before they went on holiday: *"I flick the switch off for the kettle, or the toaster, or washing machine"* (R, Blackpool).

While many made a conscious effort to do things such as turn off the lights when they weren't in a room, this was more often than not driven by their desire to keep their energy bills low, rather than an acute awareness of environmental impact.

> *"I'm just thinking about the cost more than anything."* (N, Falkirk)

In general, people were not aware of the impact their current heating systems were having on the environment. The majority of those we spoke to used gas boilers and few were aware of any alternatives to their current heating system. As J from Blackpool said, "*The only things I know of around other heating systems are halogen bulbs and underfloor heating.*"

The 2050 net zero target is not talked about

The passing of the 2050 target legislation made the UK the first major economy to introduce laws around zero carbon commitments. Most people we spoke to had not heard of these targets: "*We didn't even know about it. So if it's gonna happen we need to know about it*" (S, Falkirk). Often, this legislation was not included in the news people interacted with and respondents felt that the facts were not widely publicised.

Those who had heard of the target were unaware of what this might mean in practice or what was being done to reach these targets. Several people asked things along the lines of: "*Are we as a country currently doing anything about decarbonisation?*" (T, Blackpool).

This lack of awareness often led to scepticism around whether the target could be achieved. C in Swansea was concerned that, "*It's just another target that's not going to be met.*" For some people, there was a lack of trust that those in power would take targets seriously. H in Falkirk commented that, "*I think we'll wait until 2049 to see if they're serious about it.*"

Several compared the target to the moving of the Brexit deadline and felt that the government was not ready. "*Will this target be like leaving the EU on the 31st of October?*" (F, Hemel Hempstead).

Issues such as decarbonisation had, some individuals said, been used as a 'political football' that had been passed between different parties to capture public attention. This was cause for concern for some who felt that this mentality, and lack of government ownership, would lead to poor results.

> "*It's not a lot of time, and how much impact will being carbon neutral have? They've put targets but they cut funding for renewables.*" (M, Falkirk)

The lack of awareness often led to scepticism around whether the target could be achieved

It was also unclear to people what exactly would happen if this target was not met, or who would be at fault. This sentiment was expressed by R in Blackpool: "*Is that an actual target? What happens if the UK doesn't meet it?*"

Most people were keen that the target should be met and felt that, on paper, it was a good idea. However, people were apprehensive about what this might mean for their current lifestyles. Reactions included:

> "*Will we have to have zero food in plastic packaging?*" (J, Hemel Hempstead)

> "*We would have to change the whole world. We need a drastic change to our lifestyles*" (H, Swansea)

Overall, most people were guessing at how achievable the target was. People were unsure of the trajectory to achieve the goal of net zero by 2050. They were unable to see how we, as a society, could go from where we are currently, to where we need to be, particularly as they couldn't picture the steps needed to get there. For example, F in Hemel Hempstead asked, "*Are they scared to say how far off the UK is because we're so far off?*" Several people agreed with a respondent in Falkirk who said "*I've got nothing to compare it with.*"

There were also concerns that time was running out, especially given the scale of the challenge. C in Blackpool suggested that, "*We won't make that target; people are stuck in their ways.*" Similarly, S in Hemel Hempstead pointed to the difficulty of motivating people to make changes now when they may not see the results for a long time, "*Who's going to care about what happens 20 years from now?*"

There was a similar lack of understanding around what they could do to help reach these targets, and therefore, people wanted more information. One respondent said: "*It's hard to know how to change when you don't know your own carbon footprint*" (B, Falkirk).

Questions they asked included:

- How are we going to do it?
- What does it mean for me?
- What kind of change is going to be needed?
- Are we going to be able to maintain any changes we make into the future?

- Are these changes genuinely 'green' (i.e. do changes have their own negative environmental impacts)?

Some people have knowledge about renewable electricity generation

Despite the tendency for conversations about sustainability to focus on car emissions, recycling or plastics, several people could, when prompted, speak confidently about the basic details of wind farms and other renewable energy sources.

> "*In Wales, our (renewable) energy is already being harnessed… wind power, tidal lagoon. It's free energy but it might take years to get the money back from installing everything*" (C, Swansea).

In some cases, dependent on local area, people were aware of ways in which we, as a society, were working towards using more renewable energy sources. For example, Panellists in Swansea were aware of the potential of tidal power and those in Falkirk were aware of wind turbines in the vicinity. People felt these initiatives were positive, however it was unclear to them how much of an impact they were currently having on the UK's ability to use cleaner energy.

A small number of those we spoke to had solar panels installed on their homes. Some mentioned that their choice to move to solar had been around the time in which people were given subsidies for choosing this option. For example, A in Swansea noted that, "*I put solar panels on my previous house. I paid £5000. It would have paid for itself if I had stayed there because I was being paid £750 a year for the extra energy I was producing. It helped me sell my house too.*"

However, those that did not have alternate energy supplies were often unaware of how much energy could be generated by these sources and were sceptical about the impact this might have on their current energy supply. As D from Hemel Hempstead said, "*You've got to use them [solar panels] for years and years before you make any savings. It's a long-term investment. What if you're renting, or living in a flat, or in an old house where you're not allowed to put them on the roof?*"

Similar feelings were present among other individuals, often stemming from a lack of knowledge beyond the basic details of the technology.

> "*If we were to fully switch over to solar power, would that actually even cater for the business and homes and hospitals?*" (S, Hemel Hempstead)

> "*I see things about solar panels. You can sell back to the grid. But they stopped giving subsidies…*" (V, Swansea)

People felt that there needed to be more information about what they could do to use energy more sustainably in their homes. They also wanted evidence that any changes that they could make would be positively contributing towards net zero.

> ### Summary of key points
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> - People mainly thought about sustainability in terms of recycling, food consumption or reducing transport usage. Few considered the link between reducing emissions and individual energy use.
> - In theory, people were open to reducing their own energy consumption, but weren't always sure how, and the importance of this was often trumped by considerations of cost.
> - Few knew about the 2050 net zero target. There was scepticism about whether the target could be achieved and concern about what the target would mean for people's current lifestyles.
> - For consumers to play their part in reaching the net zero target, people need to be aware of the necessity to consume energy more sustainably, such as heating systems that have reduced emissions and using less energy overall, and they require information on how to alter their behaviour to do so.

Who do consumers think should be responsible?

Once aware of the targets, there was a consensus that "something" needs to change in order to reach net zero. Many drew on evidence they had seen when watching documentaries, which stressed the need to be mindful of resources, or in some cases, in the form of pressure from respondents' children who were more engaged in environmental issues. However, what this "something" might look like was unclear, and when thoughts turned towards responsibility, people expressed concerns about who this would fall on.

'Doing my bit for the environment' seems to be enough

For the majority of people, the causes and impact of climate change felt removed from day-to-day life. Across the four locations there was a feeling that it was hard to understand how their current behaviours contribute towards climate change because there were few tangible indications of its impact on their lives. They recognised they were removed from it: *"We [as consumers] don't acknowledge it [climate change] because we haven't experienced it"* (D, Blackpool). Another said: *"It needs to be visible"* (R, Blackpool). Many people admitted they didn't think about carbon emissions at all. The lack of awareness of how they were contributing to the problem helped to reduce the amount of responsibility they felt, and individuals often felt that the changes they could potentially make would have no impact at all.

Understandably, most individuals were more concerned about the stresses of daily life and didn't have the time or space to think about such far removed issues. For example, C in Falkirk commented that, *"I've got other things to worry about [than reducing greenhouse gas emissions]."* L, in Hemel Hempstead, expressed the widely held view that taking steps to reduce the impacts of climate change rarely fitted in with daily routine: *"I can't walk my kids six miles to school."*

As previously noted, many felt that they had 'done their bit' once they had taken basic steps towards limiting their environmental impact. These included reducing plastic, recycling and eating less meat. Taking on responsibility for sustainability in the energy market felt too removed and too much of an additional effort. An individual in Hemel Hempstead commented: *"We can do the little things, small everyday tasks.*" However, consumers were often sceptical about what these "little things" could achieve in the long-term.

People often felt they were already taking steps to limit their environmental impact

In some areas, there was a feeling that people could only do so much without being prompted, or given additional information, on what other changes they could make. L, from Blackpool, highlighted that small things could be done by consumers, *"We all do our bit with home improvements—like, we all use energy efficient lightbulbs."* However, beyond basic actions individuals were unsure what to do next. This sentiment was also seen in Falkirk, where S highlighted that, *"People can't make a decision when they don't know about what's out there."*

People think 'the government' should be responsible for meeting the net zero target

Initially in the conversation, a large proportion of people felt that overall responsibility for reaching net zero should lie with the government. They couldn't articulate which department/s or body/ies but overall felt an 'official body' should be responsible—and therefore people defaulted to 'the government'. C in Hemel Hempstead commented that, "*Everyone has a responsibility, but it needs to come from the top*." This view was echoed across the four areas, with many unsure of who else could be responsible.

A major reason for directing responsibility at the government was that those in power had chosen the targets, instead of the consumers themselves. *"It's the government who have committed to it [net zero] so they should be responsible for it"* (D, Hemel Hempstead). This was echoed across the locations. In Falkirk, D asserted: "*They set the targets, so they need to do something, like with plastic bags.*"

Many people felt that the responsibility of the government was to tell people what they could be doing, as well as what was already being done, so that consumers could be more informed. C, from Swansea, said: *"The government, they need to make it easy to understand."* There was some consensus that the motivation behind past health-related initiatives—for example, encouraging people to eat "five a day" or to quit smoking—should be harnessed to make people use energy in a more sustainable way. J in Falkirk highlighted how the UK would be "*more likely to get better results if you empower people rather than force them".*

This idea of the government working in partnership with consumers to help ordinary people use energy in a more efficient way was echoed by an individual in Swansea: "*I guess we say the government should be responsible, but the government is influenced by us…so we would need to vote and protest. Society needs to show how much they want to make the change*." However, as of yet, respondents felt this partnership had not been established and few people had any suggestion of how this might work.

Individuals also felt that there needed to be a level of trust in the commitment of both the government and energy companies to reach net zero. People felt that energy companies "should promote people to go the right way" when it comes to choosing greener energy sources. A number of individuals felt that the government needed to push energy companies to do more to reach the target, either by force or through support.

> "*They're the ones who can say to companies, this is the way it should be done…*" (C, Swansea)

> *"The responsibility also lies with the energy companies—they need backing from the government."* (T, Hemel Hempstead)

'I won't make difficult changes unless we all do'

Across the four locations, people commented how individual consumers are acting, and will continue to act, in their own interest as opposed to the 'common good'. Respondents frequently voiced their concerns about making changes when they perceived that most of the population did not care and would not be doing so. D in Hemel Hempstead suggested that most people don't care about issues such as decarbonisation: *"Fifty percent of people don't vote so 50 percent of people don't care".* Similar to many others, R in Swansea echoed this sentiment: *"There's a huge amount of people who don't care. We need someone with authority.*" People felt that they should not have to shoulder responsibility for issues such as decarbonisation if others were not doing the same.

> " **Unless everyone's on board we're fighting a losing battle**
>
> (R, Swansea) "

As part of the Panel sessions, consumers were shown various alternative heating options[5] and asked what the positives and negatives could be. These systems included air source heat pumps, district heating networks and the use of hydrogen in the grid. When thinking about the potential for these options, respondents felt that it was unlikely that everyone will choose to make these changes. This then raised the question of why only a few people should have to do so. A number commented that at

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[5] Materials used to explain decarbonisation and heating options are included in Annex 1 at the end of this document.

present, the price of alternative heating options was too high and the responsibility of installing such technology should not be placed on ordinary people. They worried this would be not be spread equally: *"Will rich people do their bit too?"* (I, Falkirk).

> *"It [change] will have to be well above our stations."* (S, Hemel Hempstead)

Several individuals also voiced their concern for how some large companies did not prioritise making changes, meaning that anything individual consumers did would make little difference.

> *"It's down to big corporate companies to change these things. We don't really know what's making it better or worse."* (C Swansea)

H in Falkirk suggested that, *"Large companies will only be driven by financial inducement…"* with regard to contributing to the net zero target. B in Swansea felt that consumers should put pressure on certain companies for change to happen. For example, *"We would need to put pressure on the pension companies to stop investing in oil."*

A number of respondents also thought that where they lived influenced their level of responsibility. In Falkirk for example, some felt that doing anything locally would make such a small difference compared to somewhere like London. They felt that in terms of carbon emissions, there was little point trying to make changes to energy use or transport because larger cities would have a much bigger impact on the overall target. For them, changes in Falkirk would not be significant enough.

Across the four locations, individuals pointed to larger countries, in particular the USA and China, as impacting climate change on a much larger scale. They queried why the burden of changes in energy consumption doesn't fall proportionately on the biggest emitters. Individuals felt that it was not fair or effective to ask people such as them to change when other nations around the world were doing so little to contribute: *"I'm sceptical. How can we make any significant changes as a consumer, especially when countries like the US have a completely different outlook?"* (I, Blackpool). When they agreed change was needed, they wanted all energy consumers to be moving forward simultaneously: *"Unless everyone's onboard we're fighting a losing battle"* (R, Swansea).

> ### ❯ Summary of key points
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> - Issues such as climate change and decarbonisation felt too far removed from everyday life. This made it hard for people to see that they could have a role in reaching net zero.
> - There was a sense that responsibility for reaching the target lies with the government. However, most acknowledged they had a part to play in reaching the target, if they were better informed.
> - People felt like they were already doing their bit for the environment, such as by recycling more, even if this was not specifically related to energy usage. They were often unsure what else they could do. They worried about other people (and nations) not pulling their weight.
> - To help ensure that consumers play their role, most said they needed to feel reassured that everyone is sharing responsibility. This includes businesses, other countries and the rest of the population.

Are consumers willing to take action?

People mostly acknowledged that consumers should have some part to play in reducing carbon emissions, if they are supported to do so. They talked about several barriers when thinking about making a change—the biggest of these being perceived financial cost—and felt they would need a push to do so.

The route to net zero requires a lot of change to current infrastructure

Across the Panel, respondents struggled to picture what reaching net zero carbon emissions might look like in practice. Many felt the level of change needed would be huge and wouldn't be easy.

> "*We need to think about time… change takes a lot of time… it needs to be able to trickle through*" (D, Hemel Hempstead)

> ## "
> ### It's all very well saying that we should use our car less, but public transport is rubbish
> **(G, Swansea)**
> "

Some felt that current infrastructure, particularly the quality of public transport and minimal charging options for electric vehicles, wouldn't allow for people to shift towards a more sustainable lifestyle. Therefore, they were sceptical about our ability to achieve the targets. One respondent from Swansea highlighted this point by commenting that basic infrastructure, such as cycle paths and public transport, are not in place: "*It's all very well saying that we should use our car less, but public transport is rubbish. You can't cycle around Swansea. It's different to London.*" This attitude made it hard for people to see how more radical change could be implemented.

Some felt that our current energy network wouldn't be able to cope if there was a huge shift towards alternative energy sources, such as electricity. Many mentioned this in regard to the switch to electric vehicles. Further to this, they wondered where the UK would get this electricity from, and whether it would be green.

> "*With electric cars how do we produce the electricity long term? If everyone changed where would the electricity come from?*" (G, Blackpool)

Overall, people felt our current energy network needed too many changes before it could support new energy sources, and many couldn't envision what this might look like. People mainly referred to practical and visible infrastructure, such as electricity cables or public transport. This was often brought up in relation to the switch to electric vehicles. Some felt there needed to be more charging points and the vehicles needed to drive further and charge faster. One person travelled around the country for work and felt that the EV infrastructure wasn't in place to allow them to do this easily.

They worried that reforming our current systems would have a significant economic cost, both for all of society and themselves as individuals. Few felt they could afford it, and few felt it was their responsibility to pay for such changes, especially when they had little enthusiasm for them.

The perceived cost to the consumer was the biggest barrier to change

People were willing to acknowledge that they should have a role, if helped by the government, in reaching the 2050 targets. Some mentioned they would like to receive some sort of financial incentive from the government if they were to change their car, or their current heating system. Others felt that they would want to visibly see the benefit that making changes to their way of life had on the environment. For instance, one person mentioned that they would like something, perhaps on their smart meter, that told them their total household carbon emissions.

> **It's not just about the fact that it's challenging to the way we live, it's the cost of it all.**
>
> *(D, Falkirk)*

All in all, most individuals were put off by the thought that making a change to their current lifestyle would entail a high cost to them.

"It seems to me that 90% of people care about saving money, not the environment" (R, Blackpool)

Compared to decarbonisation, other priorities, such as financial cost, dominated people's thoughts when it came to their thinking about energy. Almost all were understandably preoccupied with how much they paid for their energy bills, as this was the main thing that affected them on a day-to-day basis.

Respondents assumed that any changes they would have to make—for example, switching to green tariffs or installing new heating systems—would be expensive for them personally.

While some had seen or heard of 'greener deals' or 'green suppliers', they lacked motivation to switch to that supplier unless they saw that the cost of their energy bills would be lower, and they often expected their bills to be higher overall. A participant in Hemel Hempstead had recently switched to a green supplier because they offered a financial incentive to sign up. She was aware they were supposed to be "more green", but this wasn't the reason why she picked them: *"I was on a green tariff. I only went for it because it was the cheaper option"* (M, Hemel Hempstead).

Most assumed that, generally, using energy generated from sustainable sources was more expensive than energy generated from other sources, or at least would be expensive in the short term. Few felt they could, or would be willing to, afford alternative heating sources like ground source heat pumps. Some people felt that it could potentially be unfair on lower income families who might be affected by a proportionally higher financial impact of high heating costs.

Most assumed that they would encounter a large financial cost, particularly in the short term

Many were unwilling to pay a cost upfront, even with the knowledge that they might save more money in the long term. This was spoken about most frequently in relation to solar panels. Many felt that the initial investment was too much to warrant them investing in them, especially for the lack of financial reward people felt they would gain in the long term—people felt it would be a worthless investment, particularly if they moved to a new house.

Some people expressed an interest in various alternative heating sources but would only change their current system if the cost was spread out over time or if it was incentivised.

> *"I'd be willing to pay about £2k for solar panels, but the average working family can't afford that."* (L, Hemel Hempstead)

Towards the end of the sessions, once the impact of carbon emissions had been discussed at more length, some people said they saw green energy as a worthwhile financial sacrifice – at least in theory. At this point, having considered the discussion, half of the Panellists in Swansea suggested that they would potentially pay a little more for their energy if they knew that it was green. In Blackpool, it was true for over half, provided costs were "reasonable".

People were hesitant about bearing the financial cost when they felt others wouldn't do the same

Some felt that energy companies would not be willing to pick up the cost of any changes needed to decarbonise unless they were able to gain significant financial incentive to do so. Many did not trust their current energy supplier to put the environment before profit. This was part of a wider distrust of energy suppliers. Some felt their supplier did not have their best interest at heart, having been penalised with cancellation fees or unexpectedly high bills in the past.

> *"I take things the energy companies say with a pinch of salt. I moved and they said my smart meter would still work but it didn't." (P, Swansea)*

Similarly, many people were sceptical about whether the government would invest in the changes necessary. Some commented that they felt the government cared more about cost than the climate. For instance, K from Hemel Hempstead, said: "*I don't think [the government] are particularly invested in it [climate change]…Look at how much money they've invested in HS2 rather than the climate.*"

Most were resistant to making changes to their energy use without financial support in the form of grants or subsidies. "*Would I consider solar panels now? Probably not. There's no financial incentive*" (M, Hemel Hempstead). The few who had made decisions to switch to solar panels had mainly done so for cost-saving purposes at a time when there had been government subsidies.

Many were sceptical about the willingness of others to pay for greener energy

Many also felt others would not be willing to pay extra for green energy when it came down to it, particularly when it came at the cost of things such as convenience and habit. Some mentioned that people were too used to being able to get in the car and go somewhere, or just turn on the lights when they needed and know that they would work. This assumed that any environmentally friendly transport or heating options would be disruptive and costly. As a result, they believed that cost would outweigh environmental benefit for many people.

> "*I think sustainability is a factor in how much energy we use but also the cost is a big factor.*" (C, Swansea)

> "*This is the impact of being short-sighted. That's what everyone's going to do, go for the cheapest deal at the time.*" (J, Falkirk)

People worried about the impact on their current lifestyles

Despite the scale of the challenge, people recognised that everyday consumers have a role to play in decarbonising. But for most people, decarbonisation was seen, on an individual level, as an obstacle that would require effort and sacrifice.

Many would be willing, in theory, to make small changes to their energy consuming behaviour. People pointed towards actions they were already familiar with, such as using energy saving lightbulbs, taking shorter showers or insulating their homes, as changes they could potentially make. A few people had done things like this already.

When it came to more substantial changes, such as installing new energy sources in their homes, many grew more reluctant. Some had heard horror stories from friends, while others did not see the benefit of doing so. C, in Swansea, had been put off buying solar panels after hearing from her friends that they were difficult to upkeep and produced little energy, saving her little to no money overall.

> *"I thought about getting them, but you hear some bad things and it just puts you off…I don't know if they're a good idea or not."* (C, Swansea)

Compatibility, reliability, inconvenience and the aesthetics of alternatives

When people were presented with alternatives to the way they heat their homes, they often anticipated several barriers. These related particularly to inconvenience, compatibility, aesthetics and reliability.

Beyond simply a matter of costs, the inconvenience of installing alternative heating systems was a big barrier for many. Some felt it could have an impact, albeit short-term, on their current situation—it might be noisy, dusty or dirty to install. There was a perception from some that they would need to pull up floorboards or rip down wallpaper to install their systems.

Many also felt that certain heating systems wouldn't work for everyone or for every property type. For instance, those living in flats or older houses might not have the same amount of choice when it comes to choosing an alternative. Those in rented accommodation were pessimistic about how motivated landlords who didn't live in the property would be to change heating systems. They feared the financial implications.

> *"You've got to use them for years and years before you make any savings. It's a long-term investment. What if you're renting, or living in a flat, or in an old house where you're not allowed to put them on the roof?"* (D, Hemel Hempstead)

The aesthetics of new heating systems also put a few people off making the change to more carbon neutral systems. Across the different sessions, some voiced concerns over the appearance of the heating systems. Elements people worried about most were the aesthetics of pipes indoors or having large fans outdoors. There were also concerns around the aesthetic impact of the installation of the systems on their homes—for instance, would their wallpaper be patchy?

> *"I'd probably need to redecorate. It [air source heat pump] looks really expensive and ugly."* (J, Hemel Hempstead)

Many felt they needed proof that these alternatives were 'greener' if they were going to change their heating sources

Most importantly, for some, was the impact the new systems might have on their supply—for example, what if district heating was to break? They worried about whether the alternative sources would supply enough energy to meet their demands. Some were concerned about whether they would be able to continue their current use of household energy consumption, with many fearful they wouldn't be able to get the same supply of hot water or heating instantly in their home.

> *"None of us are going to go back to being cold."* (M, Swansea)

> *"You can't ask people to be cold."* (H, Falkirk, reflecting that people would be wary of changes to heating)

They also worried about the reliability of these systems across the year and in different climates—for instance, whether the ground source heat pump would keep them warm enough in winter. This was fuelled further by a lack of knowledge around these heating systems.

>*"Would it take longer for my water to heat up? Would everyone get the same amount of heating if they're further away from the source?"* (V, Blackpool, discussing district heating networks)

Overall, many felt they needed proof that these alternatives were 'greener' if they were going to change their heating sources. Some raised concerns that the systems required a lot of carbon to manufacture and install and worried the overall environmental impact of the systems would be minimal—despite individuals spending significant time and money on them.

People were reluctant to be the first ones to adopt new behaviours

People felt like heating scenarios they had heard of before, such as solar panels and ground source heat pumps[6], were more reliable or acceptable options for their heating. Many had seen them in other people's properties—for example, friends who had had alternative heating systems installed and could therefore give personal testimonies, positive or negative. Even when they had concerns about these in terms of cost, reliability and convenience, they felt reassured by their familiarity with them.

For instance, one person in Falkirk said they were particularly worried about the cost and reliability of solar panels in Scotland and felt other options were more reliable and cost-effective. However, he felt he was most likely to pick solar panels out of the options he was given since his friend had them on his property, even if his experience wasn't overly positive.

>*"It feels like a step into the unknown…I'd rather know that it works first."* (L, Falkirk)

People were more likely to trust these personal accounts of heating options than any other information they were given or came across. If an alternative was familiar and understood by one person in the group, others were more accepting of the concept. This regularly included hydrogen options – and how boilers would need to be changed to make this happen – and district heating networks. This was often because the person could explain how it worked, or the benefit they had seen it could bring.

People were distrustful of new eco-friendly alternatives, and didn't want to be the first to switch to them

There was also widespread distrust about new 'eco' innovations. People were pessimistic about the environmental benefit of heating alternatives—many wondered whether they might install something and then be told it wasn't any better for the environment, such as what happened with diesel cars. This fuelled a reluctance to spend money on anything "too new"—people wanted to feel they could trust the new alternatives before they invested in them.

>*"I'd want to know all the facts and figures. How much would I have to pay and how much impact would that have"*- (W, Hemel Hempstead)

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[6] More detail on the heating options tested with the Panellists can be found in Annex 1.

Consumers need help to change their habits

Many were keen for *something* to be done in order to decarbonise but were often pessimistic about whether anything *would* be done by any of the players involved, including government and the energy industry.

> "*It's just got to happen, one way or another.*" (T, Swansea)

Many shared concerns about wanting to do something but not knowing where to start. This often centred around feeling they didn't have enough support to make decisions they might need to make. For instance, some mentioned there was a lack of education around alternatives, or more environmentally sustainable things they could be doing.

> *"We can't change it…people can't make a decision when they don't know about what's out there [in relation to alternative heating systems]."* (S, Falkirk)

Despite wanting to reduce the impact of climate change, the majority of people felt they were unlikely to make changes to their lives on their own initiative, be that reducing their energy consumption or changing their heating source. The reasons they brought up were habit and convenience. Many felt they had gotten too used to "just being able to turn the heating on when I want".

> "*We're not passionate enough to make a change.*" (A, Hemel Hempstead)

" We need more support to help us make the right decisions

(H, Hemel Hempstead) "

Equally, they thought other people around them would be the same.
Some felt that people had become "too lazy". They felt realistically most people would need an incentive or an obligation to make any significant efforts to decarbonise.

> *"There's not a big enough percentage of the world population that think we should do something about climate change"* (C, Blackpool)

> "*I want to do my bit, but we all need to do it, so it has to come from the government.*" (H, Falkirk)

Some people felt that in order for them to adopt changes, the push would need to come from government as they had the power to enforce certain behaviours. For instance, some felt the government could subsidise alternative heating systems or put further pressure on energy companies to invest in and fund alternative energy sources.

> **❯ Summary of key points**
> - Despite acknowledging some responsibility for change, people were unsure what steps were needed to get from where we are today to reaching net zero in 2050.
> - The biggest concern people had was how much any changes would cost them financially.
> - When people are presented with alternatives to the way they consume energy (particularly how they heat their homes), they often anticipate several barriers, relating especially to compatibility, reliability, inconvenience and aesthetics.
> - Many felt they were very unlikely to make changes to their current energy supply or system on their own and would need an incentive or an obligation to make any significant efforts to decarbonise.

Conclusion

To date, most of the progress in working towards the 2050 net zero emissions target has come from the decarbonisation of the UK's electricity supply. Moving forward, the consumer's role will need to grow, primarily through engagement with new technologies and taking action in areas like heating and transport.

The public are increasingly aware and supportive of the need to live more sustainably, with a particular emphasis on recycling, reducing plastic use and transport. Many people in this research had already changed, or were trying to change, their behaviour in these areas.

However, people have yet to make the link between wider sustainability goals and their household energy consumption. Though most have some knowledge of green electricity production (such as wind farms, solar panels, and hydroelectricity), only a few consciously make lifestyle decisions to reduce their environmental impact. A minority of those in this research had green energy tariffs, only a few had solar panels on their homes, and fewer still had purchased an electric vehicle. In general, the need for significant shifts in the way we heat our homes was far from people's minds.

People did, at least in theory, support societal change that would lead to decarbonisation. They were willing to make some changes in order to move towards this goal, as long as they received support to do so.

There are a number of barriers to overcome to enable consumers to play a role in decarbonisation, most notably low awareness of the goal itself. Consumers also struggled with a lack of clarity around what concrete measures the UK would put in place to reach the target, concerns around the perceived costs of more sustainable heating and transport options, and assumptions that not everyone would play an equal part in the decarbonisation process.

To ensure consumers are part of the journey to collectively decarbonise, greater awareness of the UK's ambitions and the 2050 target will be necessary. Consumers will also need support to recognise the role that they could play in decarbonisation, and to build their motivation to be involved. Finally, system design can also enable consumers to change their behaviour and make new choices, by ensuring that the energy system is built around the goal of decarbonisation.

Annex 1: Research materials

This insight was generated through a series of deliberative group events across Great Britain, bringing together 90 domestic consumers to explain and explore decarbonisation. The research team went to Falkirk, Hemel Hempstead, Blackpool and Swansea. The groups in each location included a variety of consumers with differing levels of engagement in the energy market, as well as those of different ages, incomes and employment.

Due to the technical nature of the topic, and the deliberative approach taken, after capturing respondents' first thoughts, the research team used a range of stimulus and materials to explain and discuss the core elements of decarbonisation.

The discussion had a focus on alternative home heating options as a way of stimulating reactions to potential changes in their homes. Here we include the materials used to present the alternative heating options to consumers to help them engage with and discuss the topic.

Alternative heating options

Consumers were asked about the following five heating options. These were rotated in how they were used between each table and within each location to ensure any research effects were minimised.

7. Heating options: Air source heat pumps

Air source heat pumps extract heat from outdoor air by using a system of pipes. They can heat radiators and hot water in your home.

They can take heat from the air even when it's -15 degrees outside.
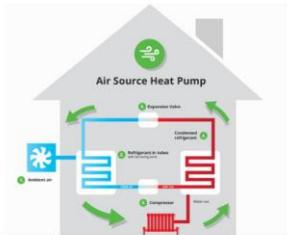
7. Heating options: District heating networks

A district heating network distributes heat from one location through insulated pipes.
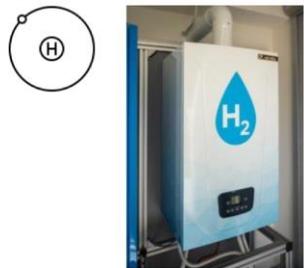
It can be used to heat water and homes.

8. Heating options: Hydrogen

Replacing natural gas in the country's gas network with hydrogen.

This will require upgrading the grid and pipework to make sure it's hydrogen-safe, as well as replacing existing gas boilers.
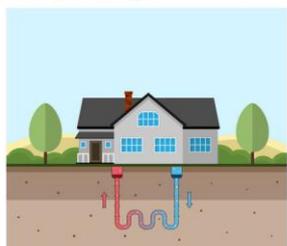

7. Heating options: Ground source heat pumps

Ground source heating absorbs heat energy, from the sun and rain, which is stored in the ground.

Heat pumps in the ground use this energy and upgrade it to more useful temperatures through compressing and condensing it.

7. Heating options: Solar power

Solar panels heat water to use for heating. They can be placed on roofs.