

# Going greener?

Public attitudes to net zero

by Anvar Sarygulov

 bright blue

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## Contents

	About the authors	2
	Acknowledgements	3
	Executive summary	4
1	Introduction	15
2	Methodology	22
3	The road to net zero	24
4	The role of individuals	33
5	The remit of government	41
6	The responsibility of businesses	53
7	The energy sector	59
8	Energy at home	70
8	Conclusion	85
	Annex	93

## About the authors

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Anvar Sarygulov is a Senior Researcher at Bright Blue, with a focus on welfare and housing policy. At Bright Blue, Anvar has previously co-authored reports on public attitudes to social security in Scotland, neighbourhood trust and policy approaches to Universal Credit. Anvar graduated in 2018 with a MSc in Comparative Politics from the London School of Economics and previously completed a BA in Philosophy, Politics and Economics at the University of Oxford.

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The polling included an online survey of 3,002 UK adults and was conducted between 12th and 17 June 2020.

## Executive summary

In 2019, the UK Government enshrined in law a commitment to reach net zero carbon emissions by 2050. Informed by the obligations of the 2015 Paris Agreement, the 2050 target was deemed by the Committee on Climate Change (CCC) to be the earliest credible date to reach net zero, with the resulting reduction in emissions leading to a rise in global average temperature being below 2C if replicated globally. The 2C threshold is perceived as the point where aggregate effects of climate change become excessively dangerous to humans and the ecosystem.

As Chapter One illustrates, the actions needed to be adopted by individuals, the government and businesses to help achieve net zero are demanding and disruptive. Ambitious and radical policies will be needed across economic sectors.

While there has been some polling around the desirability of net zero, there has been insufficient focus on public attitudes to policies required to deliver the net zero target. In particular, public attitudes towards decarbonisation of the supply and demand of energy have received insufficient attention.

The energy sector is currently one of the biggest contributors to greenhouse gas emissions, primarily through the heating of homes. Hence, it requires significant transformation which involves moving away from gas boilers towards low-carbon heating systems. Understanding public use of energy and perceptions towards this transformation is essential.

Our report explores public attitudes to the credibility of and responsibility

for delivering net zero. We especially focus on public awareness, knowledge and perceptions of the changes that need to be made in the energy sector, examining energy supply and the role of energy companies, and the demand for low-carbon heating and home energy efficiency measures. The analysis explores how responses vary by socio-demographic and voting characteristics, allowing us to unearth differentiation in UK public attitudes by social, economic and political divides. Ultimately, the report provides a unique and original comprehensive analysis of public attitudes towards the great net zero challenge.

## **Focus of this research and the methodology**

This report addresses the following research questions:

1. Does the UK public believe that the net zero target is deliverable and who do they think is responsible for delivering it?
2. What are the attitudes of the UK population towards the role and responsibilities of individuals, government and businesses in achieving net zero greenhouse gas emissions?
3. How does the UK population view the energy sector, particularly in the context of the transition to net zero greenhouse gas emissions?
4. What are the views of the UK population on the changes and policies needed to reduce demand for home energy, such as low-carbon heating and energy efficiency measures?

To answer these research questions, we designed and undertook polling with Opinium of a representative weighted sample of UK adults, as detailed in Chapter Two. The large sample size we used enabled us to consider specific socio-demographic and voting characteristics, such as gender, age, housing status, education level, 2019 General Election vote, and 2016 EU Referendum vote.

This polling enabled us to identify what the UK public thinks about the following issues: attitudes towards the credibility of and responsibility for delivering net zero (Chapter Three), views on individual action that



needs to be taken (Chapter Four), views on the government's role in achieving net zero emissions (Chapter Five), perceptions of various business sectors and policies they could pursue to help achieve net zero (Chapter Six), views on the role of energy companies (Chapter Seven), and attitudes towards decarbonising energy at home (Chapter Eight).

## **Attitudes towards the credibility of and responsibility for delivering the net zero target**

A majority of the UK public views a range of everyday activities as contributing to climate change, though this varies between activities, from 77% of the public seeing flying on aeroplanes as a significant contributor to climate change to 56% for production of food on farms.

Previous polling has shown that a majority of the public support the UK's new, legal net zero emissions target for 2050. However, we find that a majority are sceptical about actually reaching this target, with 58% of public believing that it is unlikely that the target will be achieved even by 2050.

The UK public attributes a high degree of responsibility to both individuals and institutions for taking action to achieve net zero, though the national government is seen to have the highest responsibility, with 82% assigning it a high degree of responsibility. Strong majorities also think businesses (82%), local governments (78%), and members of the public (74%) have a high degree of responsibility.

## **The role of individuals**

A majority of the UK public thought that individuals will need to undertake a number of changes in their behaviour to help achieve net zero. The change in behaviour that was seen as most needed was reusing and recycling more (63%), followed by installing better home insulation (53%), reducing air travel (52%), and buying and driving an electric car (52%). Eating less meat was the least supported change of behaviour (34%). Only 10% of people thought most people would not have to make any changes.

When we asked about whether people themselves had adopted these behavioural changes, we found that a majority of the public (72%) already reuses and recycles more products, while a plurality is buying more locally produced goods (43%), has installed home insulation (43%), uses more cycling or public transport (35%) and eats less meat (35%).

The public has significant expectation of prices increasing on all types of products and services, including food, energy and transport, if we take action to achieve net zero. Airplane tickets see the greatest expectation in higher prices, with 67% believing they will increase, and a majority believes that prices will increase for all products and services we polled.

## **The remit of government**

Our research suggests people marginally prefer policy approaches which use financial incentives to encourage behavioural choices that lead to fewer emissions, rather than laws and regulations that discourage or punish behaviours that lead to more emissions for both individuals (49% and 34% respectively) and businesses (45% and 38% respectively).

There are mixed views on whether the government should focus on addressing the additional cost of decarbonisation through higher bills on products and services that emit more greenhouse gases (24%), higher general taxation (11%), or a combination of the two approaches (26%).

The UK public expresses high levels of support for a range of government policies, including requiring firms that work for government to assess and report on their carbon footprint (66%), providing tax breaks for businesses which have cut emissions (59%), introducing a carbon tax (52%), taxing investment in fossil fuels (51%), establishing a new emissions trading scheme for businesses (50%) and installing smart meters in all homes and businesses (49%).

There is majority support for government subsidies for a number of actions that individuals and businesses could adopt to support achieving net zero, such as installing better home insulation (69%), using an electric car (64%), switching away from natural gas heating in

homes (62%), and using cycling or public transport as main methods of travel (53%). Other actions only have plurality support for subsidies, such as reusing and recycling more products (45%) and buying more locally produced goods (43%), or face more opposition than support, such as reducing air travel (35%) and eating less meat (27%).

However, support for broad subsidies aimed at low-income households and small businesses which cannot afford to take steps to achieve net zero emissions is very high, with 81% believing the government should provide help with at least some costs for low-income households and 80% believing the same about small businesses.

## **The responsibility of businesses**

The UK public has varying perceptions on whether specific types of businesses are doing enough to help achieve net zero greenhouse gas emissions by 2050. A majority believes that airlines are taking too little action (50%), and a plurality says the same about industrial manufacturers (46%), gas companies (41%), car makers (40%), high street shops (39%), electricity companies (39%), housebuilders (38%), and supermarkets (36%).

There is a high level of support for specific actions by businesses to help achieve net zero greenhouse gas emissions. A majority supports businesses investing profits into sustainable technologies and practices (68%), offsetting greenhouse gas emissions (63%), creating internal targets for achieving net zero greenhouse gas emissions (62%), publishing detailed breakdowns of emissions from business activities (62%), and making consideration of emissions a key factor in decision-making (62%). However, support for increasing charges to customers to cut emissions is low (29%).

Overall, the public is very supportive of a variety of actions, policies and ideas that could be taken by a range of actors to help UK achieve net zero, but are sceptical of higher costs that could be encountered when implementing them.

## The energy sector

A majority of the public thinks that we need to use more solar (72%), wind (69%), tidal (64%) and hydro (62%) energy to achieve net zero, while biomass and biogas (42%) and hydrogen (37%) are also seen as needed, but are much less familiar in comparison. Usage of nuclear energy to achieve net zero is divisive, with 33% wanting more of it, and 25% wanting less. Meanwhile, people primarily want to see less usage of coal (63%) and oil (55%).

The public thinks that energy companies should utilise their profits in a range of ways. Most find it important to spend profits on activities which directly benefit customers: first and foremost, increasing reliability of service (82%), followed by lowering bills for consumers (81%). A majority of the public also thinks it is important for the profit of energy companies to be spent on increasing support for vulnerable customers (81%), improving infrastructure (80%), investing in their workforce (78%), investing in carbon-free energy (77%), supporting local economic growth (74%) and supporting good causes (63%). Paying dividends to shareholders only receives 44% support.

A number of specific ideas for energy companies to help achieve net zero greenhouse gas emissions by 2050 are seen as important by the public, including broad research into renewable energy sources (80%), investing in energy storage methods (74%), building offshore (70%) and onshore (65%) wind farms, investing into carbon capture and storage facilities (65%) and converting the existing gas network to run on hydrogen (55%). Building more nuclear power stations is more divisive, but a plurality also describes it as important (42%).

Only 10% of the UK public do not support any government intervention in the energy sector for any reasons, but there is division on which reasons to intervene. There is notable support for environmental reasons for government intervention such as increasing investment into renewables (49%) and achieving net zero emissions by 2050 (48%); financial goals such as managing energy prices (49%) and stopping excess profits (45%); and, operational reasons such as improving energy

infrastructure (40%) and improving quality of customer service (28%).

When asked about specific government interventions in the energy sector to encourage achieving net zero, we found majority support for subsidising solar panels at homes (68%), obliging gas suppliers to utilise low carbon gases in the gas network, a Bright Blue policy now adopted by the government (58%), loosening restrictions on building wind turbines (53%), and subsidising hydrogen heating systems for homes (51%). There is also plurality support for mandating the introduction of hydrogen boilers as replacement boilers (47%), restricting production of oil in the North Sea (42%) and banning installation of natural gas boilers (36%).

## Energy at home

To better understand how we can decarbonise homes, we examined which attributes of home heating systems were important for the public. We found that attributes related to control of the system, such as being able to use it at any point (86%), heating up quickly (84%) and ownership (75%), are seen as important. Majority also stated that being lower cost than alternatives (78%) and being familiar with it (77%) are important. Having a low carbon footprint (67%) was also seen as important by a majority, but to a slightly lesser degree.

Furthermore, a large number of factors are seen as influential for installing a new heating system at home, including running costs (83%), having reliable information (82%), cost of replacement (80%), ease of procuring and installation (77%), ownership (71%) and reduction in greenhouse gas emissions (68%). Hence, new heating systems need to ensure that they can be appealing from an environmental perspective, but cost and information are also very important.

When asked about awareness of specific low-carbon heating systems, we find that only 42% of respondents have heard of heat pumps, which is the system with the highest familiarity, in comparison to 46% who have not heard of them. People are even less familiar with hybrid boilers (27%), hydrogen boilers (21%) and heat networks (18%).

Due to fairly low awareness, we also find only some interest in

replacing an existing heating method with a low-carbon heating system such as hybrid boilers (44%), heat pumps (44%), hydrogen boilers (35%) and heat networks (32%). A notable number of respondents did not provide a response.

Those who are not interested in low-carbon heating systems are most likely to cite lack of information (25%), concerns about cost (23%) and concerns about safety (15%). Furthermore, for those who are not interested, only 35% would become interested if the switch to a low-carbon system required no additional changes to their heating system. This highlights the importance of providing information and addressing monetary barriers to adoption of low-carbon heating systems to achieve net zero emissions.

On household energy efficiency measures, we find a high degree of familiarity among most of the public, with double glazing (88%), loft insulation (87%), wall insulation (85%), energy-efficient lighting (84%) draught-proofing windows (79%) and under floor insulation (77%) all being widely recognised. Levels of installation of different energy efficiency measures closely follow knowledge of them, with double glazing (51%), loft insulation (46%), wall insulation (39%), energy-efficient lighting (34%) and draught-proofing windows (30%) already being installed by a notable proportion of the UK public. Similarly, the perception of their importance also mirrors rates of installation, with majorities describing all of the listed measures as important.

The public sees a range of benefits and drawbacks from adopting these energy efficiency measures, with making energy bills cheaper (69%), reducing greenhouse gas emissions (52%) and making the house more comfortable to live in (49%) being seen as the most important benefits, while high initial costs (62%), disruption during installation (36%) and future costs in maintaining the measures (31%) are seen as the key drawbacks.

## **Main trends**

There are some notable patterns in terms of socio-demographic and voting groups and an individual's views on credibility of,

responsibilities for and policies on delivering net zero. It is clear that several characteristics emerged as dominant markers of differing public attitudes. On the other hand, a number of socio-demographic characteristics are only associated with occasional differences in views.

We can divide these socio-demographic and voting characteristics into two groups:

- A **primary group**, which includes characteristics that are frequently associated with differences in views on delivering net zero: age, education level, 2019 general election vote, and 2016 European Union referendum vote.
- A **secondary group**, which includes characteristics that are infrequently associated with differences in views on delivering net zero: gender, region and housing status.

Though specific differences vary from question to question, we broadly find that those who are younger and those with higher levels of education are more likely to express support for behavioural changes or policies to achieve net zero by 2050 as important compared to those who are older and those with lower levels of education. However, in many cases people with lower levels of education are much more likely to not express an opinion, rather than be more likely to oppose, highlighting the lack of information about net zero policy in certain social groups.

Similarly, those who voted Remain in the 2016 European Union Referendum, and Labour and Liberal Democrat voters, are more likely to support behavioural changes or perceive policies needed to achieve net zero by 2050 as important in comparison to those who voted to Leave the European Union and Conservative voters, though in many cases the majority of Leave and Conservative voters still express support for policies to achieve net zero, but to a lesser degree.

It must be stated that many of these characteristics will be correlated,

meaning that we cannot attribute a causal relationship between being a member of a specific socio-demographic group or having a particular voting history and holding a specific attitude.

The final chapter (Chapter Nine) summarised the 11 main findings from the report:

- A firm majority of the UK public believes that it is unlikely that the net zero target will be achieved by 2050.
- The UK public believes that the national government is most responsible for delivering net zero.
- A majority of the UK public believes that individuals will have to adopt a number of behavioural changes to help achieve net zero, and some of those behaviours have already been adopted by a substantial number of people.
- A majority of the public is expecting the price of various goods and services to increase if action is taken to achieve net zero, and are divided on whether they would be willing to pay more for them if it would lead to lower emissions.
- The UK public has a preference for incentives over punishments in government policies to reduce net zero greenhouse gas emissions.
- The UK public supports financial subsidies for individuals and businesses for adopting changes and behaviours to help achieve net zero, and strongly believes low-income households and small businesses should receive financial help.
- The UK public is more likely to believe than not that most types of businesses are taking too little action to achieve net zero greenhouse gas emissions by 2050.
- The UK public believes it is important for energy companies to utilise profits to improve finances for customers, quality of service and to help to achieve net zero.
- The public are more likely to support government interventions in the energy market for both environmental and financial reasons.



- The UK public is unfamiliar with low-carbon heating systems, but there is some interest in replacing existing heating methods with them.
- The UK public has high awareness of most household energy efficiency measures, with a considerable installation base, and considers most of them to be important for achieving net zero greenhouse gas emissions.

This report demonstrates that the UK public sees all agents – individuals, the government and businesses – as highly responsible for taking action to achieve net zero, even though it deems the 2050 target unlikely. The public supports a wide variety of policies and changes that each of these agents will need to take. But a significant part of the public is not informed about this, particularly on measures to decarbonise the energy sector, and concerns around costs could turn the public off these measures.

## Chapter 1: Introduction

Last year, the UK Government enshrined in law a commitment to reach net zero carbon emissions by 2050 – making the UK one of the first major economies to do so.<sup>1</sup> This action followed the findings of the report by the Committee on Climate Change (CCC), a non-departmental public body that advises the UK Government on greenhouse gas emissions targets and preparing for impacts of climate change, which was asked to explore the feasibility of the net zero target in 2018 by the then Minister for Energy and Clean Growth.<sup>2</sup> Their report, *Net Zero – The UK’s contribution to stopping global warming*, recommended 2050 as the target year for net zero greenhouse gas emissions.<sup>3</sup> Informed by the obligations of the 2015 Paris Agreement,<sup>4</sup> the 2050 target was deemed to be the earliest credible date to reach net zero, with the resulting reduction in emissions leading to a rise in global average temperature being below 2C if replicated globally. The 2C threshold is seen as the point where the aggregate effects of climate

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1. HM Government, “Press release: PM Theresa May: we will end UK contribution to climate change by 2050”, <https://www.gov.uk/government/news/pm-theresa-may-we-will-end-uk-contribution-to-climate-change-by-2050> (2019).

2. HM Government, “Press release: Climate experts asked for advice on net zero target”, <https://www.gov.uk/government/news/climate-experts-asked-for-advice-on-net-zero-target> (2018).

3. The CCC, “Net Zero – The UK’s contribution to stopping global warming”, <https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/> (2019).

4. UNFCCC, “The Paris Agreement”, <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement> (2019).

change become excessively dangerous to humans and the ecosystem.<sup>5</sup>

The adoption of the net zero target represented a significant escalation of the earlier ambition of the UK Government, which was equally world-leading, outlined in the Climate Change Act 2008: 80% reduction in carbon emissions relative to the baseline levels in 1990 that were outlined in the 1992 Kyoto Protocol.<sup>6</sup>

The push for the net zero target was supported across the political spectrum.<sup>7</sup> In fact, the main division across political parties in the 2019 General Election on net zero was in terms of the timeline to achieve it, with the Conservatives proposing to reach it by 2050,<sup>8</sup> while Labour focused on reaching it between 2030 and 2040.<sup>9</sup>

The adoption of the net zero target was also driven by long-term advocacy and analysis by a range of organisations, including Bright Blue. Our previous report titled *Hotting up*, which was published in 2018, showed a majority (64%) of the public support moving towards net zero emissions in the decades ahead.<sup>10</sup>

This is unsurprising considering concerns about the environment have been rising in public consciousness. Seventy four percent of the UK public expressed concern about climate change at the beginning of 2020.<sup>11</sup> This concern is expressed by majorities across different socio-demographic groups and voting history.

Hence, it is not surprising that the public has expressed approval about plans to reach net zero greenhouse gas emissions, and are aware

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5. Michael E. Mann, "Defining dangerous anthropogenic interference", *PNAS* (2009), <https://www.pnas.org/content/106/11/4065>.

6. Climate Change Act 2008, <https://www.legislation.gov.uk/ukpga/2008/27/contents>.

7. The Climate Coalition, "Cross-party join MP letter for a net zero target", <https://www.theclimatecoalition.org/joint-letter-2019> (2019).

8. The Conservative Party, "The Conservative and Unionist Party Manifesto 2019", [https://assets-global.website-files.com/5da42e2cae7ebd3f8bde353c/5dda924905da587992a064ba\\_Conservative%202019%20Manifesto.pdf](https://assets-global.website-files.com/5da42e2cae7ebd3f8bde353c/5dda924905da587992a064ba_Conservative%202019%20Manifesto.pdf) (2019), 43.

9. The Labour Party, "The Labour Party Manifesto 2019" <https://labour.org.uk/wp-content/uploads/2019/11/Real-Change-Labour-Manifesto-2019.pdf> (2019), 14.

10. Sam Hall and Philip Box, "Hotting up", *Bright Blue*, <https://brightblue.org.uk/wp-content/uploads/2018/05/Hotting-up.pdf> (2018).

11. YouGov, Cambridge Centre, "Survey: YGC GB environmental attitudes", [https://d25d2506sfb94s.cloudfront.net/cumulus\\_uploads/document/xlz28wjcpt/YGC\\_GB\\_environmental\\_\\_attitudes.pdf](https://d25d2506sfb94s.cloudfront.net/cumulus_uploads/document/xlz28wjcpt/YGC_GB_environmental__attitudes.pdf) (2020), 1.

of the drive to achieve it. Seven in ten people are aware of the 2050 net zero target, and 82% support the goal to reach it by 2050.<sup>12</sup> In fact, the public expects the UK to at least follow others in cutting emissions, with 38% saying we should cut emissions faster than other countries, and 42% saying we should cut them at a similar rate.<sup>13</sup>

Furthermore, as noted previously, the timeline for reaching the net zero target was a notable dividing line in the 2019 General Election, with most of the opposition parties arguing to bring the target forward. A majority of the public supported the latter stance, with 64% agreeing that the target should be set to be reached before 2050.<sup>14</sup>

## Achieving net zero

Legislating for net zero was a welcome, but very initial step. Achieving it will be much more difficult. Over the last couple of years, Conservative Governments have announced policies specifically aimed at making progress towards net zero by 2050. These include, among other policies: lifting the block on subsidies for onshore wind projects;<sup>15</sup> £1.3 billion for decarbonising cars,<sup>16</sup> including extending subsidies for electric cars; announcing a Carbon Capture and Storage (CCS) Infrastructure Fund in the 2020 Budget;<sup>17</sup> and, plans to decarbonise the housing stock through the Green Gas Support Scheme to increase the proportion of green gas in the grid and the Clean Heat Grant to support installation

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12. Citizens Advice, “Zero Sum”, <https://www.citizensadvice.org.uk/about-us/policy/policy-research-topics/energy-policy-research-and-consultation-responses/energy-policy-research/zero-sum/> (2020), 4.

13. Sam Hall and Philip Box, “Hotting up”, *Bright Blue*, <https://brightblue.org.uk/wp-content/uploads/2018/05/Hotting-up.pdf> (2018).

14. Survation, “Survey: Environmental Poll”, <https://www.survation.com/british-public-supportive-of-efforts-to-reduce-greenhouse-gas-emissions-new-survey-reveals/> (2019).

15. Eleanor Langford, “Government set to reverse Cameron-era ban on onshore wind farm subsidies”, *PoliticsHome*, <https://www.politicshome.com/news/article/government-set-to-reverse-cameron-era-ban-on-onshore-wind-farm-subsidies> (2020).

16. Peter Campbell, “Electric car subsidies extended in £1.3bn green vehicles drive”, *Financial Times*, <https://www.ft.com/content/1d2c1450-63ad-11ea-b3f3-fe4680ea68b5> (2020).

17. HM Treasury, “Budget 2020”, <https://www.gov.uk/government/publications/budget-2020-documents/budget-2020> (2020).

of heat pumps and biomass boilers.<sup>18</sup> But as the CCC have illustrated, much more change will be needed to achieve net zero. A variety of actors – government, businesses, and individuals – will all have to play a crucial role in delivering net zero, often completely transforming their current behaviour. As Table 1.1 illustrates below, there is a very wide range of action that these different agents – across different economic sectors – will need to pursue to achieve net zero:

**Table 1.1. Actions that are needed to achieve net zero greenhouse gas emissions by 2050, according to the CCC**

Sector	Actions required
<b>Buildings</b>	Improvements in energy efficiency, wider adoption of heat networks, increased adoption of low carbon heating approaches such as heat pumps and hydrogen boilers
<b>Electricity</b>	Continuation of phase-out of fossil fuels, decarbonisation of energy generation through renewables, hydrogen and bioenergy, infrastructure improvements in infrastructure and storage, production of hydrogen alongside carbon capture and storage technology
<b>Industry</b>	Development and adoption of carbon capture and storage technology, improvements in energy efficiency, replacement of fossil fuels with hydrogen
<b>Road transport</b>	Growth of the electric vehicles market, expansion of vehicle charging infrastructure, transition to zero-emission vehicles
<b>Aviation</b>	Improvements in operation and efficiency, constraining demand for airplane travel, adoption of biofuels
<b>Shipping</b>	Improvements in operation and efficiency
<b>Agriculture</b>	Adoption of diets with lower carbon footprint, reduction of food waste, development of low-carbon farming practices, targeted afforestation and peatland restoration
<b>Waste</b>	Reduction of waste, increase in recycling, adoption of measures to limit emissions from combustion of waste

*Source: Committee for Climate Change, Net Zero – the UK’s contribution to stopping global warming, 2019.*

As Table 1.1. shows, the actions needed to be adopted by individuals,

18. Department for Business, Energy & Industrial Strategy, “Future support for low carbon heat”, <https://www.gov.uk/government/consultations/future-support-for-low-carbon-heat> (2020).

the government and businesses are transformative. Ambitious, and radical, policies will be needed. What does the public know and think about this radical road to net zero? That is the focus of this report.

In recent years, there has been a significant range of general polling around climate change and net zero, and some most recent and major examples are highlighted. The BEIS public attitude tracker provides regular findings on public awareness of and attitudes to climate change and net zero,<sup>19</sup> while the British Social Attitudes survey focuses on broader divisions towards climate change and net zero across demographic groups.<sup>20</sup> A major set of polling has also been published by The Zero Carbon campaign, examining public responses to environmental proposals.<sup>21</sup>

But while there has been a lot of polling around climate change and net zero in particular, there has been insufficient focus on public attitudes to specific policy approaches and proposals required to get us to the net zero target. In particular, decarbonisation of the energy sector at the residential level has received insufficient attention considering the extent of change it will require of many households.

## Focus of this report

For this report, we conduct and analyse polling of the UK public to explore attitudes to the credibility of and responsibility of individuals, government and businesses for delivering net zero. We especially focus on public awareness, knowledge and perceptions of the changes that need to be made in the energy sector, examining the supply of energy, role of energy companies, and the demand for low-carbon heating and home energy efficiency measures. We focus on the energy sector because it is one of the key sectors of the economy that faces significant transformation to allow the UK to achieve net zero, with heating being

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19. <https://www.gov.uk/government/statistics/beis-public-attitudes-tracker-wave-34>

20. <https://www.bsa.natcen.ac.uk/latest-report/british-social-attitudes-35/climate-change.aspx>

21. Seb Wride, "Report for the ZeroC Commission", Public First, <http://www.publicfirst.co.uk/new-report-for-the-zero-c-commission.html> (2020).

one of the biggest sources of greenhouse gas emissions in the UK. This transformation is likely to be disruptive for consumers, making it vital to have a full understanding of the public sentiment towards policies that decarbonise heat. Public attitudes will be analysed by a range of socio-demographic and voting characteristics, enabling us to examine variation in perspectives by social, economic and political divides.

In this report, we seek to answer the following four research questions:

1. Does the UK public believe that the net zero target is deliverable and who do they think is responsible for delivering it?
2. What are the attitudes of the UK population towards the role and responsibilities of individuals, government and businesses in achieving net zero greenhouse gas emissions?
3. How does the UK population view the energy sector, particularly in the context of the transition to net zero greenhouse gas emissions?
4. What are the views of the UK population on the changes and policies needed to reduce demand for home energy, such as low-carbon heating and energy efficiency measures?

The report is structured as follows:

- **Chapter Two** explains in detail the methodology employed for the public polling we conducted.
- **Chapter Three** explores the broad attitudes of the public towards credibility of and responsibility for delivering the net zero target.
- **Chapter Four** considers the views on actions that individuals will have to take to help reach net zero, and the sensitivity of people to price changes.
- **Chapter Five** examines the views on the government's role in achieving net zero emissions, particularly in terms of policy approaches and how the government can utilise financial support

for those who might face issues.

- **Chapter Six** looks at the responsibility of business sectors in achieving net zero greenhouse gas emissions and how individual firms can change their behaviour and policy.
- **Chapter Seven** shifts focus to the energy sector, looking at the perception of gas and electricity companies and their conduct towards achieving net zero, while also testing attitudes on government intervention in the sector.
- **Chapter Eight** examines attitudes towards decarbonising energy at home by asking people's views on low-carbon heating sources and energy efficiency measures.
- **Chapter Nine** concludes with the discussion of main trends in attitudes towards net zero that have emerged from polling the UK public.



## Chapter 2: Methodology

The report aims to unearth the views of the UK public, across socio-demographic and political divides, towards the credibility of and responsibility for delivering the net zero greenhouse gas emissions target. In addition, it explores public attitudes to how energy companies and home energy systems need to change to ensure delivery of net zero.

In the polling questions, all respondents were asked about “reaching net zero greenhouse gas emissions by 2050”. This is typically shortened in this report to ‘net zero’ for brevity. With only 63% of the public having at least some awareness of the term net zero,<sup>22</sup> it was important to provide a detailed description in the polling survey.

### Polling approach

The polling was undertaken by Opinium. It was conducted between 12th and 17th June 2020 and consisted of 3,002 UK adults, who were surveyed online through a panel. Using Office of National Statistics data, the sample has been weighted to be fully representative of the adult UK population according to gender, age, employment status, car ownership, 2016 EU Referendum, and 2019 UK General Election. A full list of polling questions is provided in the Annex.

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22. Department for Business, Energy & Industrial Strategy, “BEIS Public Attitudes Tracker: Wave 34”, <https://www.gov.uk/government/statistics/beis-public-attitudes-tracker-wave-34> (2020), 3.

Those who own a house with or without a mortgage are referred to as ‘homeowners’, while those who are privately or socially renting are referred to as ‘renters’.

The population is divided into four groups by highest education level achieved: below GCSE, GCSE or equivalent, A-level or equivalent and undergraduate or higher.

Box 2.1 lists all the cross-breaks that were used in the polling.

#### Box 2.1. Complete polling cross-breaks

- Gender
- Age
- Occupation
- Region
- Housing status
- Education level
- 2019 UK General Election past vote
- EU referendum past vote

The polling has a large number of questions and cross-breaks, with many of them demonstrating marginal or absence of differences between different groups of UK adults. To ensure that prominence is given to the greatest divergences between socio-demographic and political groups, the report will prioritise reporting cross-breaks which are most often or sometimes associated with differences in the data. These characteristics of frequent or occasional differentiation are revealed throughout the report and summarised towards the end.

We have not reported any data for which the sample size was under 50, as such results have large confidence intervals, meaning that there is a significantly high chance that they are not representative of the population. The proportion of respondents who responded ‘don’t know’ is reported throughout this report.

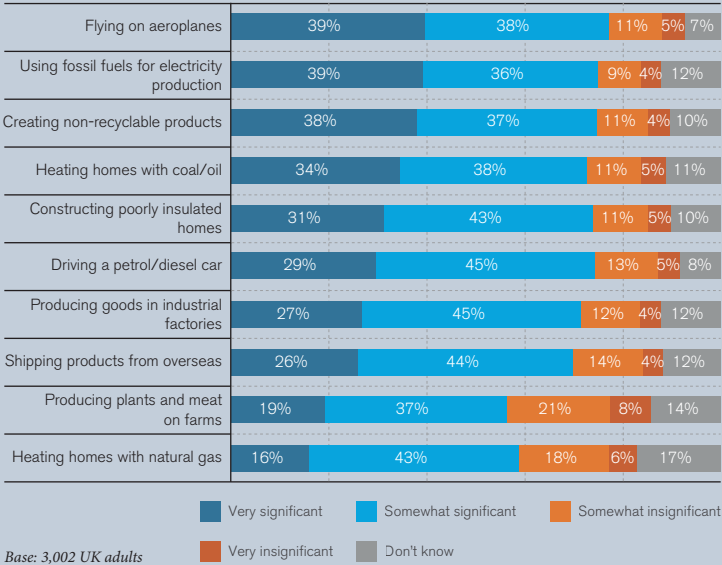
## Chapter 3: The road to net zero

This chapter examines the broad attitudes of the UK public towards the credibility of and responsibility for delivering the UK's net zero emissions target by 2050, as well as what sources the public think are most responsible for carbon emissions.

### Contribution to emissions

Our polling suggests that the public views a large range of everyday activities which have varying greenhouse gas footprints as contributing to climate change. Chart 3.1 below illustrates that the majority of public believe all activities we have asked about are significant ('very significant' and 'somewhat significant') contributors, ranging from a high of 77% for flying on aeroplanes to a low of 56% for production of food on farms.

**Chart 3.1. Views on contribution of various activities to climate change through greenhouse gas emissions**



As Chart 3.1 above illustrates, air travel and usage of fossil fuels in electricity production was seen by 39% of the public as a very significant contributor and the creation of non-recyclable products was just behind, with 38% seeing it as a very significant contributor. In contrast, only 16% saw heating homes with natural gas as a very significant contributor and only 19% said the same about producing food on farms.

The public seems to have an image of contributions that is broadly similar to actual emissions. Both aeroplanes and cars are seen as significant contributors of greenhouse gas emissions, falling in line with transport being the actual biggest contributor according to national statistics.<sup>23</sup> Energy production with fossil fuels is identified

23. Department for Business, Energy and Industrial Strategy, "Provisional UK greenhouse gas emissions national statistics", <https://data.gov.uk/dataset/9a1e58e5-d1b6-457d-a414-335ca546d52c/provisional-uk-greenhouse-gas-emissions-national-statistics> (2020).

as the second most significant contributor, once again in line with current statistics. However, it should be noted that energy's supply CO<sub>2</sub> output has drastically fallen from 190.0 Mt in 2009 to 90.1 Mt in 2019.<sup>24</sup> Furthermore, with the main source of residential contribution to CO<sub>2</sub> emissions being linked to use of natural gas for heating and cooking,<sup>25</sup> the public seems to be underestimating the contribution of natural gas heating to emissions.

Notably, different socio-demographic groups are aligned in these perceptions, with very few notable differences between them. The same cannot be said for political groups, where some substantive differences in opinion were observed. Chart 3.2 below illustrates the differences between Remain and Leave voters, which were the most notable.

While a majority of both Remain and Leave voters identify almost all activities as significant contributors to climate change through greenhouse gas emissions, Leave voters are less likely to identify any activity as contributing significantly to climate change. This difference is fairly small for activities such as creating non-recyclable goods (7% point difference), but is more notable for heating homes with natural gas (17% point difference) and producing plants and meat on farms (21% point difference). The latter, in fact, is the only activity not considered by a majority of Leave voters to be a significant contributor to climate change. Finally, it is notable that heating homes with gas and producing food on farms are seen as relatively less significant activities by both Remain and Leave voters, whereas other activities have fairly similar perceptions within groups.

A similar pattern can be observed across supporters of different parties, though this is less pronounced. While a majority of Conservative voters identify each activity as a significant contributor to climate change, they are less likely to do so in comparison to Labour, Liberal Democrat and SNP voters. Again, the differences are most stark on

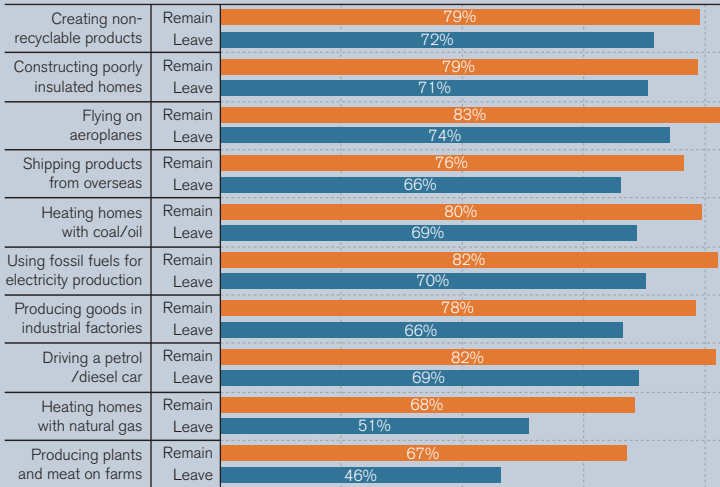
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24. Ibid.

25. Ibid.

food production: 50% of Conservative voters describe it as a significant contributor, in contrast to 66% of Labour, 72% of Liberal Democrat and 63% of SNP voters.

**Chart 3.2. Views on whether an activity's contribution to climate change through greenhouse gas emissions is significant (very significant and somewhat significant) by Brexit vote**

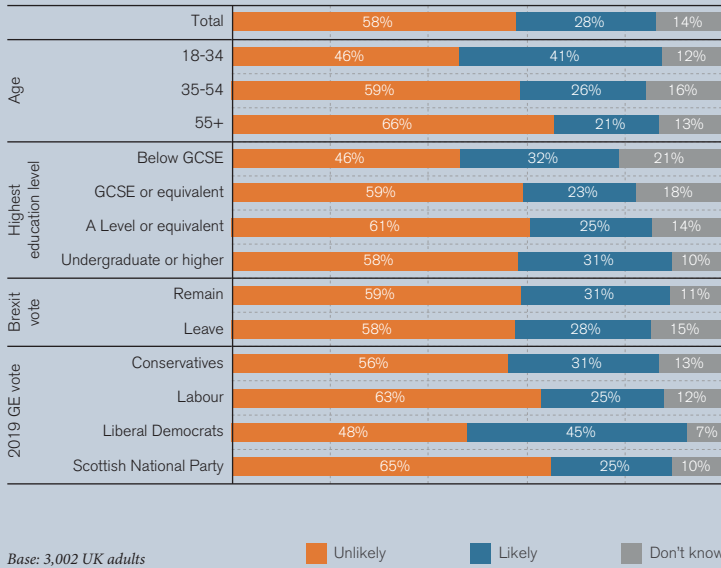


Base: 3,002 UK adults

## Achieving net zero by 2050

As noted in Chapter One, a majority of the public support the UK's new, legal net zero emissions target for 2050, and a significant proportion also believes that this date should be brought forward so that net zero could be achieved earlier. However, it is interesting to note that our polling also finds significant scepticism about the target, with 58% of public believing that it is unlikely that the target will be achieved even by 2050, which is shown in Chart 3.3 below.

**Chart 3.3. Views on likelihood of UK achieving net zero greenhouse gas emissions by 2050, by age, education level, Brexit vote and 2019 General Election vote**



Overall, there is significant consensus across socio-demographic and political groups that the UK is unlikely to achieve the net zero target by 2050, with a few exceptions that are slightly more optimistic, as shown in Chart 3.3 above.

Younger people, those aged 18 to 34, are much more likely to believe that the target is likely to be achieved (41%) in comparison to those over the age of 55, where only 21% believe that it is likely. Generally, the people with highest and lowest educational qualifications are more likely to think the net zero target can be achieved by 2050, while those who have a GCSE or A Level education are less likely to think so. However, a plurality of all demographics deems reaching the target as unlikely.

Furthermore, there is an interesting political pattern in views. Liberal Democrats are the most likely to think that achieving net zero is likely

(45%), though a greater proportion do still see it as unlikely (48%). Conservative voters are more pessimistic, with only 31% seeing it as likely despite it being a policy implemented by the Conservative Government. Labour and SNP voters are even more sceptical, with only 25% seeing it as likely.

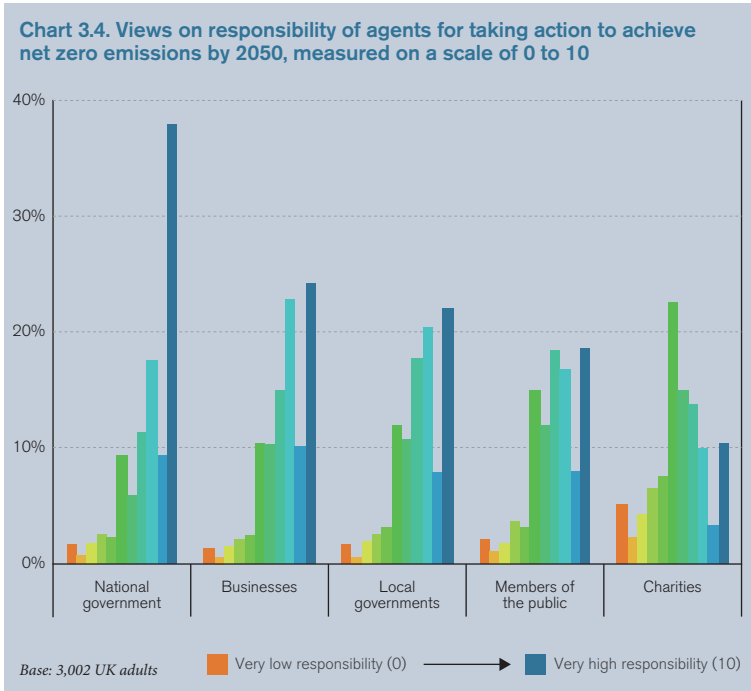
It should be noted that Remain and Leave voters have similar views on whether the target will be achieved, with 31% and 28% respectively seeing it as likely, in contrast to 59% and 58% who see it as unlikely.

Finally, the interaction between party support and Brexit vote should be noted for Conservative voters, where a significant gap in opinion exists. Remain-supporting Conservatives are actually more likely to believe that we are likely (46%) rather than unlikely (42%) to achieve the target. This contrasts with Leave-supporting Conservatives, where only 26% see it as likely, and 60% see it as unlikely.

## **Responsibility for achieving net zero**

The changes required by individuals and institutions to achieve net zero will be significant. In our polling, the UK public attributes a high degree of responsibility to both individuals and institutions, though the national government is seen to have the highest responsibility, as demonstrated in Chart 3.4 below. The chart shows how the public has allocated responsibility for achieving net zero when asked to give a score of between zero and ten, with scores between six and ten described as allocating a 'high degree of responsibility'.

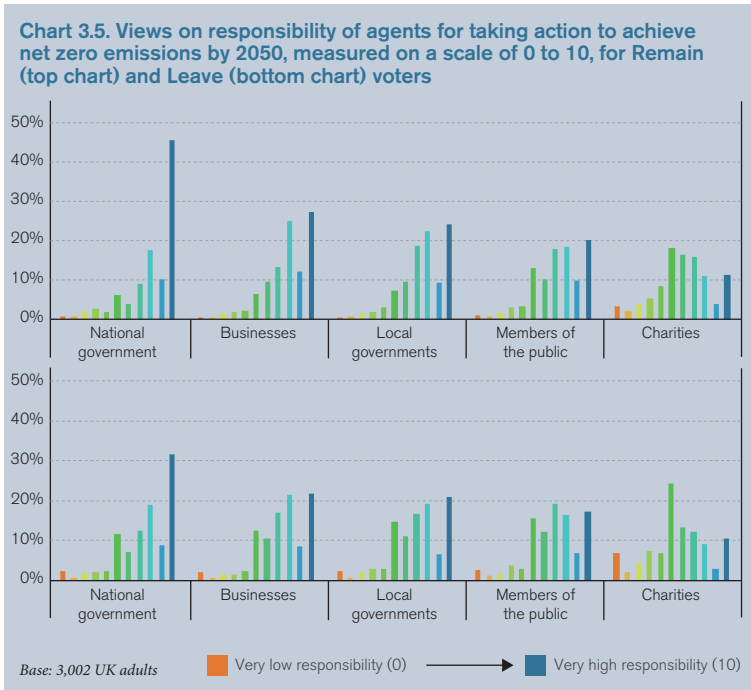




While 82% of respondents give the national government between six and ten in terms of responsibility, 38% give it a score of ten, corresponding to having very high responsibility, as seen in Chart 3.4 above. Similar proportion of respondents gives businesses and local governments a score between six and ten (82% and 78% respectively), but much fewer give them a score of ten (24% and 22% respectively), suggesting that the public attributes a significant degree of responsibility to them, but not to the extent of the national government.

Members of the public are also attributed with a significant degree of responsibility, with 74% giving them a score between six and ten and 19% giving them a top score of ten. Finally, while a majority (52%) also gave a score between six and ten to charities, this is notably lower than for other agents that we have polled, suggesting that charities are seen as less responsible in comparison to others.

Again, there is little notable variation between different socio-demographic groups, with majorities across gender, age, education and region divides attributing a score of between six and ten in terms of responsibility to all sources, other than charities. Divides across political groups are also for the most part minor, though some divergence between Leave and Remain voters can be observed, as seen in Chart 3.5 below.



The most notable difference are the views on the role of national government: 46% of Remain voters give it a score of ten in terms of responsibility, in contrast to only 32% of Leave voters. Furthermore, across all agents polled, Leave voters are less likely to attribute responsibility for taking action on net zero, as can be seen by the flatter distribution of Leave responses.

However, it should be noted that more than seven in ten Leave voters give a score of between six and ten to everyone, other than charities, meaning that a majority of Leave voters still attribute a high level of responsibility, just to a lesser degree than Remain voters. Similar, but less pronounced patterns, can be observed in comparison of Conservative and Labour voters, with the former being slightly less likely to attribute very high levels of responsibility to agents. For example, 86% of Labour and 82% of Conservative voters attribute a high level of responsibility to the national government.

## Conclusion

This chapter has shown that the public has, to some extent, good awareness of how various activities contribute to greenhouse gas emissions. In addition, it has revealed that a majority is pessimistic about reaching the 2050 net zero target, and a majority believe that all institutions and individuals have a high degree of responsibility in achieving the net zero target.

These opinions are held across socio-demographic groups such as gender, age, education level and region, indicating that the UK public is united in their broad perspectives on net zero. Differences across political groups are more notable, with Leave voters in particular being less likely to perceive some activities as polluting and less likely to assign responsibility for reaching net zero. However, even with these differences, majorities across political lines are in agreement on the sources of climate change and responsibility for reaching net zero.

The public attributes a high degree of responsibility to individuals and institutions, especially national government, for reaching net zero. Our report will delve deeper into how exactly the public thinks different institutions and individuals should contribute to achieve net zero in broad terms, particularly in their consumption of energy. We will begin in the next chapter by looking at what changes individuals expect to need to make, and at what cost, to contribute to achieving net zero.

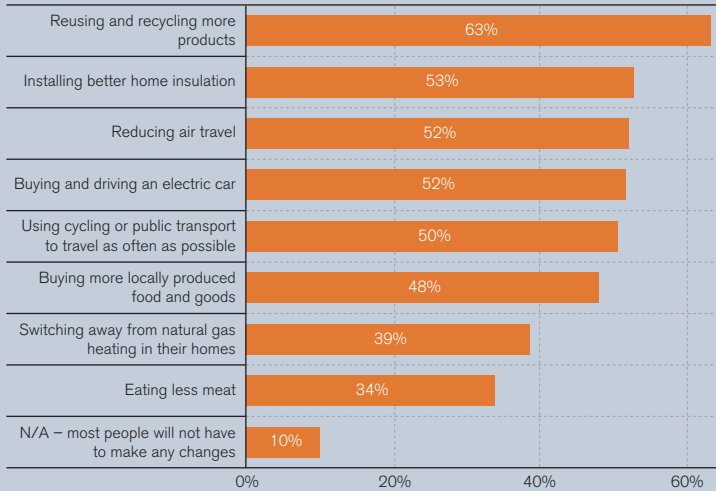
## Chapter 4: **The role of individuals**

With the last chapter illustrating that members of the public are seen by most to have high responsibility for taking action to achieve net zero, this chapter focuses on the specific actions that individuals could take to help with reaching net zero. The chapter initially examines what changes people think the public will need to take to reduce greenhouse gas emissions and their willingness to adopt those changes themselves. We then also explore how sensitive individuals are to price changes that are highly likely to accompany shifts in behavior to reduce carbon footprints.

### **Behavioural change**

We asked what changes the public thought individuals would have to make in order for the UK to reach net zero emissions by 2050, as shown in Chart 4.1 below.

**Chart 4.1. Views on what changes most people in UK will have to make to achieve net zero greenhouse gas emissions**



Base: 3,002 UK adults

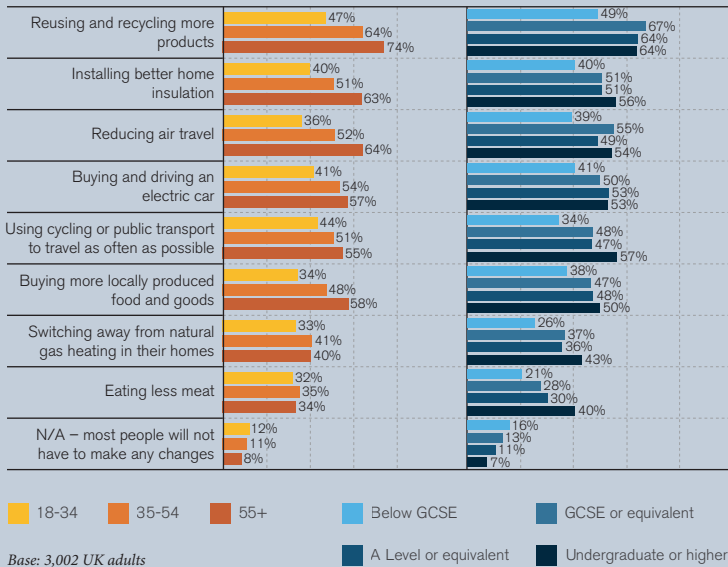
Chart 4.1 shows that a majority of the public think that people will need to undertake a number of changes in their behaviour to help achieve net zero. The change in behaviour that is seen as most needed is reusing and recycling more (63%), followed by installing better home insulation (53%), reducing air travel (52%) and buying and driving an electric car (52%). Eating less meat is the least supported change of behaviour (34%). Only 10% of people think most people would not have to make any changes, highlighting that the public is aware that behavioural change is necessary.

Once we examine socio-demographic groups as shown in Chart 4.2 below, we can see a clear divide amongst respondents by age and education, with younger people aged 18 to 34 much less likely to think that people need to implement changes, with the gap being widest on issues such as recycling and home insulation. It is curious that young people tend to prefer environmental policies such as net zero, believe

they are more likely to happen, but are less likely to think that most people will have to make changes to get there.

Similarly, those who have below GCSE as their highest qualification are less likely to think the listed changes will need to be adopted.

**Chart 4.2. Views on what changes most people in UK will have to make to achieve net greenhous gas emissions, by age and highest education level**

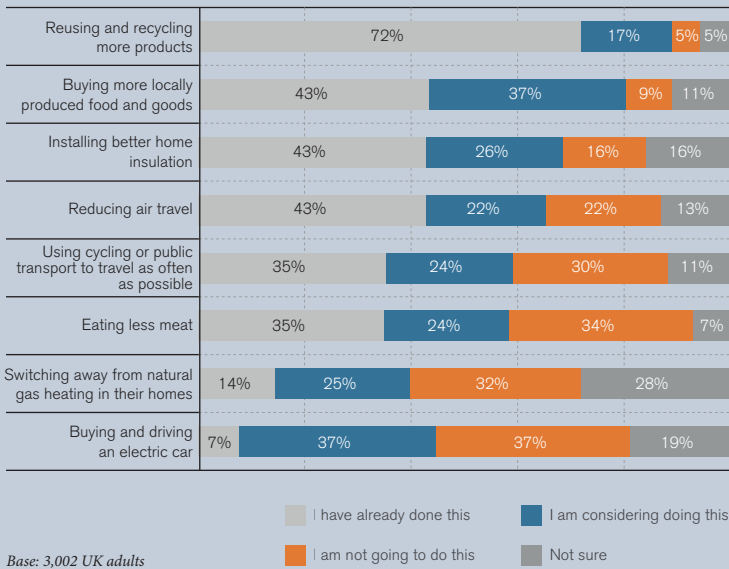


Political divides are much less prominent, with more than 45% identifying the polled changes as necessary across them, with the exception of eating less meat and switching away from natural gas heating. There was only three issues where a notable difference was observed. First, SNP voters were much more likely to believe installing better home insulation was needed. Second, Leave and Conservative voters were notably more sceptical of eating less meat and slightly more sceptical of switching away from natural gas as behavioural changes that will have to be adopted. Finally, Liberal Democrats were much

more sceptical about buying more locally produced food and goods. Hence, while there was broad political consensus, specific behavioural changes were sometimes linked to a divided opinion.

When it comes to behavioural changes respondents are actually doing themselves, there are notable contrasts with what respondents believe the public as a whole should be doing. This is shown in Chart 4.3 below. We see that a majority of the public (72%) already reuses and recycles more products, while a plurality is buying more locally produced goods (43%), has installed home insulation (43%), uses more cycling or public transport (35%) and eats less meat (35%). While 43% also reported reducing air travel to help achieve net zero, there is a chance that some of this change has been driven by the COVID-19 pandemic.

**Chart 4.3. Action taken by respondents to achieve net zero greenhouse gas emissions**



It is also notable that only 44% have switched or are considering

switching to owning and driving an electric vehicle, whereas the CCC have said that ultra-low emission vehicles such as electric cars need to compose 100% of sales of cars by 2035 at the latest to achieve net zero.<sup>26</sup>

Differences by age once again come into play, with the polling finding that among the behavioural changes which have already been done by more than 40% of people (recycling more products, buying local goods, installing home insulation and reducing air travel), it is people over the age of 55 who are much more likely to have already taken it, while younger people are much more likely to express consideration of doing the action. For example, while only 25% of 18 to 34 year olds have already installed home insulation, 39% would consider doing so.

However, for less adopted behavioural changes, such as eating less meat, switching away from natural gas heating and buying an electric car, we find that younger and older people are equally likely to have already done this action, but older people are much more likely to rule it out going forward, whereas younger people are more likely to consider doing it. For example, while 45% of those aged 18 to 34 year are considering buying and driving an electric car, this falls to 29% of those over 55, with 50% of the latter saying they will not do this.

On home insulation it is not a surprise that there was a big difference in responses between homeowners and renters, with 52% of homeowners already having pursued this against 25% of renters, highlighting that landlords might not be doing enough to support the insulation of their properties.

Notable political divides also emerge in some of the behavioral changes we polled, with Leave and Conservative voters less likely to consider buying an electric car, switching away from natural gas, eating less meat and taking public transport more, and more likely to state that they will not consider doing this. For example, while 68% of Remain voters and 68% of Labour voters are already using more public transport and cycling or are considering doing so, this falls to 50%

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26. The CCC, "Net Zero – The UK's contribution to stopping global warming", 198.



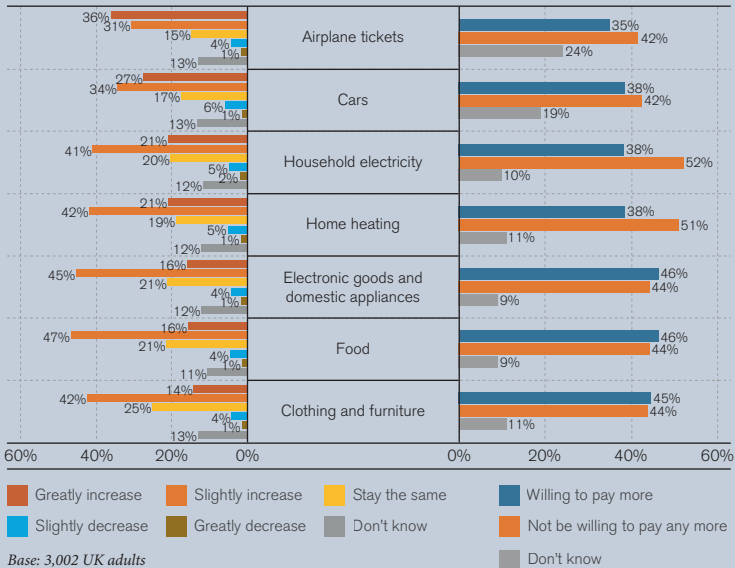
of Leave voters and 52% of Conservative voters. On other behavioural changes polled, views are similar across political divides.

### The cost of changing behaviour

It is important to remember that it is likely that there will be costs to enacting the behavioural changes that are necessary to achieve net zero. Hence, we asked both about people’s expectations of and willingness to pay higher prices for behavioural changes to meet net zero.

To examine this, we have polled about a variety of products which are likely to have different prices as a result of behavioural changes needed to achieve net zero greenhouse gas emissions by 2050, as seen in Chart 4.4 below. For example, the cost of cars is likely to shift as a result of electric vehicle adaption, while the cost of home heating is likely to shift as a result of switching away from natural gas.

**Chart 4.4. Expectation of price increases if we take action to achieve net zero greenhouse gas emissions (left) and willingness to pay more for products if they emitted less greenhouse gases (right)**



As Chart 4.4 illustrates above, when we examine overall attitudes to prices, we see that the public has significant expectation of prices increasing greatly or slightly on all types of products and services that we have polled if we take action to achieve net zero. Airplane tickets see the greatest expectation in higher prices, with 67% believing they will increase ('greatly' and 'slightly' increase). In contrast, clothing and furniture are less likely to be believed to have prices increased, with 56% expecting the price to increase. Overall, a majority of the public believes that action taken to reach net zero will lead to price increases for a range of products and services.

As Chart 4.4 above shows, the public is rather split on whether they actually would be willing to pay more for these products and services where higher prices would lead to lower emissions. It is notable that people are most likely to be willing to pay more for products where they also have the lowest expectation of higher prices, such as electronic goods (46% willing to pay more), food (46%) and clothing (45%). In contrast, household electricity and home heating, both of which are most likely to be believed to face price increases as a result of net zero, are also products where a majority of people (52% and 51% respectively) say they would not be willing to pay more for them to lower emissions.

The most notable socio-demographic trend, which extends across both expectation of changes in price and willingness to pay, is how polarised age groups are. No matter the product or service, more young people are willing to pay more, and fewer expect prices to rise. For example, 47% of those aged 18 to 34 are willing to pay higher prices for home heating if it led to less emissions, in comparison to 33% of those aged over 55, but only 49% of the former group expect prices to rise, in contrast to 74% of the latter group. The other socio-demographic characteristic that shows a clear trend across products and services is that of educational qualifications. Overall, there was greater willingness to pay if a respondent had higher qualifications, but they were also more likely to believe that pursuing net zero would lead to higher prices.

Finally, while expectations around price rises remained similar across political groups, Leave and Conservative voters were much less likely to report willingness to pay more for products if this led to lower greenhouse gas emissions. For example, only 33% of Conservative voters were willing to pay more for household electricity, while 57% were not willing to pay more at all. In fact, while a plurality of Remain voters were willing to pay more for all products and services with the aim of producing less emissions, Leave voters were in contrast more likely to report they would not be willing to pay those higher prices.

## Conclusion

This chapter has revealed three trends about public attitudes towards the responsibility of individuals to net zero. First, that when changes to help net zero are considered without a price tag, greater numbers are prepared to consider changing their behaviour than not. In fact, a substantive number of individuals have already taken at least some action to help reduce greenhouse gas emissions.

However, once behavioural changes for net zero are associated with price increases, public attitudes turn noticeably negative, with there being a fairly even split between the number of individuals who would be willing to pay more and those who would not for different products and services. There is an expectation from a majority of the public that all products and services we polled would increase in price as a result of the net zero target.

However, it is promising that a large number of older people and Conservative and Leave voters has already undertaken a number of behavioural changes to support net zero, and that young people are the most open to behavioural changes to reduce greenhouse gas emissions. This suggests that as we progress towards net zero, we will be able to build on the behavioural actions already taken by older generations.

The next chapter will explore public attitudes towards the responsibility of another crucial actor – the government – towards delivering net zero.

## Chapter 5: The remit of government

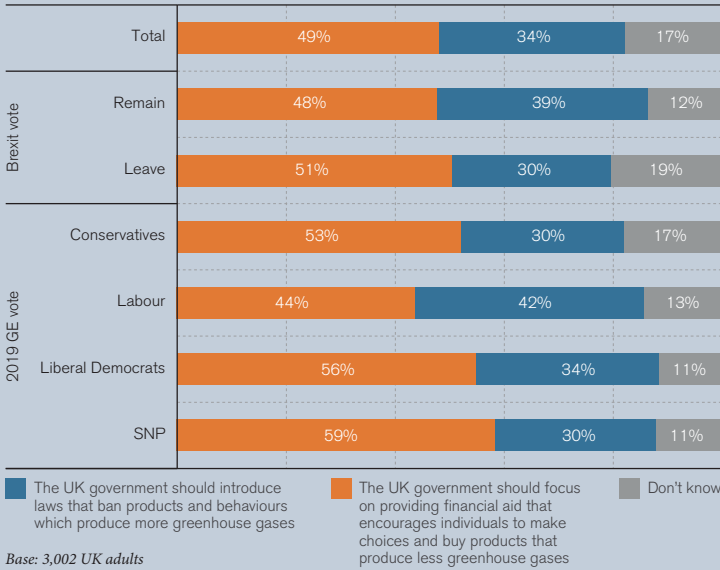
With the previous chapter examining attitudes on the responsibility of individuals, this chapter examines public attitudes towards government's role in helping to achieve net zero greenhouse gas emissions. As highlighted in Chapter Three, national government is seen as the most responsible actor for achieving net zero, so we wanted to explore further how best the public think the government could facilitate decarbonisation.

### Incentivise or punish?

Government action to lead to behavioural changes by different individuals and organisations can broadly fall into two categories: incentives ('carrots') or punishments ('sticks').

Our polling examined whether the public have a preference towards attempting to use financial incentives to encourage behaviour choices by individuals which lead to fewer emissions, or through laws and regulations that discourage or punish choices by individuals which lead to more emissions. The results are displayed in Chart 5.1 below.

**Chart 5.1. Views on how government should implement policies to reduce net zero emissions of greenhouse gases by the public, by Brexit and 2019 General Election vote**

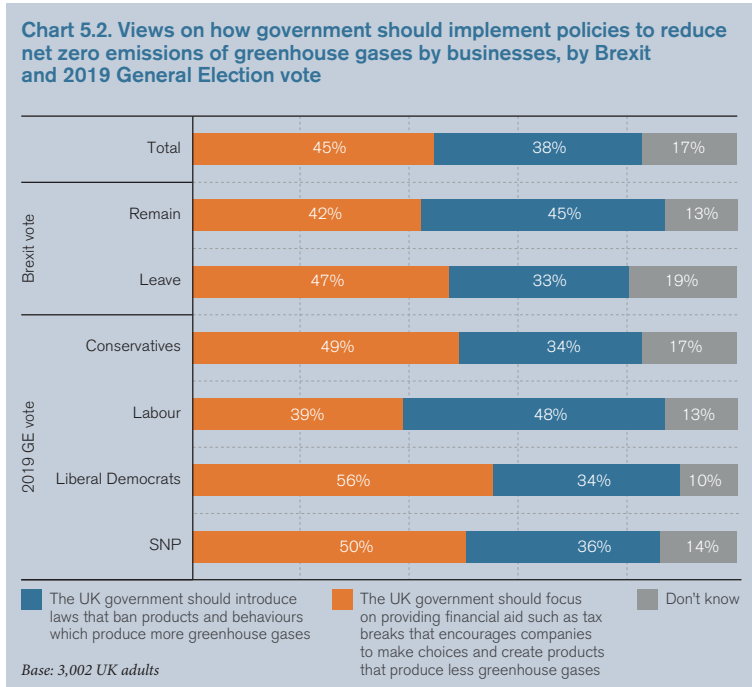


As Chart 5.1 above shows, ‘carrots’ are preferred to ‘sticks’ when policy is targeting members of the public, with 49% preferring measures such as financial aid for individuals to make better choices on emissions, in comparison to 34% who prefer laws that would ban polluting behaviours. Government helping people make better choices is preferred, but not by a majority, across different socio-demographic factors we tested, including gender, age, household tenure and education level.

Slightly more notable differences were observed in terms of voting history. While Remain (48%) and Leave (51%) had similar levels of support for ‘carrots’ for the public, Remain voters (39%) also had a higher preference for ‘sticks’ than Leave voters (30%). In terms of party support, while notable majorities of Conservative (53%), Liberal Democrat (56%) and SNP (59%) preferred ‘carrots’, Labour opinion

was much more split, with 44% preferring ‘carrots’ for the public, while 42% preferred ‘sticks’.

We also tested what the public thought about the use of ‘carrots’ and ‘sticks’ on businesses, not just individuals. The results are shown in Chart 5.2 below.



As Chart 5.2 above shows, views are similar when the same question is asked in reference to businesses, with 45% of the public preferring incentives that encourage companies to make better choices, while 38% prefer introducing bans on polluting behaviour. This does not vary significantly across socio-demographic groups, with the exception of education, where those with higher levels of education are slightly more likely to prefer ‘sticks’ for businesses that produce higher emissions: 42% of those with undergraduate or higher qualification prefer ‘sticks’

in contrast to 32% of those with a highest qualification below GCSE.

In terms of political views, a split between Remain and Leave voters emerges, with the former preferring ‘sticks’ (45%) over ‘carrots’ (42%) by a small margin in relation to changing behaviour of businesses, while Leave voters are far more likely to prefer ‘carrots’ (47%) to ‘sticks’ (33%). Similarly, Labour voters prefers measures such as bans to encourage lower emissions from businesses over financial aid (48% and 39% respectively). However, Conservative, Liberal Democrat and SNP voters tend to support measures such as financial aid over bans by notable margins, as seen in Chart 5.2 above.

### **Bills or taxes?**

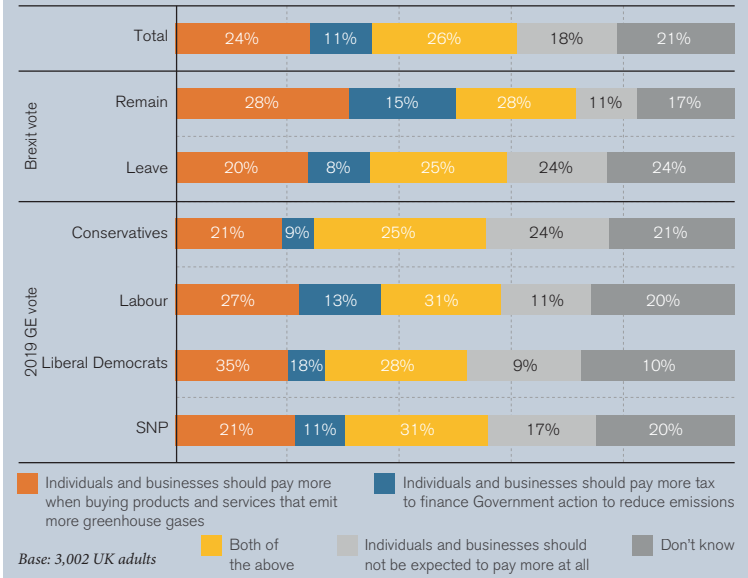
The transition to net zero will be costly; the CCC have estimated that it will cost between 1% and 2% of GDP.<sup>27</sup> Indeed, Chapter Four demonstrated that there is a widespread expectation from the public that prices will rise for various products and services as a result of the net zero legislation.

But policymakers do have a choice: should the cost of deep decarbonisation be paid for through higher taxes or through higher bills? Or, perhaps a mixture of both? And is the public receptive to pay more in taxes or bills to finance deep decarbonisation in the first place? Public attitudes are fairly divided on these approaches, as Chart 5.3 below shows.

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27. The CCC, “Net Zero – The UK’s contribution to stopping global warming”, <https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/> (2019), 15.

**Chart 5.3. Views on how to the government should finance significant action needed to achieve net zero emissions by 2050, by Brexit and 2019 General Election vote**



As Chart 5.3 above demonstrates, 24% of the public would prefer focusing on bills to finance action to achieve net zero greenhouse emissions by 2050, 11% prefer focusing on taxation, 26% believe that both approaches are needed, and 18% believe individuals and businesses should not pay more.

These views are fairly constant across socio-demographic groups, with the exception of age. Those between the age of 18 and 34 are most likely to believe that the focus should be placed on individuals and businesses paying more for polluting products (31%), and are least likely to believe that individuals and businesses should not be expected to pay more at all (11%). In contrast, those over the age of 55 are most likely to believe that a mixture of paying more when buying polluting products and paying more tax broadly to finance government action is



needed (31%), but are least likely to report that only paying more tax (6%) should be the main way.

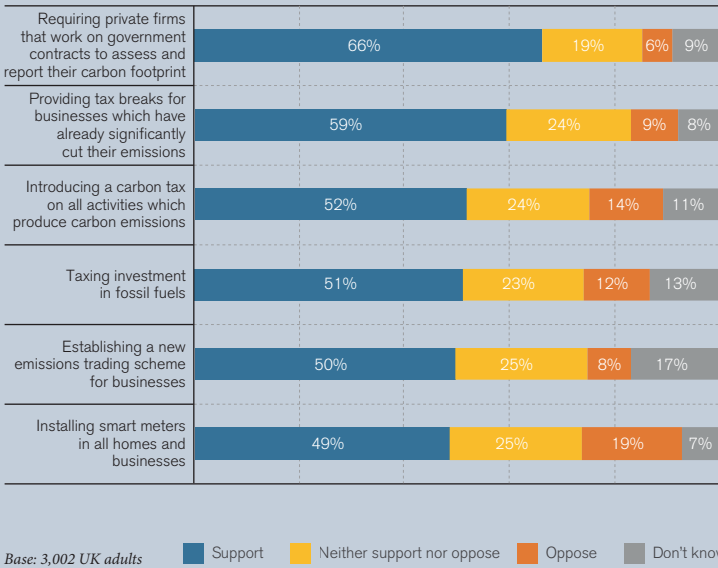
There are also some notable divisions by political groups, as Chart 5.3 above shows. Remain voters are far less likely to think that individuals should not be expected to pay more at all to finance net zero (11%) in comparison to Leave voters (24%). Conservative voters are also the most likely to think that people should not be expected to pay more (24%) in comparison to SNP (17%), Labour (11%) and Liberal Democrat (9%) voters. However, all political groups prefer to avoid only relying on broad taxes, and would rather see people pay more for polluting products or a mixture of these approaches.

## High-profile policies

To further our understanding of people's views on government policy, our polling tested support for six specific high-profile policies, shown below in Chart 5.4. These were chosen because, first, they are widely proposed by different individuals and organisations within public life to support delivery of net zero. And, second, because they represent a mixture of approaches government could take – both 'carrots' and 'sticks'.

The UK public expresses high levels of support for all six high-profile policies polled, ranging from the most popular, requiring firms that work for government to assess and report on their carbon footprint (66%), to installing smart meters in all homes and businesses which just under half (49%) support. This even includes approval of a broad carbon tax, with 52% support, though we would expect support to vary significantly under different specifications of such a tax. The breadth of support suggests that the public is generally interested in a variety of policy approaches from government to achieve net zero emissions. With 66% support from the public, a popular policy from the government would be to reform their procurement process to focus on carbon footprint of companies.

**Chart 5.4. Support for specific government policies to achieve net zero greenhouse gas emissions by 2050**



There are some notable differences across socio-demographic groups, particularly in terms of education level. Those with lower levels of education are less likely to express support for all high-profile environmental policies. While there are majorities across education groups for the most popular policy, requiring private firms that work on government contracts to assess and report their carbon footprint, there is still a 21% point difference between those whose highest education level is below GCSE (51%) and those who have an undergraduate or higher level (72%). The largest gap is seen on taxing investment in fossil fuels, where 31% of the former support the policy, in comparison to 62% of the latter.

However, what must be noted is that opposition levels actually tend to be similar across educational groups. Those with lower education levels were far more likely to say 'neither support nor oppose' or 'don't know' about the proposed high-profile policies, which explains the vast

majority of the difference in levels of support.

Other differences across socio-demographics groups were mostly minor, with the interesting exception of attitudes towards smart meters by age. While 57% of those aged 18 to 34 supported implementing smart meters across households and businesses, this fell to 51% of 35 to 54 year olds and 40% of those over 55. While younger people were marginally more likely to support other policies, this was the only area where a large divergence was observed.

Further differences can be seen across political groups. There are some substantive differences between Remain and Leave voters, with the former more likely to support all high-profile policies proposed to reach net zero emissions. The smallest difference, of 3% points, is on providing tax breaks for businesses which have cut emissions, while the largest difference, of 20% points, is on taxing investment of fossil fuels.

Conservative voters tend to also be less likely to support all the proposed high-profile policies than members of other parties, particularly Labour voters. In fact, levels of support amongst Labour and Remain voters, and Conservative and Leave voters, are very similar. For example, 63% of Labour voters support taxing investment on fossil fuels, as opposed to 45% of Conservatives.

## **Government subsidies**

Government not only has the power to use taxes and regulations to finance the transition to net zero, but can also offer financial support through subsidies to encourage behavioural change by individuals and institutions. As this chapter earlier revealed, the public tends to prefer such ‘carrots’.

Chart 5.5 below shows levels of support for subsidies for individuals and businesses for different types of products and services. Of course, some of these subsidies already exist. For example, the plug-in grant is a subsidy to support people who purchase electric vehicles, and the Energy Company Obligation (ECO) scheme is a subsidy provided for low-income households to retrofit their homes with specific energy efficiency measures.

**Chart 5.5. Views on offering individuals and businesses financial subsidies for adopting changes and behaviours to help achieve net zero greenhouse gas emissions by 2050**

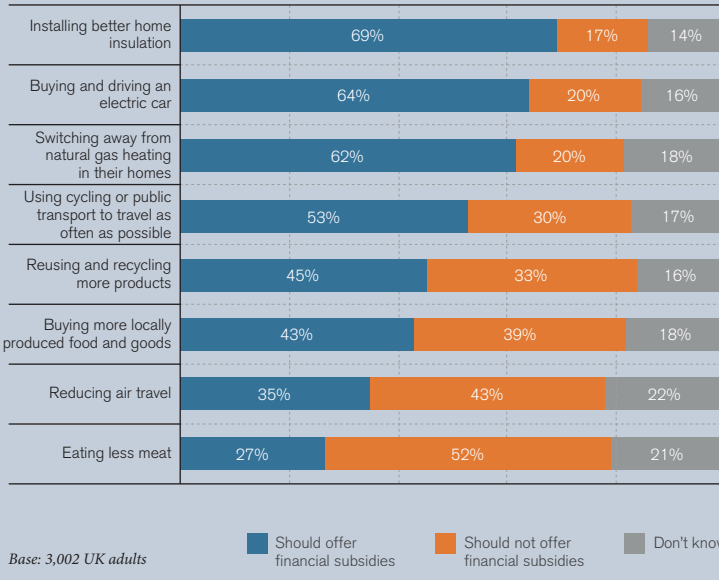


Chart 5.5 illustrates that there is majority support for a number of subsidies, especially installing better home insulation (69%), using an electric car (64%), switching away from natural gas heating in homes (62%) and using cycling or public transport as main methods of travel (53%). This should be welcome news for the Government as they already, or plan to, offer subsidies – to varying extents – for all of these products and services. There is also plurality support for recycling more products (45%) and buying locally produced goods (43%), but opposition is greater than support on reducing air travel and reducing meat consumption, with the latter facing opposition by a majority of the public (52%).

The most significant socio-demographic divides in views on financial subsidies are age and education level. Installing home insulation is the only product or service which is notably more likely

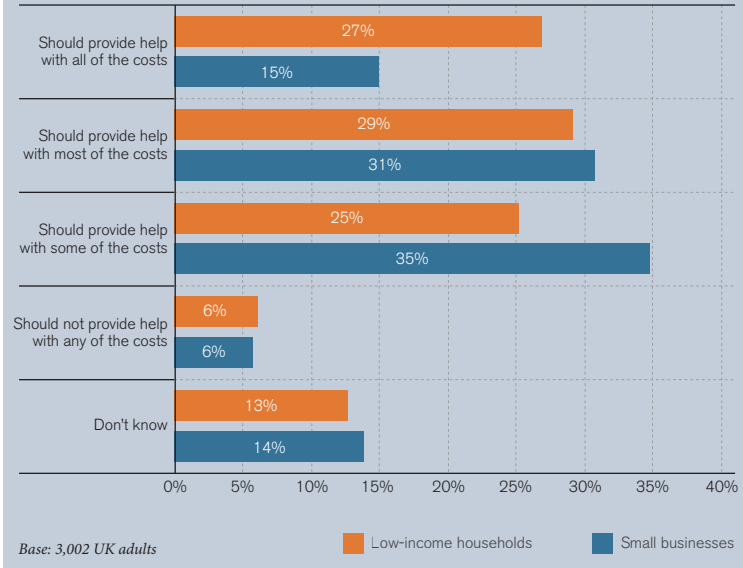
to be supported by those over the age of 55 (75%) in comparison to those under the age of 34 (63%). While other popular measures enjoy similar levels of support across age groups, less popular subsidies around reducing air travel and eating less meat have significant age gaps, with younger people more likely to support the government encouraging these changes financially. For example, while 40% of 18 to 34 year olds support subsidies for eating less meat, this falls to 17% among those over 55.

On the other hand, lower levels of education are consistently associated with lower levels of support for government subsidies to encourage changes in behaviour. Seventy-four percent of those with an undergraduate or higher qualification support subsidies for home insulation, and 69% support subsidies for switching away from natural gas heating. This falls to 58% and 48% respectively for those whose highest qualification is below GCSE. However, this is driven by a higher rate of “don’t know” responses among respondents with lower levels of education, rather than higher levels of opposition.

Furthermore, Leave and Conservative voters are consistently less likely to support introducing subsidies to change behaviour, though the gap between them and Remain voters and voters of left-leaning parties is small on some of the subsidies. For example, while 58% of both Leave and Conservative voters support subsidies for switching away from natural gas heating, this rises to 69% among Remain voters and to 68% among Labour voters.

Finally, many measures required of individuals and businesses to achieve net zero, such as insulation, do not come cheap. Hence, low-income households and small enterprises are likely to face significant financial challenges in implementing them. However, as Chart 5.6 below shows, there is widespread support for government to assist them.

**Chart 5.6. Views on government financial help to low-income households and small businesses who cannot afford to take steps to achieve net zero emissions**



As seen in Chart 5.6 above, there is a very high level of support for providing help with at least some costs (all, most or some costs): 81% for low-income households and 80% for small businesses. Hence, there is a large majority for some government subsidy to support low-income individuals and small businesses with the transition to net zero. Furthermore, 27% of the public think that low-income households should receive help with all of the costs, and 29% think so about most of the costs, indicating that most of the public would support significant government action. In contrast, only 15% think that small businesses should receive help with all of the costs, indicating that the public wishes to aid them in a more limited manner.

High levels of support for at least some financial help to both individuals and businesses are observed across all socio-demographic groups, with the lowest figure being 75% in some regions of the UK, indicating a

broad consensus on the issue. While Leave and Conservative voters are marginally less likely to be supportive overall of targeted government support and are more likely to choose the option of helping with only some of the costs, fitting the pattern observed across the report, there is still majority support for supporting both groups with at least some costs.

## Conclusion

This chapter has shown that the public is fairly divided on how the government can best support the transition to net zero. While most think that focus should be placed on providing incentives for individuals and businesses to make better choices, a significant minority supports a more punitive approach which emphasises bans on polluting products.

There is no clear agreement on how government should ensure the financing of the transition to net zero, though higher bills on products and services seem to be preferred over higher taxes.

When asked about specific government policies, both incentive-based and punishment-based policies were supported by the majority of the UK public, though the former tended to be supported at a higher rate. Furthermore, while support for government subsidies for action to help achieve net zero is mixed, with some actions such as installing home insulation and switching away from natural gas heating more likely to receive support, assisting low-income households and small businesses was strongly supported.

Age, education levels and political views were recurring factors in divergence of views. Younger people, those with higher education levels, and Remain and Labour voters, tended to be more supportive of specific government policies and of providing both broad and specific subsidies, highlighting the trend of such groups being more likely to support actions to achieve net zero across this report.

Having examined public attitudes of the role of individuals and government in helping to deliver net zero, in the next chapter, we explore public views on the role of business in reaching net zero.

## Chapter 6: **The responsibility of businesses**

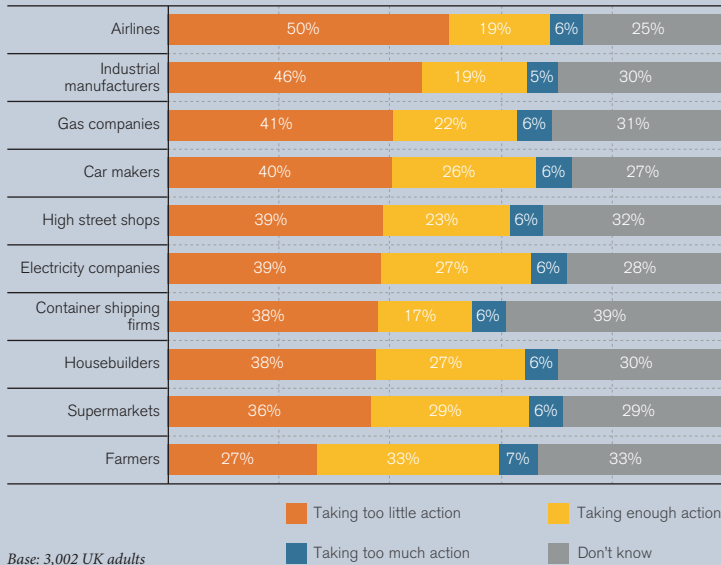
Having examined public attitudes towards the role of individuals and the government, the report now turns to public perceptions of the responsibility of businesses helping to achieve net zero. We will begin by looking at perceptions of particular types of businesses in terms of action that they have already taken, and then examine support for several actions that businesses could adopt to help achieve the net zero target.

### **Perception of different types of businesses**

We investigated perceptions of different businesses and whether it was perceived that they are doing enough to help achieve net zero greenhouse gas emissions by 2050, as seen in Chart 6.1 below.



**Chart 6.1. Views on whether specific types of businesses are taking enough action to achieve net zero greenhouse gas emissions by 2050**



Perceptions notably vary for different types of businesses. While a majority (50%) believe that airlines are not taking enough action, making it the industry that the public are most critical about in their net zero responsibilities, only 27% say the same about farmers, making it the type of business the public is least critical about. With all types of businesses we have asked about other than farmers, more people thought that they were not taking enough action than those who thought they were doing enough or too much. This suggests that the public are more likely to believe that more action by most of the types of businesses we have asked about is required, though the high rate of ‘don’t know’ responses also highlights lack of information and/or engagement.

There are some interesting patterns in socio-demographic views on this issue. First, younger age groups are actually less likely to believe

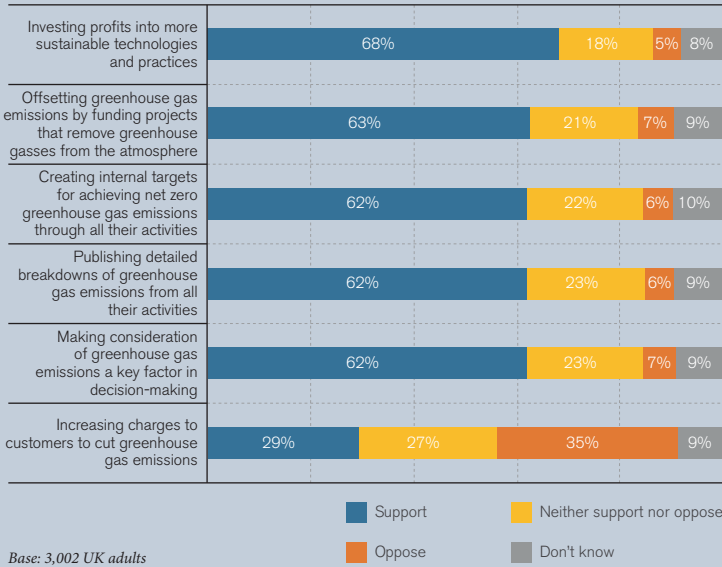
that all types of businesses are taking too little action to achieve net zero greenhouse gas emissions in comparison to older groups, with the perception that they are doing enough being more widespread. This gap is most notable on airlines, where there is a 16% point spread, with 57% of those over 55 saying they are taking too little action, as opposed to 41% of those who are between 18 and 34. Second, those with lower education levels are also less likely to believe that firms are taking too little action. This is particularly noticeable for those whose highest education is below GCSE: only 34% of those with below GCSE as their highest qualification think airlines are taking too little action, as opposed to 53% of those with an undergraduate degree or higher qualification.

As usual, there is also differentiation across political views, shown in Chart 6.1 above. Remain and Labour voters are consistently more likely to express the view that all different groups of businesses are taking too little action to achieve net zero, while Leave, Conservative and Liberal Democrat voters are less likely to express such views. While 57% of Remain and 61% of Labour voters see airlines as taking too little action, this falls to 45% among Leave voters and 46% among Conservatives. However, across political groups the ordering of industries remains similar, with airlines having the strongest perception of not taking enough action, while farmers are at the opposite end.

## **Actions by businesses**

Considering the significant numbers of people who believe that different types of businesses are taking too little action, we asked about support on specific policies private businesses could take to help achieve net zero greenhouse gas emissions, shown in Chart 6.2 below. These were chosen because they are high-profile actions that some businesses are already undertaking.

**Chart 6.2. Support and opposition to specific actions by businesses to help achieve net zero greenhouse gas emissions by 2050**



The public expresses high levels of support for actions where customers are not directly affected by the changes. The action which is the most popular is firms investing profits into more sustainable technologies and practices (68% support), and more than 60% also support a wide range of other actions, including offsetting emissions (63%), creating internal targets (62%), providing breakdowns of emissions (62%), and raising the importance of emissions in decision-making (62%). However, the public is split on increasing charges to customers, with 35% opposing and 29% supporting. This mirrors the findings in Chapter Four, which indicate that a significant part of the public would not be willing to pay more for various products and services if they produced less greenhouse gases.

The only socio-demographic factor persistently linked to different levels of support for these high-profile actions is education levels.

Those with lower education levels, particularly those with below GCSE as their highest qualification, are less likely to support all of the policies we have polled. The largest gap is observed for making emissions a key factor in decision-making, where there is a 27% point gap between those with below GCSE as their education level (44%) and those with an undergraduate degree or higher (69%). However, once again, it should be noted that lower levels of support do not translate to higher levels of opposition: those with lower levels of education are simply much more likely to respond either “neither support nor oppose” or “don’t know” for all of the options, which explains most of the gap.

Leave and Conservative voters are less likely to express support for all of the high-profile business actions we have polled, though once again most of the gap is explained by a higher tendency to respond “neither support nor oppose” or “don’t know” among these groups. For example, 73% of Remain and 71% of Labour voters support companies creating internal targets for achieving net zero, as opposed to 54% of Leave and 58% of Conservative voters.

However, on one policy, increasing charges to customers to cut greenhouse gas emissions, lower levels of support amongst those with lower education levels, Leave voters and Conservative voters is driven primarily by opposition, rather than ambivalence or a lack of view.

## Conclusion

This chapter has shown that a plurality of the public believe too little action is being taken by nearly all different types of businesses to deliver net zero. While some differences in perception emerge across age, education levels, Brexit vote and 2019 general election support, the overall numbers suggest that the public believes that businesses should be doing more.

And there is a degree of consensus on the actions that businesses should be undertaking – especially on increased investment, offsetting greenhouse gasses and decision-making to support the pursuit of net zero greenhouse gas emissions by 2050. However, it is clear that

policies where the costs are directly passed on to customers will face a much frostier reception, meaning that businesses will face substantial tradeoffs as the UK moves towards reaching a net zero target. The next chapter explores the sector that will be one of the most affected in this transition: energy.

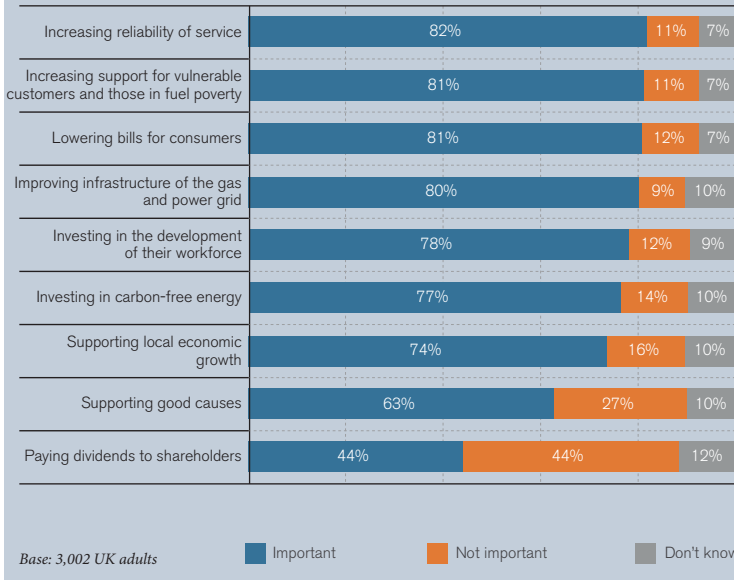
## Chapter 7: **The energy sector**

As highlighted in the previous chapter, a plurality of the public thinks that gas and electricity companies are not doing enough to help UK reach the net zero target, while a significant number do not have an opinion. The energy sector needs to deeply decarbonise in the coming decades, especially in regards to natural gas, which makes it vital to examine public opinion towards the challenges it faces. This chapter looks at perceptions of the current conduct of energy companies, attitudes towards government intervention in the sector, and the role of different energy sources in achieving net zero.

### **Conduct of energy companies**

We examined public perceptions around how energy companies should utilise profit. As can be seen from Chart 7.1 below, a majority of the public views all activities polled, other than paying dividends to shareholders, as an important way to utilise profit.

**Chart 7.1. Views on importance of different ways energy companies should utilise profit**



Majorities are found for the importance of spending profit on activities which directly benefit customers: first and foremost, increasing reliability of service (82%), followed by lowering bills for consumers (81%). A majority of the public also thinks it is important for the profit of energy companies to be spent on increasing support for vulnerable customers (81%), improving infrastructure (78%), supporting local economic growth (74%) and supporting good causes (63%). Though a clear majority (77%) believe it is important for energy companies to invest into carbon-free energy, an important aspect of delivering net zero, this is not as popular as using profits to directly benefit consumers.

There is some variation among socio-demographic groups, primarily in terms of age and education level. Younger people tend to think that most of the proposed activities to use profits are less

important, with the largest gap between those aged 18 to 34 and those over 55 observed on increasing reliability of service, of 21% points. However, it is intriguing that on supporting good causes and paying dividends to shareholders, the reverse pattern is observed, though the differences by age group are much smaller. Furthermore, those with below GCSE as their highest education level are also less likely than others to describe any of the activities we have polled as important, with only 63% saying that investing in carbon-free energy is important, as opposed to 81% of those with an undergraduate degree or higher.

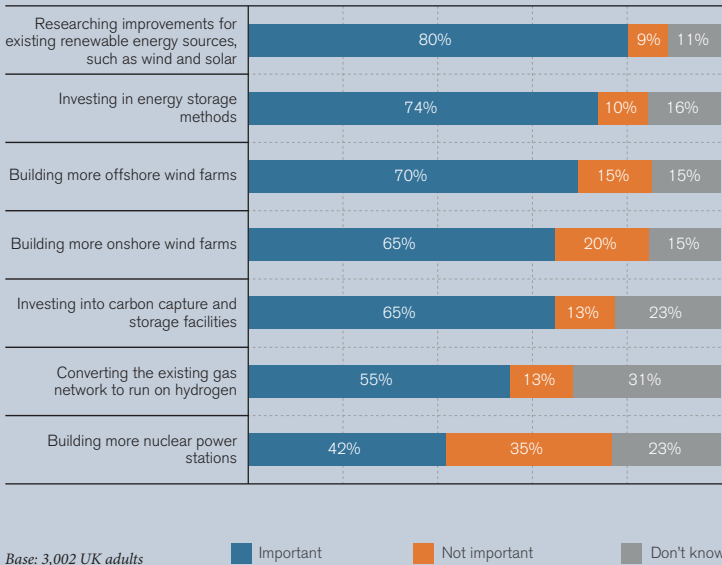
Finally, we did not find large differences in opinion on this question by political affiliation, with the exception of paying dividends to shareholders: Conservative voters are more likely to describe it as important (55%) than Labour (37%) and Liberal Democrat (45%) voters.

Overall, this polling suggests that the public thinks that energy companies should invest profits in a wide variety of ways, especially that which are beneficial for customers.

We also examined in detail attitudes towards policies that energy companies could pursue to achieve net zero greenhouse gas emissions, as seen in Chart 7.2 below. These policies represent a range of approaches to renewable energy technology that are familiar to the public.



**Chart 7.2. Views on implementing the following ideas by energy companies to achieve net zero greenhouse emissions by 2050**



As can be seen from Chart 7.2 above, the majority of the UK public thinks that almost all of the measures that we polled have an important role to play in achieving net zero. General research into renewable energy sources is seen as most important (80%), while building offshore (70%) and onshore (65%) wind farms is seen as important by a similar proportion. Importance of converting the existing gas network to run on hydrogen is seen by 55%, though there is also a high proportion of ‘don’t know’ responses (31%).

There is, however, no majority for building more nuclear power stations, though more people find it important (42%) than not important (35%). Furthermore, the public is less familiar with some options: while only 11% do not hold an opinion on researching improvements for existing renewable energy sources, 31% do not have an opinion on converting the existing gas network to run on hydrogen.

Differences across age are less pronounced than on other responses throughout this report, with only investing in energy storage methods and converting existing gas network to run on hydrogen seeing notable differences across age, with 61% of 18 to 34 year olds seeing the latter as important, in comparison to 49% of those over 55.

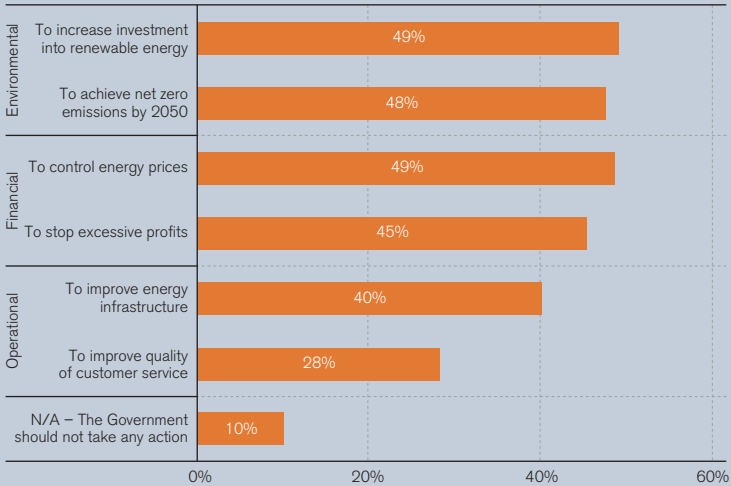
However, higher levels of education are once again linked with higher levels of seeing the ideas we polled as important, with the exception of nuclear power stations, where views are similar across education levels. These differences can be explained by a combination of higher levels of opposition and “don’t knows” among those with lower education levels. Furthermore, one of the few notable gender differences is on perceptions of nuclear stations: while 52% of men think they are important to achieve net zero, only 31% of women express the same opinion.

Differences across political groups are less prominent than usual. Remain voters are slightly more likely to describe all ideas polled as important for achieving net zero than Leave voters, with the exception of building more nuclear power stations. The largest gap in opinion is on energy companies building more onshore wind farms, where 73% of Remain voters, but only 58% of Leave voters, see it as important. Across political parties the gaps are also fairly small, with Conservative voters less likely to support building onshore wind farms (60%) and converting existing gas network to run on hydrogen (54%) than members of other parties. Nuclear power stations also seeing a notable divide in opinion: while 52% of Conservative and 47% of Liberal Democrat voters think they are important, this falls to 34% of Labour voters and 33% of SNP voters.

## **Government intervention in the energy sector**

The public have strong views on how energy companies should utilise profit and achieve net zero, but does the government also have a role? We examined public support for environmental, financial and operational reasons for government intervention in the energy sector, as shown in Chart 7.3 below.

**Chart 7.3. Support for reasons government should take action in the energy sector**



Base: 3,002 UK adults

As seen in Chart 7.3 above, with only 10% of respondents not supporting any of the reasons for government intervention in the energy sector, it is clear that the public is happy for the government to intervene in the energy sector for particular purposes. However, there is a significant difference of opinion, with no reason receiving majority support, though environmental goals such as increasing investment into renewables (49%) and achieving net zero emissions by 2050 (48%) and financial goals such as managing energy prices (49%) and stopping excess profits (45%) do come close. Operational reasons such as improving energy infrastructure (40%) and quality of customer service (28%) are less popular reasons for government intervention.

On environmental reasons, those with higher education levels, Remain voters, and Labour, Liberal Democrat and SNP voters are more likely to support government intervention: for example, while 57% of Remain voters support intervention to help achieve net zero emissions

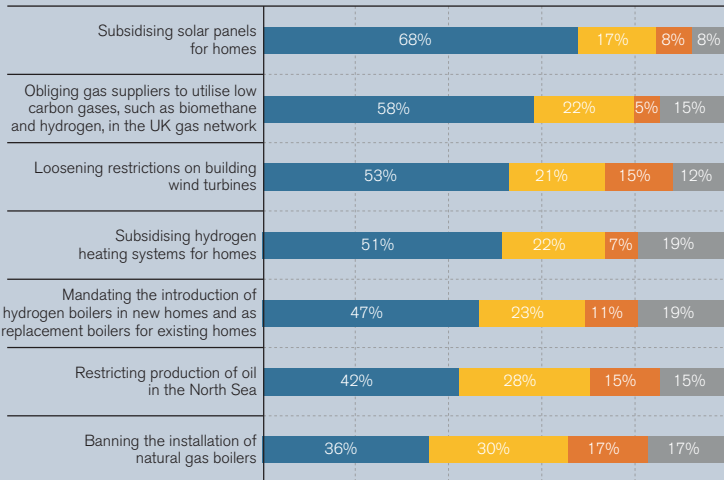
by 2050, this falls to 39% among Leave voters.

However, differences are much less prominent around financial reasons for government intervention, with the exception of age, where younger people are less likely to support intervention: only 39% of 18 to 34 year olds want intervention to control energy prices, compared to 56% of those over 55.

Finally, operational reasons for intervention see some differences on intervening in the energy sector to improve infrastructure, with those over 55 (45%) and those with a undergraduate degree or a higher qualification (46%) more likely to support such intervention.

A plurality of the public supports government intervention for the purpose of reaching the net zero target. We have decided to examine this further by polling support for specific government interventions in the energy sector to encourage greenhouse gas emission reduction, as shown in Chart 7.4 below.

**Chart 7.4. Support and opposition for government interventions in the energy sector to encourage reduction and elimination of greenhouse gas emissions**



Base: 3,002 UK adults

Support

Neither support nor oppose

Oppose

Don't know

As can be seen from Chart 7.4 above, there is a significant spread in support for various government interventions in the energy sector to support net zero emissions, ranging from 68% support for subsidising solar panels in homes to only 36% support for banning the installation of natural gas boilers. Interestingly, a majority (53%) support loosening regulation in building wind turbines. A bigger majority (58%) support obliging gas suppliers to utilise low carbon gases, such as biomethane and hydrogen – a Bright Blue policy which was adopted by the UK Government in 2019.<sup>28</sup>

It is notable that government interventions which are bans and restrictions tend to be less popular than those which are subsidies and deregulation. This echoes the findings in Chapter Five, where we found more of the public preferring the latter policy approach.

Socio-demographic differences in public opinion on specific government interventions in the energy market for net zero emissions are again primarily limited to age and education levels. In terms of age, younger people are more likely to express support for most of the interventions polled, with the exception of subsidising solar panels for homes. The largest gap in attitudes is on banning installation of natural gas boilers, which is supported by 50% of 18 to 34 year olds, but only 22% of those aged over 55. On education, once again higher levels of education are associated with higher levels of support for action to eliminate greenhouse gas emissions. This is particularly notable for those who only have a below GCSE level of education, who do not express majority support for any of the interventions, which contrasts with the majority support for all policies other than banning installation of boilers among those whose education level is undergraduate degree or higher.

Remain voters, and Labour and Liberal Democrat voters, are more likely to support all of the interventions examined in comparison to Leave and Conservative voters. Notably, SNP voters are less likely to support restrictions on production of oil in the North Sea, banning

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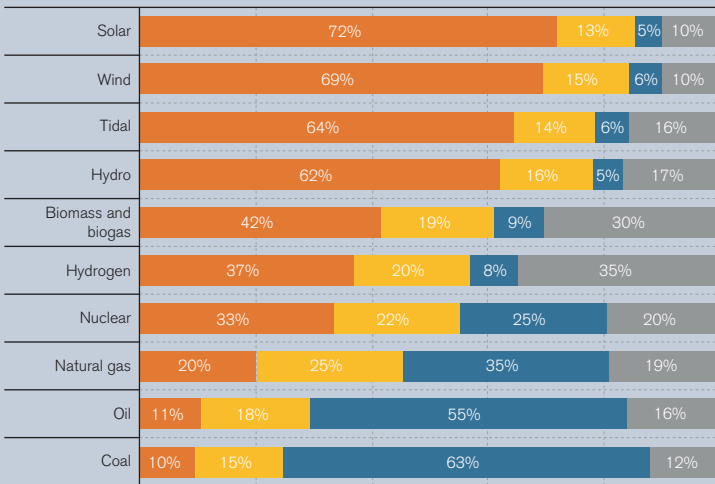
28. Wilf Lytton and Ryan Shorthouse, "Pressure in the pipeline", <https://brightblue.org.uk/wp-content/uploads/2019/02/Pressure-in-the-pipelines.pdf> (2019), 15

of natural gas boilers and subsidising hydrogen heating systems than Labour and Liberal Democrat voters, representing a rare divergence between these voters in this report.

**Box 7.1. Broad attitudes to energy sources**

As part of our examination into the energy sector, we have also looked into public perceptions of different energy sources in terms of their importance for achieving net zero, as shown in Chart 7.5 below.

**Chart 7.5. Perceptions of whether we should use more or less of specific energy sources to achieve net zero greenhouse gas emissions**



Base: 3,002 UK adults

More Same amount as now Less Don't know

Unsurprisingly, large majorities think that we will need to use more solar (72%), wind (69%), tidal (64%) and hydro (62%) energy to achieve the net zero target. Biomass and biogas and hydrogen have lower levels

of support, but still receive plurality support (42% and 37% respectively), and are much less well known in comparison to other energy sources, with large number of respondents saying “don’t know” in reference to them (30% and 35% respectively). Mirroring the responses reported earlier in this chapter, nuclear divides opinion, with 33% thinking we will need to use more and 25% thinking we will need to use less.

Natural gas, oil and coal are the three energy sources where more people believe we will need to use them less to achieve net zero. Majorities think we should use less coal (65%) and oil (53%), while a plurality say the same about natural gas (35%).

Several socio-demographic differences should be observed: first, there is a large difference between men and women on the role of hydrogen and nuclear energy as an energy source. While 50% of men think we will need to use more hydrogen power, only 24% of women think the same. Similarly, while 45% of men think we will need to use more nuclear energy, this falls to 22% among women. While women tend to have higher rates of responding “don’t know” in almost all surveys, the size of the gap is particularly notable on the role of hydrogen as an energy source to achieve net zero: while only 21% of men have responded in such a manner, this rises to 48% among women.

There is a notable age gap on well-known renewable energy sources such as solar, with older individuals more likely to think that we will need to use more of them to achieve the net zero target. The biggest gap is on solar, where only 61% of 18 to 34 year olds believe we should use more, as opposed to 82% of those over 65. This age difference does not emerge on biomass and biogas, hydrogen and nuclear. There is also a gap across education levels, with those who have higher qualifications more likely to believe all non-fossil fuel energy sources will need to be used to a greater degree to reach the net zero target.

Finally, there are only small differences across political groups.

Leave and Conservative voters are only marginally less likely to think that we need to use more renewable energy sources to achieve net zero in comparison to Remain, Labour and Liberal Democrat voters. However, large differences on the role of nuclear energy in achieving net zero should be noted: while 43% of Conservative and 37% of Liberal Democrat voters think we will need to use more of it, this falls to 25% of Labour and 26% of SNP voters.

## Conclusion

This chapter has shown that the public thinks that energy companies should act in a number of ways to ensure that the energy sector can help to achieve net zero. This includes utilising profits to invest into low-carbon energy, but to also consider a range of ideas to achieve the net zero target.

The public tends to support at least some government intervention, with almost half seeing environmental concerns as a justifiable reason. Government interventions that are supported by the public are particularly focused on subsidies and deregulation, to encourage behavioural change, rather than bans and restrictions, again reflecting the public's tendency to prefer to encourage rather than punish behaviour that affects greenhouse gas emissions.

Some differences across socio-demographic and political groups such as age, education, Brexit vote and 2019 General Election vote have been observed, with higher levels of education being particularly notable in influencing perceptions of company policies and government interventions to support changes in the energy sector to achieve net zero. However, in most cases, these differences are due to lack of opinion on a position by specific groups, rather than actual opposition to policies or interventions. Having focused on the supply of energy in this chapter, the next chapter explores public attitudes towards changes that are needed in the demand for energy to help achieve net zero.



## Chapter 8: Energy at home

As highlighted in the recent CCC's report *Net Zero – the UK's contribution to stopping global warming*,<sup>29</sup> low-carbon heating and energy efficient buildings require urgent and much larger take-up if UK is to achieve its net zero target. While household energy efficiency has received much attention over the last decade, the issue of low-carbon heating is only now becoming prominent, and not much engagement with the public has occurred. Hence, in this chapter we examine attitudes of the public towards features of their heating systems, the desirability of low-carbon heating systems and their knowledge and perceptions of home energy efficiency measures.

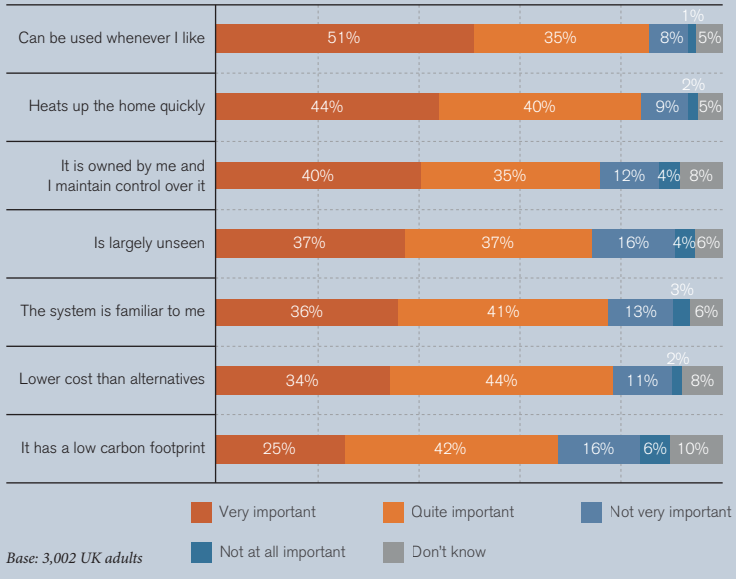
### Heating systems

We first examined what the public thinks are the most important attributes of heating systems in Chart 8.1 below. Doing this will enable us to see just how important reducing carbon footprint is for people when thinking about heating their homes.

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29. The CCC, "Net Zero — The UK's contribution to stopping global warming", <https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/> (2019), 11.

Chart 8.1. Importance of specific attributes of home heating systems

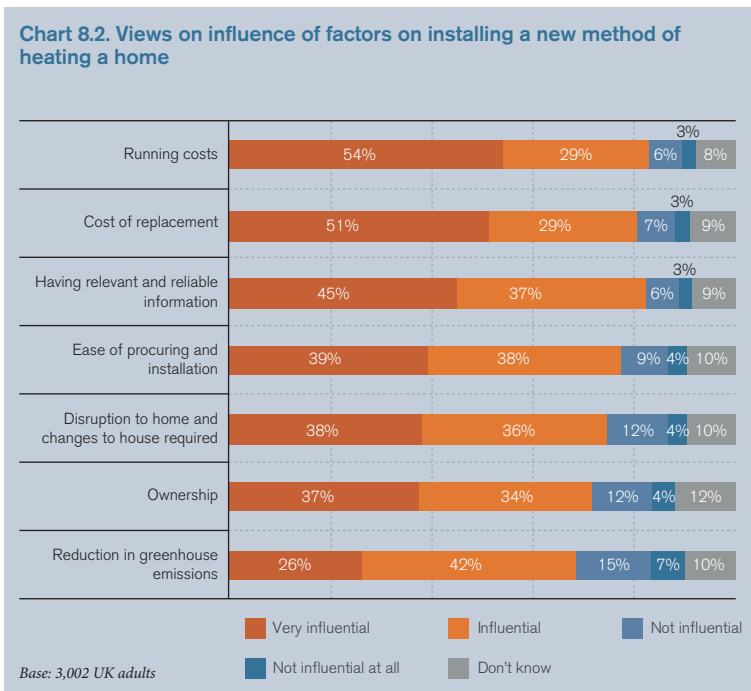


As can be seen from Chart 8.1 above, a majority of the public sees all of the functions that we have polled as important ('very important' and 'quite important'). It is notable that attributes related to control of the system, such as being able to use it at any point, heating up quickly and ownership, are seen as some of the most important, with 86%, 84% and 75% describing it as important respectively. Familiarity with the system and it being lower cost than alternatives is also seen as valuable, with 77% and 78% describing it as important respectively. Though a low carbon footprint is seen as important by a majority (67%), this is lower than all other options, indicating that low-carbon heating systems will need to compete on a number of functions for widespread adoption, and are unlikely to be of interest to the public if they are perceived to be inferior in terms of these attributes.

Socio-demographic and political characteristics are not associated

with major and persistent differences in perceptions of importance, with the exception of age. For all functions of heating systems other than low-carbon footprint, older individuals are much more likely to describe them as important. For example, while 88% of those aged over 55 say familiarity is important, this falls to 66% for those between 18 and 34.

To further our understanding on how individuals view heating systems, we have also polled how influential specific factors would be on a decision to install a new heating system in Chart 8.2 below. Here we are exploring what would drive someone to switch their heating system.



As can be seen from Chart 8.2 above, all of the factors for installing a new heating system we have asked about are seen as influential ('very influential' and 'influential') by a majority of the public. With running

costs and cost of replacement been seen as influential by a large majority of respondents (83% and 80% respectively), it is clear that the public is sensitive to the price tag of a new heating system. With 82% of the public also describing relevant and reliable information as influential, novel approaches to heating homes will need to be accompanied by efforts to inform the public. In contrast, reduction in greenhouse emissions comes at the bottom, with a majority (68%) saying it is influential. This mirrors the previous question, which showed carbon footprint of a heating system is seen as less important than other attributes.

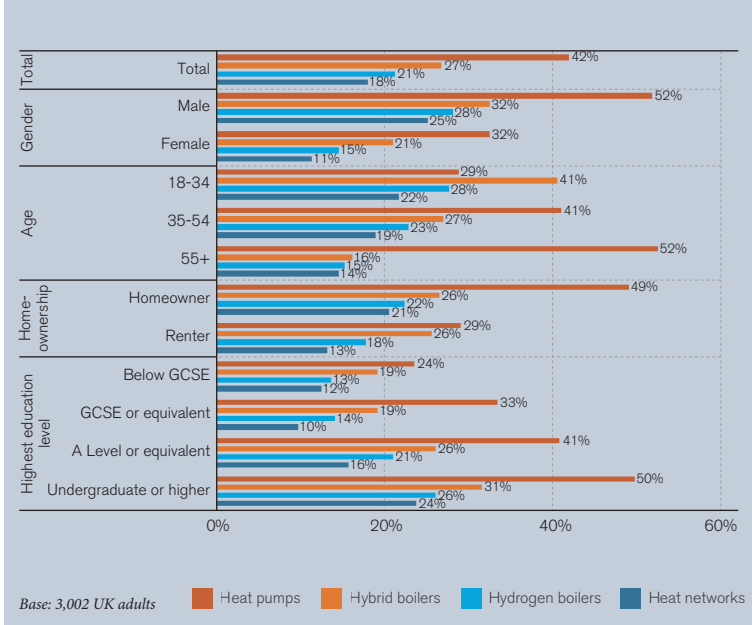
We observe some major socio-demographic differences on this question, with older people, homeowners and those with higher levels of education more likely to rate most factors around installing a new heating system as influential. This is one of the few issues where homeownership became a notable divide, but as the question is concerned with a significant home improvement project, it is likely that renters expressed lower perceptions of influence purely due to this being out of their control.

Furthermore, the only factor where political difference by group was observed was the reduction in greenhouse emissions, where Leave (62%) and Conservative (65%) voters were less likely to rate this issue as influential compared to Remain (74%), Labour (72%) and Liberal Democrat (74%) voters, though a majority of both groups still perceived it as influential in their decision making.

## **Attitudes on low-carbon heating systems**

Having examined what individuals find important in their heating systems and the facts that could influence them to install a new system, we now examine in more detail their knowledge of low-carbon methods to heat homes. As shown in Chart 8.3 below, familiarity with different low-heating carbon systems is low.

**Chart 8.3. Proportion of people who have heard of low-carbon methods of heating homes, by gender, age, homeownership and highest education level**



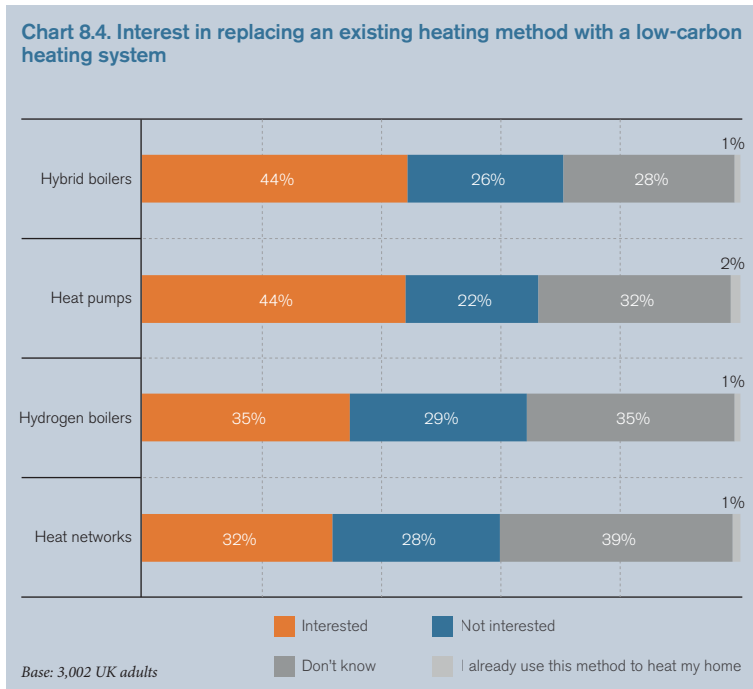
A minority of the public have heard of different low-carbon heating systems. Only 42% of respondents have heard of heat pumps, which is the system with the highest familiarity, in comparison to 46% who have not heard of them. People are even less familiar with hybrid boilers (27% have heard of them), hydrogen boilers (21%) and heat networks (18%). Considering the importance of knowledge and information as a factor in installing new heating systems, this lack of awareness is likely to be a significant barrier to decarbonising heating.

There are some interesting socio-demographic variations, particularly between heat pumps and other low carbon heating methods. Men (52%), those over 55 (52%), homeowners (49%) and people with an undergraduate degree or higher qualifications (50%) are much more likely to have heard of heat pumps compared to women (32%), those aged 18 to 34 (29%), renters (29%) and those

with below GCSE level (24%), indicating that heat pumps are more familiar to specific groups. In contrast, the differences in knowledge of other methods is of a smaller degree, and in some cases the pattern reverses: for example, those aged 18 to 34 are more likely to know about hydrogen boilers (28%) in comparison to those over 55 (15%).

In contrast, there are almost no major differences across political groups, with the exception of a slightly higher familiarity among Conservative and Liberal Democrat voters with heat pumps (50%) in comparison to supporters of Labour (35%).

We also asked individuals about interest in adopting the low-carbon heating systems, as seen in Chart 8.4 below.

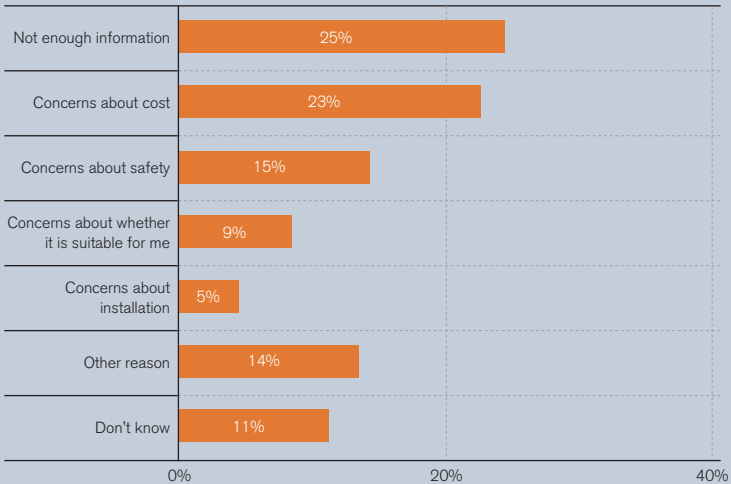


For all four systems, a substantive minority express interest, ranging from 44% for hybrid boilers and heat pumps to 32% for heat networks.

In fact, for hybrid boilers and heat pumps, interest is expressed by a plurality of the public. However, it should also be noted that expression of interest is a fairly weak claim, and does not strongly correspond to actual willingness to adopt such a heating system in practice.

While men, younger people, homeowners and those with higher education levels are more likely to express interest in all four heating systems, this does not always correspond to higher levels of lack of interest among opposing groups. Women and renters are more likely to express “don’t know”, suggesting that their interest could change, whereas older people and those with lower education levels are more likely to express that they are not interested, suggesting that their mind is more set in stone on not wanting to change from their current system. Political divides are not linked to major differences in interest, though Leave and Conservative voters are slightly less likely to express interest in all four low-carbon heating systems compared to others.

We explored the reasons for not being interested in hydrogen and hybrid boilers of those who expressed such an opinion in the previous question, which can be seen in Chart 8.5 below.

**Chart 8.5. Reasons for lack of interest in hybrid and hydrogen boilers**


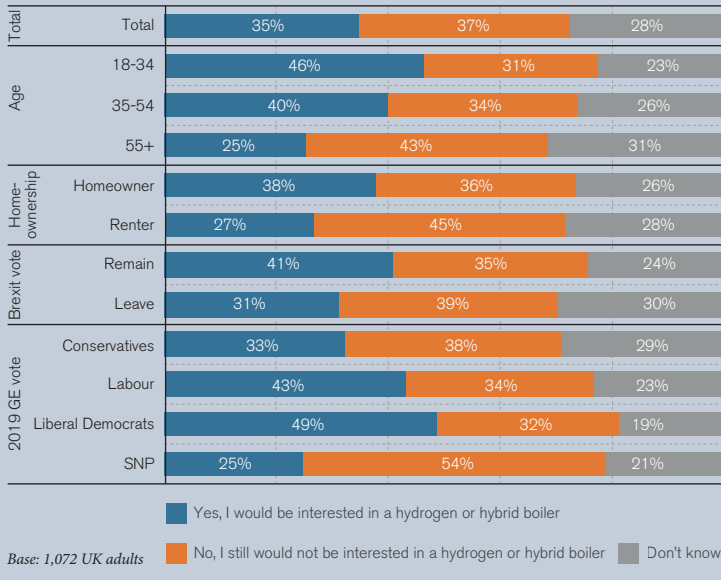
Base: 1,072 UK adults

As shown in Chart 8.5 above, there is a mixture of concerns, though lack of information (25%) and concerns about cost (23%) are the most common reasons, while safety (15%) and suitability (9%) are also raised as issues. This tracks with information and pricing being influential factors when installing a new heating system.

One of the major benefits of introducing hydrogen and hybrid boilers is avoiding major changes to their current heating systems, especially in comparison to installing a heat pump. For those who expressed lack of interest in hydrogen and hybrid boilers, we also asked a question to see how respondents would respond to this information about ease of installation.



**Chart 8.6. If installing a hydrogen or hybrid boiler required no additional changes to your heating system, would you be interested in a hydrogen or hybrid boiler by age, homeownership, and Brexit and 2019 General Election vote**

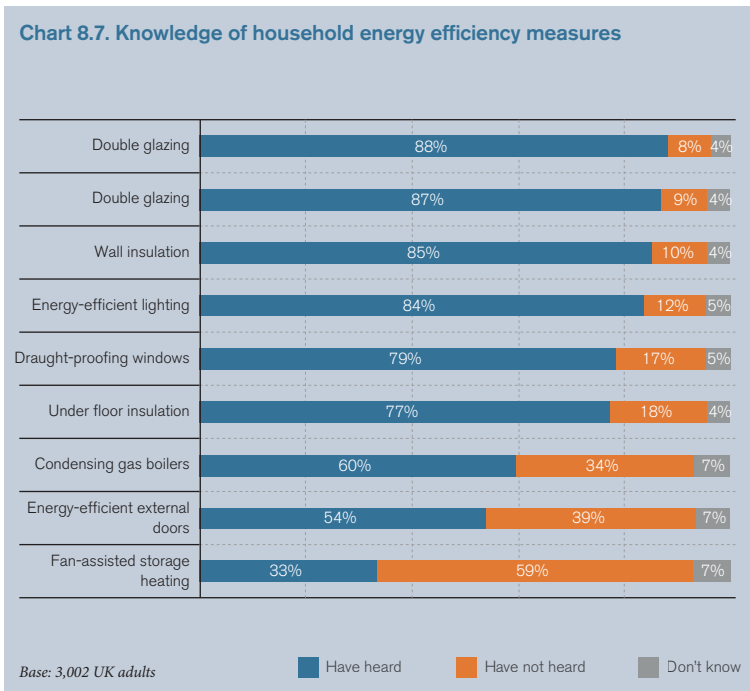


As Chart 8.6 above shows, this additional information has a mixed effect, leading to 35% of those who previously did not express interest now express interest in a hydrogen or hybrid boiler, while 37% state that they still would not be interested. However, there are some variations across socio-demographic and political groups. Those aged between 18 and 34 (46%) and homeowners (38%) are more likely to express interest in a hydrogen-based heating system, suggesting that older people and renters are more likely to have other concerns about changing heating systems, or particularly in case of renters, being unable to change it.

Furthermore, Remain (41%), Labour (43%) and Liberal Democrat (49%) voters are also more likely to be interested in installing a hydrogen or hybrid boiler after receiving this new information. However, as highlighted previously, expression of interest does not by itself mean that people are likely to perform such an action.

## Home energy efficiency measures

Achieving net zero greenhouse gas emissions will necessitate not only significant changes to our heating systems, but will also require significant improvements to their energy efficiency. Hence, we have examined people's knowledge, use and perception of some key energy efficiency home improvements. Chart 8.7 below illustrates public knowledge of different energy efficiency measures.

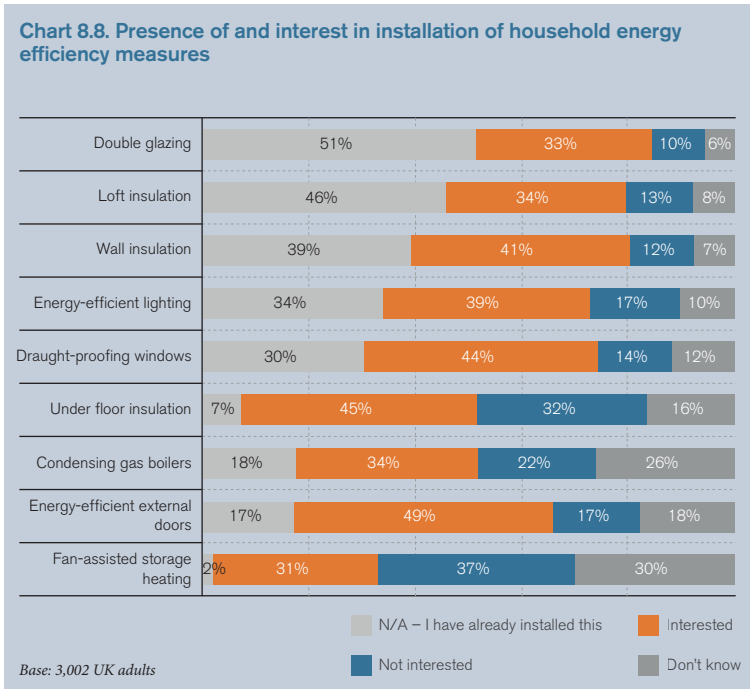


As Chart 8.7 above shows, a firm majority of the public are familiar with almost all of the home energy efficiency improvements, with double glazing (88%), loft insulation (87%), wall insulation (85%) and energy-efficient lighting (84%) most recognised. The only measure which is not recognised by a majority of the public is fan-assisted storage heating, where only 33% have heard of it. Considering the previous public and

private sector efforts on issues such as wall insulation, double-glazing and energy-efficient lighting, this is an unsurprising finding.

In terms of socio-demographic and political divides, age and education levels are the most prominent, with younger people and those with lower education levels less likely to have heard of all the measures mentioned. Though this is likely to be related to lower levels of homeownership among these groups, the gaps between homeowners and renters tend to be fairly small, and they cannot explain in themselves lower awareness amongst young people and those with lower education levels.

Unsurprisingly, levels of installation of different energy efficiency measures closely correspond with knowledge of them, as Chart 8.8 shows below.



Double glazing, the most well known measure, also has the highest adoption rate, at 51%. The only exception to this pattern is under floor insulation, which is known by 77% of the public, but has only been installed by 7%. Furthermore, we also find some levels of interest in installing additional measures, with ‘interested’ responses exceeding ‘not interested’ responses on all measures other than fan-assisted storage heating.

As would be expected, there are significant differences across socio-demographic and political groups. Older people, homeowners, people living outside London, and Conservative and SNP voters are much more likely to already have such measures in their homes, with the exception of under floor insulation and fan-assisted storage heating. Expectedly, this also means that these groups are less likely to express interest in installing such measures. While homeownership rates across these demographics are likely to account for most of the difference, this does suggest that some groups which tend to express higher concerns around environmental matters, such as Labour and Liberal Democrat voters, are more open to energy efficiency measures, but have not installed them in their households yet.

We also examined people’s views on the importance of these home energy efficiency measures to achieving net zero greenhouse gas emissions, as shown in Chart 8.9 below.

**Chart 8.9. Importance of household energy efficiency measures for achieving net zero greenhouse gas emissions**

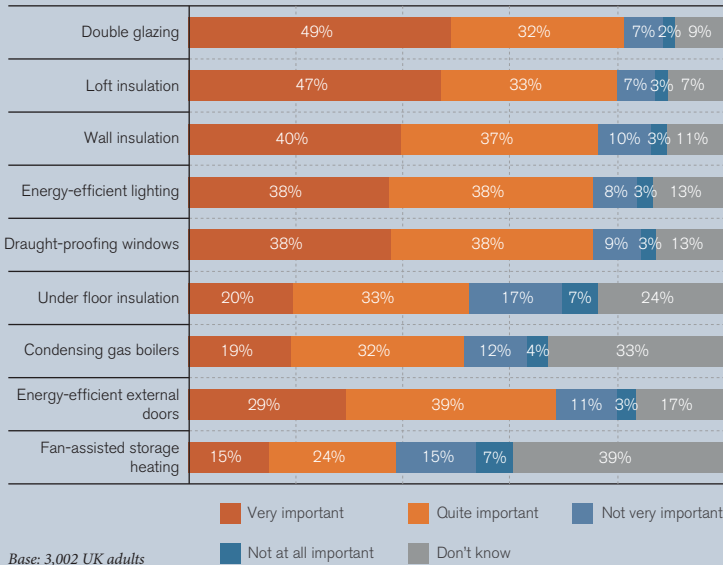


Chart 8.9 shows that a majority of the public rates all of the energy efficiency measures as important (‘very important’ and ‘quite important’) other than fan-assisted storage heating, suggesting that the public recognises the significant role they play in reaching the net zero target. It should be noted that the order in which they are described as ‘very important’ is very similar to both familiarity with the measures and their current presence in households.

However, the socio-demographic and political variance is less prominent than on the previous question, with age and education being most notable: younger people and those with lower levels of education are less likely to describe some measures as important, and these are the more widely adopted measures such as double glazing and wall insulation. For example, 90% of those aged over 55 see double glazing as important, as opposed to 71% of those aged between 18 and 34. On measures such as condensing gas

boilers and fan-assisted storage heating, these differences do not emerge or are tilted in the opposite direction, with younger people more likely to describe them as important.

Finally, we explored the benefits and drawbacks of introducing these energy efficiency measures as seen by the public, shown in Chart 8.10 below.

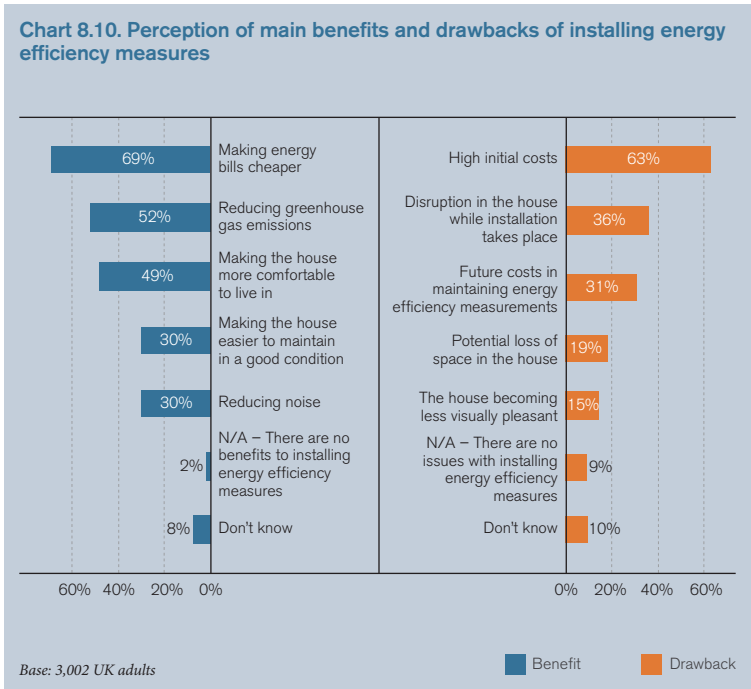


Chart 8.10 above shows that the key consideration is cost: while 69% think one of the main benefits of such measures is lowering energy bills, 63% are also concerned about the high initial costs. Impact on environment and comfort are another two benefits which are mentioned by a large proportion of the public: 52% and 49% respectively. On the other hand, no other drawback is mentioned as extensively, with concerns around disruption during installation

reported by 36% of the public, and 31% are also concerned about future costs in maintaining them.

Differences across socio-demographic factors vary on the specific benefits and drawbacks. Those aged 18 to 34 tend to be less worried about cost (54%) compared to those over 55 (69%), and people with lower education levels are less likely to express views on both benefits and drawbacks. No major differences are observed between homeowners and renters, while the only major political variance is across reducing greenhouse gas emissions: as previously observed, Leave and Conservative voters are less likely to see it as a main benefit relative to other voters, though a significant fraction (44% and 47% respectively) see it as one.

## Conclusion

This chapter has shown that the public is for the most part unfamiliar with low-carbon heating systems, but there is some interest in replacing existing heating methods with them. Notably, knowledge about low-carbon heating systems is fairly low, meaning that many do not offer an opinion on their interest, while for others there are concerns about cost. With the public citing a wide range of attributes that they find important in heating systems, and a similarly wide range of factors which would affect their decision to install a new system, it will require significant work by the government and the energy sector to ensure that the public understands the need for low-carbon heating systems, and finds them desirable.

More positively, we have also found a large segment of the population has already installed or is interested in installing various energy efficiency measures in their homes. However, the demographic breakdown suggests that more needs to be done in terms of rented properties, as renters and demographics who are more likely to rent are also more likely to express interest in energy efficiency.

The next chapter will conclude the findings of this report, highlighting the key trends.

## Chapter 9: Conclusion

The aim of this report was to conduct and analyse polling of the UK public to explore attitudes to the credibility of, responsibility for and policies for delivering net zero. We particularly focussed on public awareness and perceptions of the changes that need to be made in the energy sector, examining on the supply-side the role of energy companies, and on the demand-side, the use of low-carbon heating and home energy efficiency measures. This transformation is likely to be disruptive for consumers, making it vital to have a full understanding of the public sentiment towards policies that decarbonise heat. Public attitudes were analysed by a range of socio-demographic and voting characteristics, enabling us to examine variation in perspectives by social, economic and political divides.

The report revealed 11 main findings:

- **A firm majority of the UK public believes that it is unlikely that the net zero target will be achieved by 2050.** Younger people and Liberal Democrat voters are relatively more optimistic about our ability to reach the target by 2050, though they are still more likely to describe it as unlikely than likely, whereas a large majority of older people and Labour voters see it as unlikely.
- **The UK public believes that the national government is most**



**responsible for delivering net zero.** Large majorities attribute a high level of responsibility to national governments, businesses, local governments and individuals. However, the public believes that the national government is most responsible for delivering net zero.

- **A majority of the UK public believes that individuals will have to adopt a number of behavioural changes to help achieve net zero, and some of those behaviours have already been adopted by a substantial number people.** Reusing and recycling more products, installing better home insulation, reducing air travel, buying an electric car, and using more cycling and public transport were all seen by a majority as changes that people will have to make. Furthermore, a majority of people have either already started making these changes, or are considering doing so, with the exception of switching away from natural gas heating at home and driving an electric car, which a plurality is not considering. Age and education are characteristics associated with these differences, with those who are younger and those with lower education levels less likely to think that individuals will need to change their behaviour.
- **A majority of the public is expecting the price of various goods and services to increase if action is taken to achieve net zero, and are divided on whether they would be willing to pay more for them if it would lead to lower emissions.** Airplane tickets, cars, household electricity and heating, electronic goods, food, and clothing and furniture are all goods and services which a majority believes will see a price increase. While the public is overall divided on willingness to pay more, the strongest opposition on paying more is on household electricity and heating. Those who are older and those with lower education levels are less likely to express willingness to pay higher prices for products with less emissions. Similarly, Leave and Conservative voters expressed less willingness to pay higher prices. However, there is no public

consensus on the best way to finance the transition to net zero, though there is a slight preference for higher bills on products and services which emit greenhouse gases over higher general taxes.

- **The UK public has a preference for incentives over punishments in government policies to reduce net zero greenhouse gas emissions.** For individual behaviour, almost half (49%) of respondents preferred incentives-based policies over punishments (34%), while for businesses it was 45% and 38% respectively. Few differences across the population emerge, with Remain and Labour voters being the only political groups preferring punishment-based policies. There is majority support for a number of government policies, including requiring private firms that are contracted by government to assess and report their carbon footprint, providing tax breaks for businesses which significantly cut emissions, introducing a carbon tax, taxing investment into fossil fuels and establishing a new emissions trading scheme for businesses. Those with higher education levels, as well as Remain and Labour voters, are more likely to support these specific government policies.
- **The UK public supports financial subsidies for individuals and businesses for adopting changes and behaviours to help achieve net zero, and strongly believes low-income households and small businesses should receive financial help.** There is majority support for government subsidies for individuals installing better home insulation, buying an electric car, switching away from natural gas heating, and using cycling and public transport to travel. A majority, however, opposes any subsidy for eating less meat. Age and education level are strongly associated with differences in support for government subsidies, with the pattern varying by different types of changes, while Leave and Conservative voters specifically are also less likely to support subsidies. However, there is majority support across

socio-demographic and political groups on providing financial aid to low-income households and small businesses who cannot afford to make such changes themselves.

- **The UK public is more likely to believe than not that most types of businesses are taking too little action to achieve net zero greenhouse gas emissions by 2050.** This includes firms such as airlines, industrial manufacturers, gas companies, car makers and electricity companies. Hence, the public expresses high levels of support for specific actions that could be taken by businesses to help achieve net zero, with a majority of the public supporting investing profits into more sustainable practices, offsetting greenhouse gas emissions by funding projects to remove greenhouse gasses from the atmosphere, and publishing detailed breakdowns of emissions from their activities. Those with higher education levels, as well as Remain and Labour voters, are more likely to believe that businesses are taking too little action, and are more likely to express support for businesses to take specific actions polled.
- **The UK public believes it is important for energy companies to utilise profits to improve finances for customers, quality of service and to help to achieve net zero.** A large majority of the public finds it important to use profits for activities such as supporting vulnerable customers, lowering bills for consumers, improving energy infrastructure and investing in carbon-free energy. Focusing on ideas to achieve net zero greenhouse emissions, researching improvements, investing in energy storage methods, building offshore and onshore wind farms, investing into carbon capture and storage facilities, and converting the existing gas network to run on hydrogen are all supported by a majority of the public. Building more nuclear power stations is much more divisive. Those with higher levels of education are more likely to express support for these ideas.
- **The public are more likely to support government interventions**

**in the energy market for both environmental and financial reasons.** Almost half of the public would support intervention to increase investment into renewable energy, to achieve net zero emissions by 2050, to control energy prices, and to stop excessive profits. A majority support a number of specific government interventions to help achieve net zero, including subsidising solar panels, obliging gas suppliers to utilise low carbon gases, loosening restrictions on building wind turbines and subsidising hydrogen heating systems for homes. Once more, age, education level and political voting are associated with some difference in views on government intervention in the energy sector, with older people, less educated people and Leave and Conservative voters in particular less likely to support it.

- **The UK public is unfamiliar with low-carbon heating systems, but there is some interest in replacing existing heating methods with them.** Considering their limited use, it is unsurprising that a minority of the public has heard of low-carbon heating systems such as heat pumps, and particularly hydrogen boilers and heat networks. The majority of the public considers a wide range of attributes of heating systems as important, including ownership and control, familiarity, being lower cost than alternatives and having a low carbon footprint, although this was seen as less important compared to practical and financial reasons. Furthermore, when considering installing a new heating method, running costs, cost of replacement, having relevant and reliable information, ease of installation and disruption to home when installing were all seen as influential for decision making by the majority of the public. While a substantive minority expresses interest in installing a low-carbon heating system, there are also substantial number who did not know or would not consider it, with the latter most commonly citing lack of information and concerns about cost.
- **The UK public has high awareness of most household energy**

**efficiency measures, with a considerable installation base, and consider most of them to be important for achieving net zero greenhouse gas emissions.** Knowledge of household efficiency measures is high, with common measures such as double glazing and insulation known by the vast majority of people, in significant part due to significant rates of installation. The perception of their importance for helping to achieve net zero emissions mirrors knowledge and installation rates, with double glazing, loft insulation and wall insulation seen as most important. Expectedly, older individuals and homeowners are more likely to have knowledge of household energy efficiency measures, to have installed them, and to view them as important. Notably, the most commonly perceived benefit of energy efficiency measures is making energy bills cheaper, rather than reducing greenhouse gas emissions.

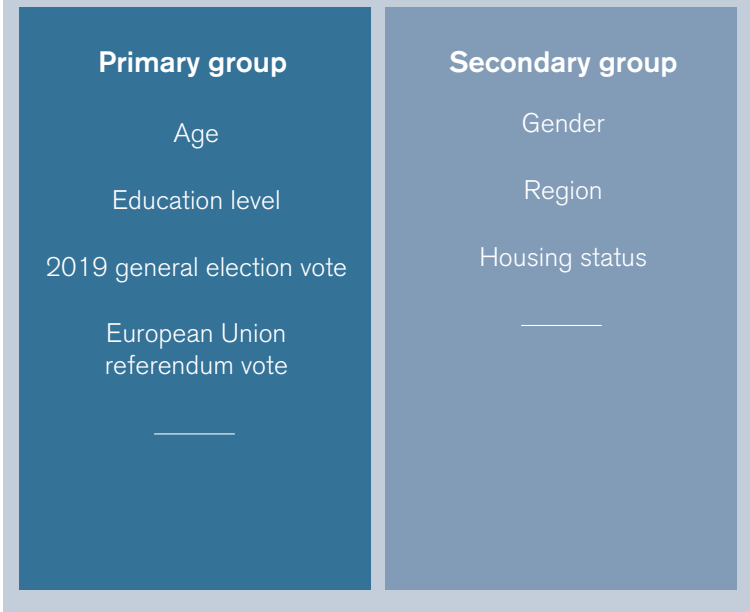
### **Variation among socio-demographic and voting groups**

There are some notable patterns in terms of socio-demographic and voting groups and an individual's views on credibility of, responsibilities for and policies on delivering net zero. It is clear that several characteristics emerged as dominant markers of differing public attitudes. On the other hand, a number of socio-demographic characteristics are only associated with occasional differences in views.

We can divide these socio-demographic and voting characteristics into two groups:

- A **primary group**, which includes characteristics that are frequently associated with differences in views on delivering net zero: age, education level, 2019 general election vote and Brexit referendum vote.
- A **secondary group**, which includes characteristics that are infrequently associated with differences: gender, region and housing status.

**Figure 8.1. Main groups associated with differences in attitudes towards action to achieve net zero greenhouse gas emissions**



Many of these characteristics will be correlated, meaning that we cannot attribute a causal relationship between being a member of a specific socio-demographic group or having a particular voting history and holding a specific attitude. For example, considering higher rates of higher education among younger people, it is unsurprising to find that both groups are more likely to hold similar beliefs. Furthermore, environmental issues tend to have higher salience amongst people who vote for left-wing parties, which is also associated with lower probability of supporting Brexit.

However, it should be noted that when we found higher rates of support among those with higher education levels for specific policies, this did not always correspond to higher rates of opposition among those with lower levels education. Such individuals were much more likely to offer a neutral opinion, or not present one, highlighting that

environmental issues have very different salience across different segments of the population.

## **Conclusion**

This report has demonstrated that the UK public sees all agents – individuals, the government and businesses – as highly responsible for taking action to achieve net zero. The public supports a wide variety of policies and changes that each of these agents will need to take. But a significant part of the public is not informed about this, particularly on measures to decarbonise the energy sector, and concerns around costs could turn the public off these measures.

## Annex

### Polling questions

- 1) **In your view, how significant is the contribution of following activities to climate change through greenhouse gas emissions in the UK? [Very significant, somewhat significant, somewhat insignificant, very insignificant, don't know]**
- Using fossil fuels for electricity production
  - Heating homes with natural gas
  - Heating homes with coal/oil
  - Driving a petrol/diesel car
  - Flying on aeroplanes
  - Constructing poorly insulated homes
  - Shipping products from overseas
  - Producing goods in industrial factories
  - Producing plants and meat on farms
  - Creating non-recyclable products



- 2) **How likely do you think it is for UK to achieve net zero greenhouse gas emissions by 2050?**
- Very likely
  - Likely
  - Unlikely
  - Very unlikely
  - Don't know
- 3) **How much responsibility do you think each of the following should have for taking action to achieve net zero emissions by 2050 in the UK? [Scale of 0 to 10, where 0 is having a very low level of responsibility and 10 is having a very high level of responsibility]**
- National government
  - Local governments
  - Businesses
  - Charities
  - Members of the public
- 4) **Which of the following changes do you think most people in Britain will have to make to achieve net zero greenhouse gas emissions by 2050? [Multiple choice]**
- Buying and driving an electric car
  - Installing better home insulation
  - Switching away from natural gas heating in their homes
  - Eating less meat
  - Buying more locally produced food and goods
  - Using cycling or public transport to travel as often as possible
  - Reducing air travel
  - Reusing and recycling more products
  - Other (please specify)
  - N/A – most people will not have to make any changes

- 5) **And which of the following have you already done or are considering doing to help achieve net zero greenhouse gas emissions by 2050? [I have already done this, I am considering doing this, I am not going to do this, not sure]**
- Buying and driving an electric car
  - Installing better home insulation
  - Switching away from natural gas heating in their homes
  - Eating less meat
  - Buying more locally produced food and goods
  - Using cycling or public transport to travel as often as possible
  - Reducing air travel
  - Reusing and recycling more products
- 6) **Should the UK Government offer individuals and businesses financial subsidies, through grants or tax cuts, for adopting the below changes to help achieve net zero greenhouse gas emissions by 2050? [Should offer financial subsidies, should not offer financial subsidies, don't know]**
- Buying and driving an electric car
  - Installing better home insulation
  - Switching away from natural gas heating in their homes
  - Eating less meat
  - Buying more locally produced food and goods
  - Using cycling or public transport to travel as often as possible
  - Reducing air travel
  - Reusing and recycling more products

7) **Would you be willing to pay higher prices for the following products and services if they emitted less greenhouse gases (either when using or during their production)? [Willing to pay a lot more, willing to pay a little more, II would not be willing to pay any more, don't know, N/A]**

- Home heating
- Household electricity
- Cars
- Airplane tickets
- Food
- Clothing and furniture
- Electronic goods and domestic appliances

8) **What do you expect to happen with prices for the following items if we take action to achieve net zero greenhouse gas emissions by 2050? [Greatly increase, slightly decrease, stay the same, slightly decrease, greatly increase, don't know]**

- Home heating
- Household electricity
- Cars
- Airplane tickets
- Food
- Clothing and furniture
- Electronic goods and domestic appliances

- 9) **To achieve net zero greenhouse gas emissions by 2050, do you think we should use more or less of the following energy sources in the future? [Use much more, use a little more, use the same amount as now, use a little less, use much less, don't know]**
- Oil
  - Natural gas
  - Coal
  - Nuclear
  - Solar
  - Tidal
  - Wind
  - Hydro
  - Hydrogen
  - Biomass and biogas
- 10) **Thinking about your existing home heating system, how important are the following attributes? [Very important, quite important, not very important, not at all important, don't know]**
- Lower cost than alternatives
  - Can be used whenever I like
  - Heats up the home quickly
  - Is largely unseen (e.g. pipes in walls, boiler in a cupboard)
  - The system is familiar to me
  - It has a low carbon footprint
  - It is owned by me and I maintain control over it
- 11) **Have you heard of the following low-carbon methods of heating homes? [Have heard, have not heard, don't know]**
- Heat pumps
  - Hydrogen boilers
  - Hybrid boilers – a combination of a gas boiler and a renewable energy boiler
  - Heat networks

**12) How interested would you be in replacing your existing boiler/heating source with the following low-carbon methods of heating homes? [Very interested, somewhat interested, not very interested, not at all interested, don't know, N/A — I already use this method to heat my home]**

- Heat pumps
- Hydrogen boilers
- Hybrid boilers – a combination of a gas boiler and a renewable energy boiler
- Heat networks

**13) Why are you not interested in replacing your existing boiler with a hydrogen or hybrid boiler?**

- Concerns about cost
- Concerns about safety
- Concerns about installation
- Concerns about whether it is suitable for me
- Not enough information
- Other reasons (please specify)
- Don't know

**14) If installing a hydrogen or hybrid boiler requires no additional changes to your heating system (for example, hydrogen would be provided through the existing gas network) would you be interested in a hydrogen or hybrid boiler?**

- Yes, I would be interested in a hydrogen or hybrid boiler
- No, I still would not be interested in a hydrogen or hybrid boiler
- Don't know

**15) How influential would the following factors be on installing a future new method of heating your home? [Very influential, influential, not influential, not influential at all, don't know]**

- Cost of replacement
- Disruption to home and changes to house required
- Ease of procuring and installation
- Reduction in greenhouse emissions
- Running costs
- Ownership (i.e. whether it is owned personally by you or by a company or another organisation)
- Having relevant and reliable information

**16) Have you heard of the following energy efficiency measures for households? [Have heard, have not heard, don't know]**

- Wall insulation
- Loft insulation
- Double glazing
- Draught-proofing windows
- Condensing gas boilers
- Energy-efficient lighting
- Energy-efficient external doors
- Under floor insulation
- Fan-assisted storage heating

**17) How interested would you be in installing the following energy efficiency measures in your home? [Very interested, somewhat interested, not very interested, not all interested, don't know / not sure, N/A — I have already installed this]**

- Wall insulation
- Loft insulation
- Double glazing
- Draught-proofing windows
- Condensing gas boilers
- Energy-efficient lighting
- Energy-efficient external doors
- Under floor insulation
- Fan-assisted storage heating

**18) How important is it for most of the British public to adopt the following measures to help achieving net zero greenhouse gas emissions from our energy sector by 2050? [Very important, quite important, not very important, not at all important, don't know]**

- Wall insulation
- Loft insulation
- Double glazing
- Draught-proofing windows
- Condensing gas boilers
- Energy-efficient lighting
- Energy-efficient external doors
- Under floor insulation
- Fan-assisted storage heating
- Low-carbon methods to heat homes (e.g. hydrogen boilers, heat pumps)

**19) What do you think are the main benefits of installing energy efficiency measures in your home, such as insulating walls and draught-proofing windows?**

- Reducing greenhouse gas emissions
- Making energy bills cheaper
- Making the house more comfortable to live in
- Making the house easier to maintain in a good condition
- Reducing noise
- Other (please specify)
- N/A – There are no benefits of installing energy efficiency measures
- Don't know

**20) What do you think are the main barriers to installing energy efficiency measures, such as insulating walls and draught-proofing windows?**

- High initial costs
- Disruption in the house while installation takes place
- Potential loss of space in the house
- Future costs in maintaining energy efficiency measurements
- The house becoming less visually pleasant
- Other (please specify)
- N/A – There are no issues with installing energy efficiency measures
- Don't know



**21) How satisfied are you with your current energy (gas and electricity) provision in regards to...[Very satisfied, satisfied, neither satisfied nor unsatisfied, unsatisfied, very unsatisfied, don't know]**

- Cost of energy for heating
- Cost of electricity
- Reliability of supply
- Understanding the environmental impact of your energy usage
- Efforts to reduce greenhouse gas emissions
- Being able to switch energy providers
- Household comfort

**22) Do you think the following types of businesses are taking enough action to achieve net zero greenhouse gas emissions by 2050? [Taking too much action, taking enough action, taking too little action, don't know]**

- Electricity companies
- Gas companies
- Airlines
- Housebuilders
- Container shipping firms
- Car makers
- Supermarkets
- Farmers
- Industrial manufacturers
- High street shops

- 23) **Do you support or oppose the following measures taken by private businesses to help to achieve net zero greenhouse gas emissions by 2050? [Strongly support, support, neither support nor oppose, oppose, strongly oppose, don't know]**
- Investing profits into more sustainable technologies and practices
  - Creating internal targets for achieving net zero greenhouse gas emissions through all their activities
  - Publishing detailed breakdowns of greenhouse gas emissions from all their activities
  - Making consideration of greenhouse gas emissions a key factor in decision-making
  - Offsetting greenhouse gas emissions by funding projects that remove greenhouse gasses from the atmosphere
  - Increasing charges to customers to cut greenhouse gas emissions
- 24) **If energy companies make a profit, how important is it for them to use those profits for the following purposes? [Very important, quite important, not very important, not at all important, don't know]**
- Lowering bills for consumers
  - Investing in carbon-free energy
  - Paying dividends to shareholders
  - Improving infrastructure of the gas and power grid
  - Investing in the development of their workforce
  - Supporting good causes
  - Increasing reliability of service
  - Increasing support for vulnerable customers and those in fuel poverty
  - Supporting local economic growth

**25) Governments can intervene in the energy market in different ways to encourage reduction and elimination of greenhouse gas emissions. Do you support or oppose the following measures in the energy market? [Strongly support, support, neither support nor oppose, oppose, strongly oppose, don't know]**

- Subsidising solar panels for homes
- Loosening restrictions on building wind turbines
- Subsidising hydrogen heating systems for homes
- Restricting production of oil in the North Sea
- Obliging gas suppliers to utilise low carbon gases, such as biomethane and hydrogen, in the UK gas network
- Banning the installation of natural gas boilers
- Mandating the introduction of hydrogen boilers in new homes and as replacement boilers for existing homes

**26) To achieve net zero greenhouse gas emissions in the energy sector by 2050, how important is it for energy companies to implement the following ideas? [Very important, quite important, not very important, not at all important, don't know]**

- Building more nuclear power stations
- Building more offshore wind farms
- Building more onshore wind farms
- Investing in energy storage methods
- Investing into carbon capture and storage facilities
- Converting the existing gas network to run on hydrogen
- Researching improvements for existing renewable energy sources, such as wind and solar

- 27) **To achieve net zero emissions of greenhouse gases by the public, which of the following options for British Government action should be prioritised in your view?**
- The British Government should focus on providing financial aid that encourages individuals to make choices and buy products that produce less greenhouse gases
  - The British Government should introduce laws that ban products and behaviours which produce more greenhouse gases
  - Don't know
- 28) **To achieve net zero emissions of greenhouse gases by private businesses, which of the following options for British Government action should be prioritised in your view?**
- The British Government should focus on providing financial aid such as tax breaks that encourages companies to make choices and create products that produce less greenhouse gases
  - The British Government should introduce laws that ban products and behaviours which produce more greenhouse gases
  - Don't know
- 29) **Do you support or oppose the following measures by the Government to achieve net zero greenhouse gas emissions by 2050? [Strongly support, support, neither support nor oppose, oppose, strongly oppose, don't know]**
- Requiring private firms that work on Government contracts to assess and report their carbon footprint
  - Introducing a carbon tax on all activities which produce carbon emissions
  - Establishing a new emissions trading scheme for businesses
  - Installing smart meters in all homes and businesses
  - Providing tax breaks for businesses which have already significantly cut their emissions
  - Taxing investment in fossil fuels

**30) Should the Government take any action in the energy market for any of the following reasons?**

- To control energy prices
- To stop excessive profits
- To increase investment into renewable energy
- To improve energy infrastructure
- To achieve net zero emissions by 2050
- To improve quality of customer service
- N/A – The Government should not take any action in the energy market

**31) Achieving net zero greenhouse gas emissions by 2050 will require significant action to be taken by individuals, businesses and the Government. How should this action be financed?**

- Individuals and businesses should pay more when buying products and services that emit more greenhouse gases
- Individuals and businesses should pay more tax to finance Government action to reduce emissions
- Both of the above
- Individuals and businesses should not be expected to pay more at all
- Don't know

**32) Should the government offer financial help to low-income households who cannot afford to take steps to achieve net zero emissions, such as installing insulation?**

- Should provide help with all of the costs
- Should provide help with most of the costs
- Should provide help with some of the costs
- Should not provide help with any of the costs
- Don't know

**33) Should the government offer financial help to small businesses who cannot afford to take steps to achieve net zero emissions, such as installing insulation?**

- Should provide help with all of the costs
- Should provide help with most of the costs
- Should provide help with some of the costs
- Should not provide help with any of the costs
- Don't know

The UK has made a legal commitment to reach net zero emissions by 2050, but this is only the first step in a long and difficult journey. The profound changes that need to be made by individuals, the government and businesses will be highly disruptive.

This report examines attitudes to the credibility of, responsibility for, and the behavioural changes and policies for delivering net zero. There is a particular focus on perceptions around the decarbonisation of the supply of and demand for energy.

Bright Blue Campaign  
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