



SOCIAL RESEARCH NUMBER:

76/2021

PUBLICATION DATE:

25/11/2021

Daily life survey - Covid 19 household research Wales: Wave 1 Interim Report

Mae'r ddogfen yma hefyd ar gael yn Gymraeg.

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Title: Daily life survey - Covid 19 household research Wales:
Wave 1

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Full Research Report: Williams, B; Townend, R; Walford, A; Peto, C; Mesher, K
(2021). *Daily life survey - Covid 19 household research Wales: Wave 1 Interim
Report*. Cardiff: Welsh Government, GSR report number 76/2021
Available at: [https://gov.wales/covid-19-household-research-daily-life-survey-
wave-1](https://gov.wales/covid-19-household-research-daily-life-survey-wave-1)

Views expressed in this report are those of the researcher and not
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Glossary

The following terms are used throughout the report.

Anthropogenic climate change	Climate change originating from human activity
Chief income earner (CIE)	The person in the household with the largest income, whether from employment, pensions, state benefits, investments, or any other source.
Green recovery measures	<p>The UK government has committed to a ten point plan for a 'Green Industrial Revolution' in the recovery from coronavirus. This recovery 'will create hundreds of thousands of new jobs by investing in pioneering British industries while simultaneously protecting future generations from climate change and the remorseless destruction of habitats.'</p> <p>In Wales, the new low carbon delivery plan due to be published in November 2021 will look to embed a green recovery from the coronavirus across all sectors in a way to help Wales meet its second carbon budget (2021-25) and set the pathway for net zero.</p>
Households likely to include someone vulnerable	<p>Households which contain individuals more likely to be vulnerable to health problems associated with a cold home¹, which includes households with:</p> <ul style="list-style-type: none"> • Children aged 13 years or under; • Adults aged 65+; and/or <p>Someone with a long-standing illness, disability or infirmity that limits their normal day to day activities</p>
Households experiencing changes to income, employment or working patterns	Participants who reported one or more of the following financial impacts: 'Lost job/made redundant', 'Was furloughed from job', 'Had to take a pay cut', 'Had another substantial loss of income'.

¹ [NICE \(2015\). "Excess winter deaths and illness and the health risks associated with cold homes](#)

as a result of COVID-19	
Households likely to be fuel poor	<p>For some households it was possible to classify them as living in fuel poverty according to the Low-Income Low Energy Efficiency (LILEE) definition of the term. It should be noted that the category is indicative and used for classification and description only, and should not be taken as a robust measure of prevalence².</p> <p>For the purposes of this study, households are classified as likely to be fuel poor if they:</p> <ul style="list-style-type: none"> • report a low equivalised income after housing costs; and • live in a property that is classified as having a household Energy Performance Certificate (EPC) in categories D-G
Net zero	<p>The UK is the first major economy in the world to pass laws to end its contribution to global warming by 2050. The target requires the UK to bring all greenhouse gas emissions to net zero by 2050, compared with the previous target of at least 80% reduction from 1990 levels. Scottish Government has committed to net zero greenhouse gas emissions by 2045 and at the time the of data collection and Welsh Government had stated an ambition to attain net zero by 2050 with a commitment to a 95% reduction in emissions at that time.</p> <p>Net zero means any emissions would be balanced by schemes to offset an equivalent amount of greenhouse gases from the atmosphere, such as planting trees or using technology like carbon capture and storage.</p>
Net zero (NZ) behaviours	<p>For simplicity, we will refer throughout to the behaviours explored in this survey as “NZ behaviours”. These behaviours are likely to advance progress towards the Government’s net zero targets if widely adopted.</p>

² We were unable to assess whether 33% of participants in Wales are in a household likely to be fuel poor, due to missing income and EPC data. Further discussion of the approach used to identify households “likely to be fuel poor” can be found in Annex A (page 79).

<p>Positive/negative net zero (NZ) behaviour change</p>	<p>Changes in frequency of NZ behaviours were calculated by asking participants first: ‘What do you personally do nowadays?’ and then, to reflect retrospectively on their behaviour before the pandemic: ‘What did you personally do before the UK-wide lockdown started on 23rd March 2020?’.</p> <p>“Positive NZ behaviour change” is used in this report to refer to instances where there was an increase in frequency or consistency of an NZ behaviour compared to before the first UK-wide lockdown (e.g. a move from ‘sometimes’ to ‘most of the time’).</p> <p>“Negative NZ behaviour change” is used in this report to refer to instances where there was a decrease in frequency or consistency of an NZ behaviour compared to before the first UK-wide lockdown (e.g. a move from ‘always’ to ‘never’).</p>
<p>Significant difference</p>	<p>Statistical significance testing is used to determine whether results are likely to be due to chance or real-world difference. Significance testing is conducted on quantitative findings in this research, and the threshold used is the 0.05 level, meaning there is less than a 5% chance that results deemed statistically significant are due to chance.</p>

A note on the inclusion of working from home as a net zero (NZ) behaviour.

“Working from home rather than commuting to work” was included as NZ behaviour in line with the Sixth Carbon Budget, which assumes that increases in homeworking alongside increases in active travel “would tend to reduce overall emissions and also have positive co-impacts for health”³. However, there are some studies which suggest that the emissions and environmental impacts of homeworking may be negligible when considered on a system-wide basis, for example when considering other potential changes associated with homeworking, such as increased domestic energy consumption.⁴ More research is required to better assess the emissions and environmental impacts of homeworking. Therefore, the

³ [CCC \(2020\) The Sixth Carbon Budget: The UKs path to Net Zero](#)

⁴ Hook et al., (2020), [‘A systematic review of the energy and climate impacts of teleworking’](#)

authors note that this inclusion is not clear cut, and may need to be revised in line with the evidence in future waves of the research.

1. Introduction and methods

- 1.1 This report details findings from one wave of a quantitative survey of households in the UK, with a focus on findings in Wales. The survey formed part of a broader programme of qualitative and quantitative research, commissioned by Department for Business, Energy and Industrial Strategy (BEIS), working with Scottish Government and Welsh Government, to provide an overview of the impacts of the coronavirus pandemic on experiences, attitudes and behaviours in relation to net zero, green recovery measures and home energy use.

Introduction and background

The policy context: why the research was commissioned

- 1.2 The coronavirus (COVID-19) pandemic and the measures implemented by both UK and Welsh Governments as a result have had a significant impact across the economy and people's everyday lives. Ipsos MORI, working with Centre for Climate Change and Social Transformations (CAST) and Buildings Research Establishment (BRE), was commissioned to deliver the COVID-19 Household Research (known as the "Daily Life Study") in September 2020. The purpose of the research is to provide a robust and comprehensive overview of the impacts of the coronavirus pandemic (COVID-19) on households' self-reported behaviours, attitudes and experiences in relation to net zero, green recovery measures and home energy use. BEIS also wished to understand how the pandemic had differentially impacted certain subgroups of the population, such as those defined by ethnicity, geographical location, vulnerability, and income level.
- 1.3 The research seeks to understand and robustly measure overall behavioural and attitudinal changes relevant to net zero and uncover differences in experiences and impacts across demographic, geographic and socio-economic groups. The research further intends to investigate whether any reported changes in behaviour could be anticipated to continue after the pandemic, and what support the public might need to facilitate continuation of any sustainable behaviours and cope with impacts of the pandemic on experiences as energy consumers.

The rationale and objectives of the research

- 1.4 The Welsh Government has stated an ambition to become net zero by 2050 with a commitment to a 95% reduction in emissions in that time⁵. This is alongside the UK Government's legally binding target to achieve net zero greenhouse gas emissions by 2050⁶ and the Scottish Government's commitment to net zero greenhouse gas emissions by 2045. In making this commitment, the UK became the first major economy to legislate for a net zero target⁷.
- 1.5 The Committee on Climate Change (CCC) highlighted that, in order to reach the goal of net zero, significant behavioural and societal changes will be required⁸. In Western and high income countries, changes to behaviour around transportation, food and housing are likely to be most impactful⁹, however a wide range of behavioural changes are possible. A variety of sources provided evidence that since the first UK-wide lockdown in March 2020, individuals have changed a range of relevant behaviours.¹⁰
- 1.6 This research project aims to provide high-level tracking of priority behaviours across a range of net zero relevant domains (e.g. home energy use, travel, diet). In doing so it aims to bring together and build on other research where the focus had previously been on more specific groups of behaviours, or where the sampling methods were less robust. A core objective of this research is to fill that evidence gap by providing ongoing robust and comprehensive tracking of attitudes and behaviours related to net zero¹¹.

⁵ At the time of data collection, Welsh Government had a target of 95% reduction in carbon emissions with an ambition to reach net zero by 2050. However, in February 2020 this became a target of Net Zero by 2050 in line with the UK target.

⁶ CCC (2019) [Behaviour change, public engagement and net zero](#).

⁷ UK Government (2019) [UK becomes first major economy to pass net zero emissions law](#).

⁸ Carmichael, R. (2019) Behaviour change, public engagement and Net Zero. A report for the Committee on Climate Change. Available at [CCC](#) and [Imperial College](#)

⁹ Ibid.

¹⁰ Note that NZ behaviours may not be positive for the well-being of individuals or households, and may not necessarily be freely made, for reasons of environmental concern. Changes to heating behaviours, particularly, may have a negative impact on the health and well-being of those making the changes, or others in their household. To ensure this research explores this problematic fact, there is a particular focus on those likely to be negatively impacted by changes to heating and energy behaviours in the sampling, the research design, and the analysis and reporting.

¹¹ For a detailed list of the behaviours explored in this research, please see page 37

1.7 The social and economic impacts of the coronavirus pandemic have been widely documented, with many households experiencing financial uncertainty, for example through reduced incomes. It is a priority for Welsh Government to understand what the economic impacts of the pandemic mean for energy consumers and to consider the implications for fuel poverty policy. Therefore, a core objective of this research is to understand how the pandemic impacted households' finances and how this has affected households' ability to heat homes sufficiently. This includes understanding the impact of the pandemic directly on heating and energy using behaviours, as well as the broader financial and well-being consequences, such as foregoing other essentials or falling behind on bills.

1.8 The key research questions included:

- How are households' behaviours and attitudes of relevance to net zero, green recovery and energy consumption affected by the coronavirus pandemic (COVID-19)?
- What are the experiences and impacts of lockdown measures on households in relation to domestic energy consuming behaviours and the ability to pay energy bills?
- How are households with different characteristics and pandemic experiences affected differently?
- How do changes to households' behaviours and attitudes evolve over time and how do changes vary across households with different characteristics and pandemic experiences?
- What policy interventions can support the maintenance and uptake of low carbon and pro-environmental behaviours during the green recovery?
- How has the coronavirus pandemic impacted households' attitudes towards key technologies, products and services anticipated to play a role in the decarbonisation of household energy use? (e.g. smart meters, smart devices, installing new building energy efficiency measures and low carbon heating technologies).

1.9 These research questions are addressed through this research programme, which consists of two waves of a quantitative survey of adults in the UK, with qualitative follow-up interviews and a diary task (using an online app called ‘AppLife’) amongst selected survey participants.

1.10 This report summarises findings from the first wave of the quantitative survey in Wales. Fieldwork in Wales was conducted between 20th November and 24th December 2020: slightly later than the rest of the UK to enable translation of fieldwork materials to Welsh. In the rest of the UK fieldwork started on 12th November and also closed on 24th December 2020.

The wider research context and how it fits into what is known about the subject area

1.11 The Daily Life Survey intends to verify, consolidate and extend existing research on the impacts of COVID-19 on households in each of the constituent nations of the UK, in relation to net zero, green recovery measures and home energy use. The research also enables the tracking and exploration of relevant behaviours, attitudes and experiences of households as the pandemic progresses.

1.12 A rapid evidence review was conducted at the beginning of the project to ensure the project benefited from existing research in this area. Sources relating to the impacts of COVID-19, lockdowns and restrictions were found for areas of interest including transport and commuting behaviours, energy and water use in homes, material consumption, waste and recycling, aviation, and changes in attitudes towards climate change, climate risk, and net zero. This evidence review will be updated at key points in the project to ensure the research is informed and contextualised by the latest research findings.

1.13 CAST is leading separate research on habit disruption during the COVID-19 pandemic. As part of this work, CAST is conducting two studies – one UK-wide¹² (co-funded by BEIS) and one focussed on Wales (funded by the Welsh Government) – tracking households’ low-carbon behaviours and attitudes before,

¹² CAST (2020) [‘How has Covid-19 impacted low-carbon lifestyles and attitudes towards climate action?’](#) and CAST (2020) [‘Tracking the effect of Covid on low-carbon behaviours and attitudes to climate change.’](#)

and during lockdown. Both studies have to date consisted of two quantitative online survey waves, but at time of writing were unpublished.

- 1.14 This existing research suggests that the changed circumstances resulting from the pandemic have impacted both domestic energy use and public concern about domestic energy use, alongside a number of positive NZ behaviours, with both positive and negative impacts reported.

How this research will be used

- 1.15 Evidence gathered through this research will support the development of high-priority policy products in relation to net zero, green recovery measures, and implications for energy consumers. The understanding of how the public's behaviours and attitudes have evolved will be vital to successful policy design.

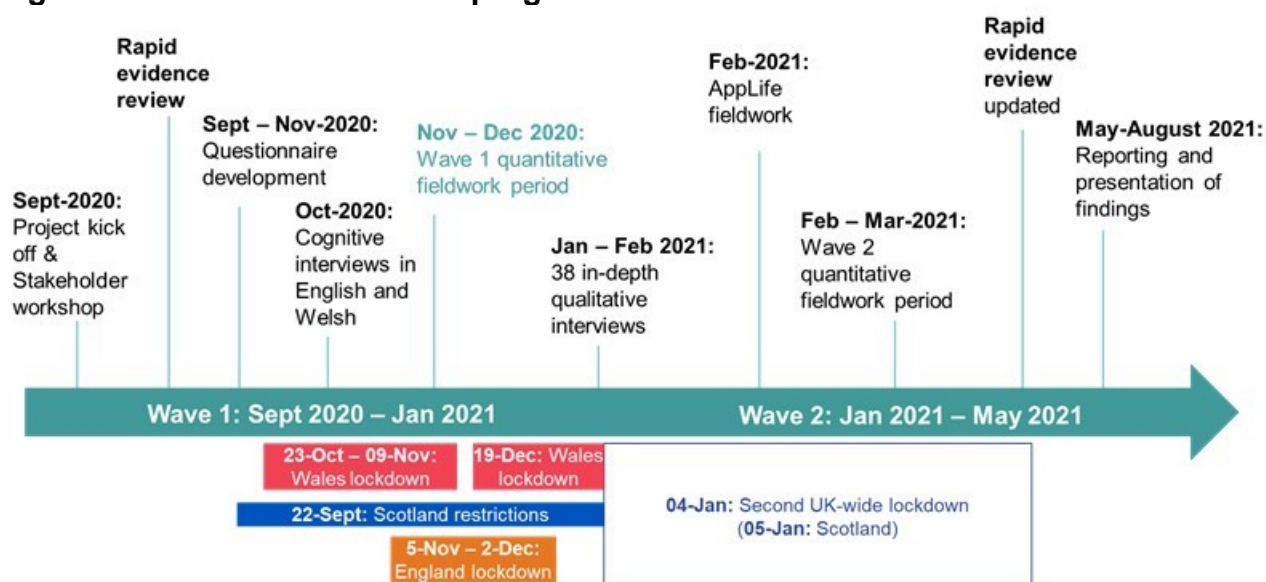
Methodology and sample

Research design overview

- 1.16 The overall research design includes both quantitative and qualitative elements, which are informed by rapid functional reviews of available secondary evidence at several points throughout the project.
- 1.17 The quantitative research was designed to provide robust data on changes in energy and net zero related attitudes and behaviours since the onset of the first UK-wide lockdown in March 2020. The quantitative research consists of two waves of household surveys undertaken with representative samples of the UK adult population.
- 1.18 Survey participants were selected through stratified random sampling of addresses in each constituent nation of the UK, and were then invited to participate in the research: completing the questionnaire online, or offline by completing the questionnaire on paper and returning it by post. In accordance with the Welsh Language Act, participants in Wales were offered the option to complete the survey in English or in Welsh.
- 1.19 It should be noted that through the six-week fieldwork period for the wave 1 survey, areas of the UK were under different levels of lockdown or restrictions related to the

COVID-19 pandemic, and participants' responses reflect the status of their area at the time they completed the survey (as shown in Figure 1 below).

Figure 1 The overall research programme



- 1.20 The qualitative research is designed to contextualise the data drawn from the quantitative survey by providing greater insight into the reasons behind any behavioural and attitudinal changes, and into householder experiences. For this research, a small number of survey participants who provided consent to be recontacted were invited to take part in depth interviews by telephone/online. During these interviews, participants were asked to discuss their responses to the survey and explain the reasoning behind any changes in behaviour and/or attitude. A selection of these interview participants was then further invited to take part in an app-based 'diary' exercise in which they were asked to document various elements of their daily activities, noting further changes.
- 1.21 At the time of writing, the fieldwork and analysis for the qualitative element of the research (interviews and online app-based diary exercise) and for the second wave of the quantitative survey were ongoing. A future report will bring together findings from all stages of the research.

Quantitative survey methodology

- 1.22 The survey sample was designed to provide robust and representative samples of adults in each constituent nation of the UK, and structured to enable analysis by a range of geographic and demographic indicators.
- 1.23 The sample frame was structured around the following:
- A 'core' sample, representative of adults in the United Kingdom
 - A 'vulnerable' boost sample, which was representative of adults living in the 20% most deprived areas in the UK, as defined by the Indices of Multiple Deprivation (IMD)¹³. This boost aimed to increase the number of participants from vulnerable categories across the UK to ensure a large enough sample size to enable comparisons between potentially vulnerable and non-vulnerable sectors of the population
 - Further boost samples in Wales and Scotland: to ensure that a large enough sample size would be gathered from these countries to enable reliable conclusions to be drawn and to enable comparisons between the home nations. The Wales and Scotland boosts were structured by Government region to enable analysis by region within each country
- 1.24 Addresses were drawn at random from the Royal Mail's Postcode Address File (PAF), a database of all known addresses in each constituent nation of the UK. Stratification was undertaken to provide a broadly representative sample, and to ensure adequate representation of subgroups of particular interest. Addresses were selected following stratification by the criteria listed below:
- Geographical region (as relevant to each sample)
 - Local authority
 - Population density (urban / rural / mixed)
 - Indices of Multiple Deprivation (IMD) quintile

¹³ [English Indices of Deprivation 2019](#); [Scottish Index of Multiple Deprivation 2020](#); [Welsh Index of Multiple Deprivation 2020](#).

- 1.25 The number of addresses within each category was calculated taking into account potential 'deadwood' (i.e. the proportion of properties which are unoccupied or are not residential premises), and anticipated response rates.
- 1.26 In Wales, a total of 4,843 addresses was selected (within the total of 15,822 addresses that were selected across the UK) for participation in the survey, and a breakdown of addresses issued by country, broken down by sample group is included in Annex A.
- 1.27 In each selected household, up to two adults (aged 16 years or over) was invited to participate in the survey. In the interests of maximising response rates, no selection criteria (other than being aged 16 years or over) were imposed regarding the selection of individuals within each household.
- 1.28 Following data cleaning and checks, the total number of valid responses from participants in Wales included in this report is 1,687, with 1,243 households (26% of those invited to participate in the survey) returning at least one questionnaire. Six in ten (61%) responses from Welsh participants were received online and 39% by post.
- 1.29 UK averages are also shown throughout this report, to provide comparisons and context. The all UK sample comprises 4,898 responses from 3,602 households (23% of those invited to participate in the survey).

Weighting

- 1.30 Following completion of fieldwork, the data was weighted to provide a representative sample of the adult population in each of the constituent nations of the UK. The weighting process is described in detail in the technical report, but is summarised below:
- A pre-weight was applied to account for uneven selection probabilities in the household (because an adult living in a single adult household would have a greater chance to participate in the survey than an adult living in a multi-adult household)
 - Within each country of the UK (with the exception of Northern Ireland where the number of interviews completed was small) demographic weights were applied

to bring the sample within that country to a representative profile by age, gender, region/Government region and IMD quintile

- For the all-UK sample, an all-UK weight was then applied to combine the individual country samples in their appropriate proportions

1.31 Different weights were applied for questions which were only asked of online participants, and those which were asked of participants completing either online or by post.

Questionnaire design

1.32 The project began with a stakeholder workshop including attendees from Ipsos MORI, BEIS, Welsh Government, Scottish Government, BRE, CAST and other stakeholder organisations to discuss and prioritise the content and scope of the quantitative fieldwork. This was followed by a period of questionnaire development, led by Ipsos MORI in consultation with BEIS, Welsh Government and Scottish Government, and with inputs from BRE and CAST. The questionnaire design centred on the research questions, taking into account discussions during the stakeholder workshop.

1.33 A series of 12 cognitive testing interviews were held with members of the public (in English or Welsh, depending on participant preference). Participants were recruited to quotas using free-find methods by Criteria, an Ipsos approved supplier. Cognitive testing ensured the questionnaire effectively measured the target behaviours and attitudes of interest, that questions were easy to understand, flowed logically and were unbiased. Following the interviews, minor changes were made to the questionnaire before fieldwork commenced. Specific cognitive testing in Wales also checked the quality of the Welsh language translations of all fieldwork instruments.

1.34 Because the survey could be completed online or on paper, some small changes needed to be made to reflect the mode of completion. Some questions were not included in the postal questionnaire because of space limitations, and others were not included because of the need to include data from previous questions or to personalise questions. In a small number of cases, questions were re-worded or re-

structured in the postal questionnaire to provide similar data/outcomes, but in a manner which was more appropriate to a postal survey.

- 1.35 All fieldwork documents were provided to participants in Wales in both Welsh and English. The full questionnaires are shown in Annex A.

Analysis and reporting of the Wave 1 survey

- 1.36 The focus of this report is on the adult population of Wales, with comparisons made to the all UK average where appropriate. Most questions were asked of all participants, though some were asked only of those who had reported behavioural changes or indicated certain attitudes (full details of questionnaire routing is shown in technical report). It should also be noted that, for reasons mentioned above, some questions were only asked of people who answered the online survey. This is clearly marked in charts and tables. The report details key findings and patterns identified in the data, with a focus on the findings most relevant to the project's research objectives.

- 1.37 Data was organised into data tables, and broken down according to key subcategories to enable analysis of differences across sub-groups of interest. Throughout the report any variations in attitudes or behaviours between sub-groups are commented upon if the variation is statistically significant; or if the difference is highly relevant to the research questions, is substantial and/or appears consistently across questions. The following key sub-groups of households were identified and are commented on where relevant:

- Welsh Government Region
- Gender and age groups
- People from Ethnic Minority Communities
- Households which contain individuals more likely to be vulnerable to health problems associated with a cold home¹⁴ (e.g. children, people aged 65+, people with a disability or long-term limiting illness)

¹⁴NICE (2015) [‘Recommendation 4 Identify people at risk of ill health from living in a cold home’](#)

- Household income, including those on low income (for the purposes of this reporting, this means under £16,000 per annum) or on low equivalised income after housing costs (based on national median household income for the relevant household structure)
- Households which had experienced changes to their household finances or working patterns associated with the pandemic (e.g. lost job, had to take a pay cut, were furloughed)
- Whether the household may be considered likely to be fuel poor (on a low income after housing costs and living in a property with an EPC of D-G)¹⁵

- 1.38 A further key analysis variable is between reported behavioural changes that are likely to have a positive impact on the UK's move towards net zero (e.g. reducing food waste, monitoring energy use) and reported behavioural changes that are likely to have a negative impact (e.g. increasing use of private cars, taking holidays that require flights). For convenience, the report refers to the former as 'positive net zero (NZ) behaviour change' and the latter as 'negative net zero (NZ) behaviour change'.
- 1.39 In cases in which findings are reported on questions or variables with a small sample size / base, caution notes are included as a reminder that these findings are less reliable.
- 1.40 In places where the percentages do not sum to 100, this is due to computer rounding, or because some categories (e.g. don't know, prefer not to say, not answered) have been excluded from charts or tables for reasons of space or clarity. Throughout the report the combined totals for similar answers are shown, for example, the participants reported as "agreeing with" a statement represent the combination of those who answered "strongly agree" and "tend to agree". Combinations may or may not sum to their component parts, again due to rounding.

¹⁵ We were unable to assess whether 33% of participants in Wales are in a household likely to be fuel poor, due to missing income and EPC data. Further discussion of the approach used to identify households "likely to be fuel poor" can be found in the technical annex (page 79).

Limitations to the methodology

- 1.41 The methods utilised for this research project were selected by Ipsos MORI to deliver robust and accurate data within the available budget and timeframe. However, all research methods engender certain limitations arising from numerous factors including: inherent limitations to a data collection method; budgetary limitations; sample representativeness; non-response bias; time limitations; social desirability bias; and researcher error. Below are noted a few possible limitations to the methodology chosen for Wave 1 of the survey, and how they were mitigated.
- 1.42 Two examples of possible limitations to this study are the accuracy of participants' recollections (given the need to recall behaviour from eight months ago) and social desirability bias (potentially arising for questions asking about environment-related behaviours). The first of these was mitigated by asking only about simple behaviours that are easy to remember, and by cognitively testing the questionnaire to ensure that it was easy to complete. The second was mitigated by only mentioning environmental issues in the survey after the behavioural questions so that participants would not be aware that the behavioural questions were intended to gauge environmental impact. The self-completion nature of the research may also minimise social desirability bias.
- 1.43 Other possible limitations to this study include representativeness of the sample, differences between online and postal samples leading to lower representativeness of the sample for online-only questions, and non-response bias. The indicative nature of the classification of 'households likely to be fuel poor' (see page 78) should also be noted.

Interpreting the findings of this report

- 1.44 When reviewing the findings regarding how participants intend to change behaviours in future, it is important to note that these findings reflect only the attitudes of the public at the time of fieldwork (November/December 2020). It should be considered that future behaviours may not turn out to reflect the responses provided by participants to the questionnaire.

1.45 It should also be noted when interpreting the results presented in this report that quantitative research only provides information regarding attitudes and reported behaviours. It does not provide reasons for the patterns observed in the data. At points in the report the research team have inferred certain causes for trends in the data, but interpretation is kept distinct from the findings.

Structure of this report

1.46 The remainder of this report is structured into four chapters, summarising the results from the survey according to key themes:

- Chapter 2: Household characteristics and energy behaviours
- Chapter 3: Changes to positive NZ behaviours
- Chapter 4: Sustainability of behavioural changes
- Chapter 5: Attitudinal Changes
- Conclusions
- Annex

1.47 This report focuses specifically on the findings taken from the survey in Wales. For findings regarding the UK as a whole, please refer to the UK-wide report.

2. Household characteristics and energy behaviours

Key findings

Households in Wales, as across the rest of the UK, are spending a lot more time at home than before the first UK-wide lockdown on 23rd March 2020, and, as a result, self-reported energy consumption has increased for many.

Over four fifths (84%) of participants in Wales said their household was spending more time at home at the time they completed the survey in November/December 2020, than before the first UK-wide lockdown. A little under half (44%) said someone from their household had worked from home in the past seven days.

More than half of participants in Wales (54%) said they were using more energy at the time they completed the survey than in the comparable period in the previous year, before the first UK-wide lockdown. The groups for whom energy consumption has increased the most in Wales are very similar to the rest of the UK, and are also the most likely to say that someone from their household has worked from home (i.e. people under age 65, households with children).

COVID-19 has had an impact on households' incomes and their ability to comfortably manage finances.

On average, 36% of participants in Wales said they were finding it more difficult to manage financially at the time they completed the survey, compared with before the first UK-wide lockdown. This proportion is slightly lower than the all UK average of 40%.

Of those who said they are finding it more difficult, four fifths in Wales (83%) said this has had some impact on their financial behaviours, such as having to reduce the amount they are regularly saving or having to use savings to cover living costs.

The pandemic has also led to greater concern about affording energy bills, particularly for those under financial pressure.

Groups particularly likely to say they are experiencing financial pressure in Wales were also similar to the rest of the UK and included younger people, households with children, those on lower incomes¹⁶ and households likely to be fuel poor.

Awareness of the NEST scheme to improve energy efficiency in homes appears relatively high

Just under two fifths (37%) of participants in Wales were aware of the NEST energy efficiency scheme. Of those who said they had heard of NEST, 9% said they were considering applying, and those in households on low incomes were the most likely to be considering applying (14% on a household income of up to £16,000 v 5% on higher household incomes).

Impacts of COVID-19 and restrictions to tackle the virus on how households use their homes

Time spent at home

- 2.1 Participants were asked to compare how much time they were spending at home at the time they completed the survey in November/December 2020 with the period before the first UK-wide lockdown on 23rd March 2020. Compared with before the first UK-wide lockdown on 23rd March 2020, 84% of households in Wales reported spending either a lot (67%) or a little (17%) more time at home nowadays¹⁷. A minority said there had been no change to the amount of time spent at home (14%), and only 1% said they are spending less time at home nowadays. These proportions are very similar to the all UK average, with 86% saying they are spending more time at home nowadays.
- 2.2 Only participants completing the survey online were asked to say when their household is spending more time at home. In Wales, as across the UK, the extra time spent at home was spread across the week and the weekend, with the greatest increase being during weekday daytimes. Of those who were spending more time at home compared with before the first UK-wide lockdown, in Wales, 83% said they

¹⁶ Lower income households are defined as those in which the household's self-reported total income (before tax or any other deductions) is below £16,000 per annum.

¹⁷ In reading findings, the timing of the fieldwork should be noted. In this context 'nowadays' means November/December 2020, when different areas of the UK were in different stages of lockdown/restrictions.

were spending more time at home during the day on weekdays. Participants in Wales who were spending more time at home were also doing so during the day on the weekend: 77% said they are spending more time at home in the daytime on Saturday, and 74% in the daytime on Sunday.

- 2.3 While responses were broadly consistent by key demographics such as age, region and presence of children in the household, the data highlights some key subgroups for whom the COVID-19 restrictions had had a greater impact in relation to their time spent at home. Those who reported one or more changes to their income, employment or working patterns¹⁸ as result of COVID-19 were significantly more likely to say they are spending more time at home nowadays (89% in Wales, similar to the all UK average of 84%).

Changes to working arrangements

- 2.4 One of the factors which correlates with increased time at home is a change to working patterns for UK households. A little under half (44%) of participants in Wales said that someone in their household had worked from home in the past seven days: this includes 31% who said they personally had worked from home in the past seven days and 20% who said someone else in their household had done so. These proportions are very similar to the all UK average.
- 2.5 Perhaps unsurprisingly, people of working age in Wales, as in the rest of the UK, were more likely to say they or someone else had worked from home in the past 7 days, but the proportion was particularly high amongst 25-44s (63% of 25-44s, 51% of 45-64s, compared with 10% of 65+s). The same is true of households with children (58%), particularly those with children under the age of 5 years (61%).
- 2.6 Patterns of response in Wales were very similar to the rest of the UK, with the following groups less likely than average to say that they personally or someone else in their household has worked from home in the past seven days include:
- Those who earn up to £16,000 (19% v 57% for those who earn £16,000 +)

¹⁸ Participants who noted to have experienced one of the following happen to someone in their household: 'Lost job/made redundant', 'Was furloughed from job', 'Had to take a pay cut', 'Had another substantial loss of income'.

- Households where someone may be classed as more likely to be vulnerable to health problems associated with a cold home¹⁹ (37% v 60% of households where no-one is classed as 'more likely to be vulnerable')
- Those who pay for energy via a pre-payment meter (21% v 47% of those who do not use a pre-payment meter)
- Those who own their own homes / privately rent (49% and 44% respectively) v those in social rented homes (14%)

2.7 Findings are similar to data from the ONS Opinions and Lifestyle Survey from November 2020, in which 37-39% of the working population across the UK said they had worked from home in the past seven days²⁰.

Impacts on home energy usage

2.8 To understand impacts of the pandemic and changes in working patterns on home energy use, it was important to gain a picture of participants' homes and how they use energy. In line with findings from other studies (e.g. English Housing Survey²¹, Scottish House Condition Survey²², Welsh Housing Conditions Survey²³) the majority of participants said their household heats their home through central heating (93%), either from a mains gas boiler (80%) or another fuel-fired boiler (13%). Around one in ten use electric radiators (10%) or an open fire or a coal/wood burning stove (15%). While participants in Wales were more likely than the UK average to say they use a boiler that uses another fuel such as coal or oil (13% v 7% on average), they were not significantly less likely to use a mains gas boiler (80% v 83% UK average).

2.9 The most common method to pay for energy by participants across the UK was through monthly or quarterly direct debit, with four-fifths (81%) of households in Wales paying for energy in this way.

¹⁹ Households with children aged 13 or younger, or adults aged 65+ or someone with a long-standing illness, disability or infirmity that limits that normal day to day activities

²⁰ Office for National Statistics (2021). [Coronavirus and the social impacts on Great Britain.](#)

²¹ [UK Government \(2014\) English Housing Survey: Energy Report 2014.](#)

²² Scottish Government (2020) [Scottish House Condition Survey: 2019 Key findings.](#)

²³ Welsh Government (2020) [Welsh Housing Conditions Survey](#)

- 2.10 Two-fifths of survey participants (41%) in Wales said their household had a smart meter installed, and a further quarter (24%) said they are either planning to or had thought about getting this installed. These proportions are in line with published data from December 2020 which suggested that 42% of household energy meters are smart²⁴. Awareness of smart meters appears to be high, with a small number of participants saying they were unfamiliar with a smart meter or have not thought about installation (5%²⁵).
- 2.11 In the context of the significant overall increase in time spent at home, over half (54%) of participants reported increased energy consumption compared with their usual usage at the same time of year. Within this, 28% said they were using a little more and 26% were using a lot more energy: these findings are consistent with the all UK average and also BEIS published statistics suggesting increased UK domestic energy consumption.²⁶ The groups for whom energy usage was most likely to have increased were also more likely to say they or someone else in their household had worked from home, with 65% of 25-44s and 66% of households with children reporting using more energy than before.

Impacts on household finances

- 2.12 Participants were asked to consider how their household finances had changed at the time they completed the survey, compared with how they were before the first UK-wide lockdown. In making this comparison, 36% of participants said their household was finding it more difficult to manage financially, including 12% who said they were finding it a lot more difficult, and 23% who said they were finding it a little more difficult (Figure 2). It is notable that participants in Wales were slightly less likely than the all UK average of 40% to report this, with the difference was mainly in the 'a little more difficult' category (23% Wales, 28% UK average).
- 2.13 Amongst households in Wales likely to be fuel poor and/or on low incomes, the proportions finding it more difficult to manage financially are significantly higher than

²⁴ UK Government (2020) [Smart Meters Statistics](#) – 2020 quarterly updates

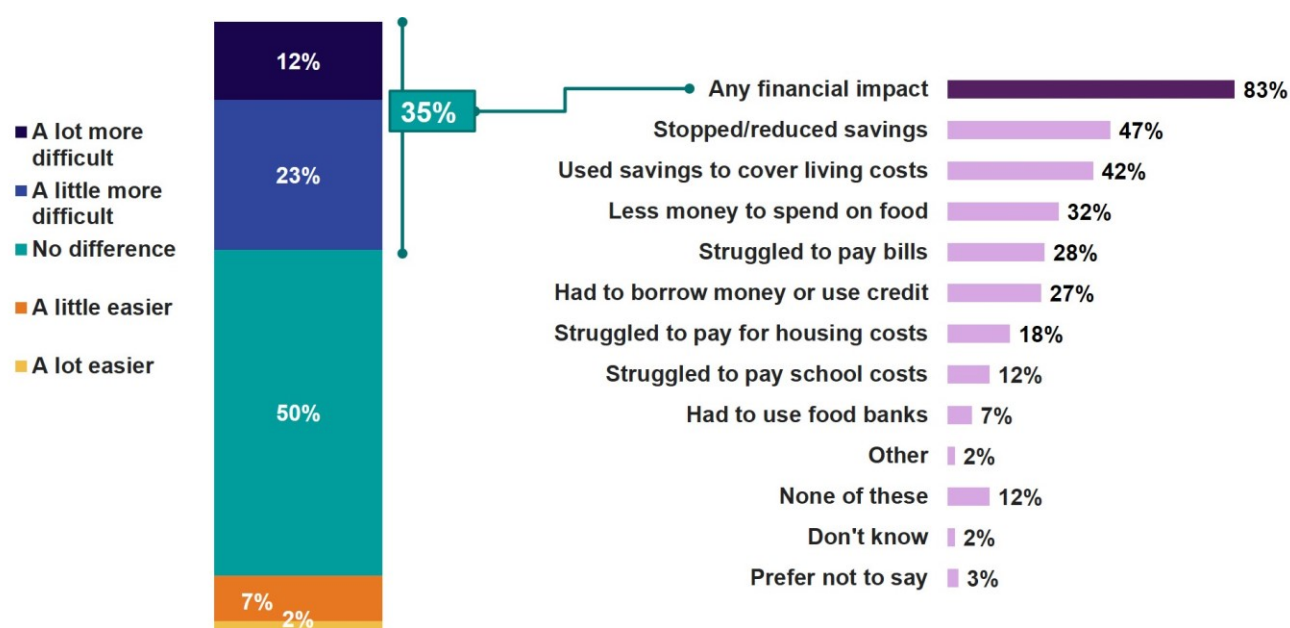
²⁵ These levels of awareness are similar to data from the Smart Energy GB (SEGB) Outlook survey where 5% of adults were not aware of smart meters.

²⁶ UK Government (2021) [Energy Trends, March 2021](#)

the Welsh average (50% in households likely to be fuel poor, 58% in households with average income of up to £16,000 v 36% on average).

2.14 Those who said they are finding it more difficult to manage financially were asked about the impacts of this on their household finances, and around eight in ten (83%) in Wales said it was having some impact: very similar to the UK average of 86%. As shown in Figure 2, impacts included reducing savings, dipping into savings to cover living costs, spending less on food or struggling to pay bills. A quarter of those finding it more difficult (around one in ten of all participants) said they had had to borrow money or use credit since the start of the first UK-wide lockdown.

Figure 2 Proportions and actions of those finding it more difficult to manage financially since before the first UK-wide lockdown



D6. Compared with before the UK-wide lockdown started on 23rd March 2020, how much easier or more difficult has it been for your household to manage financially recently?

Base = All Wales adults (1687)

Fieldwork dates: 20th November – 24th December 2020

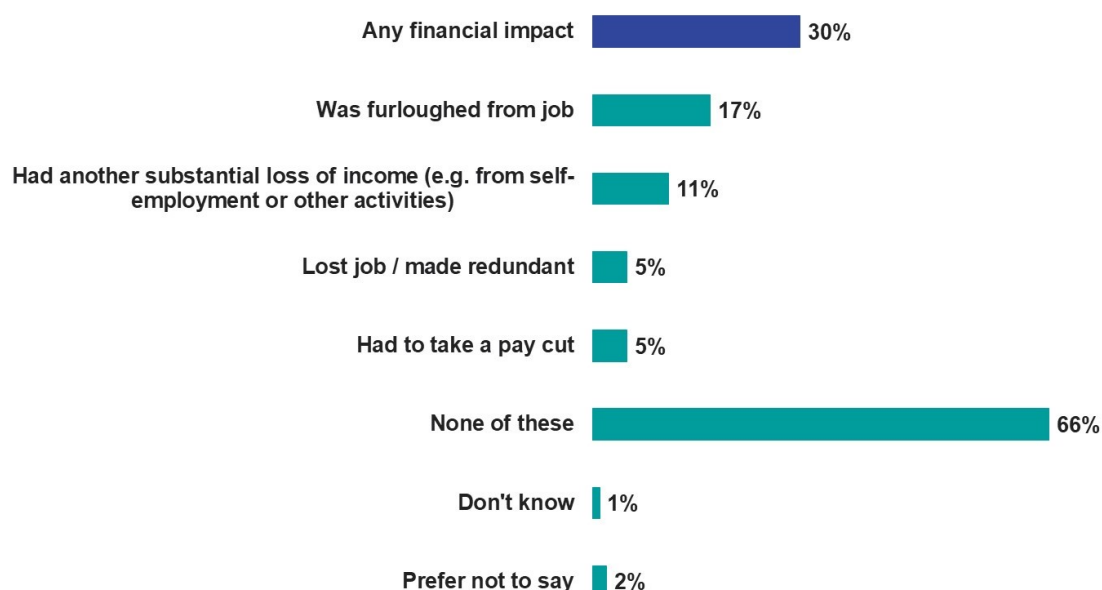
D7. So we can check, since the UK-wide lockdown started on 23rd March 2020, have your household finances been affected in any of these ways?

Base = Wales, All who say it's more difficult to manage financially nowadays (543).

2.15 The findings also suggest that COVID-19 has had a negative impact on households' income, employment and working patterns. Participants were shown a list of potential impacts to their household's income, employment or working patterns. In Wales, 30% of participants said someone in their household had experienced one or more since the first national lockdown. At the time of fieldwork, 17% of participants in Wales said someone in their household had been furloughed from

their job at some point since the start of the first UK-wide lockdown. Figures were lower in Wales than in the UK as a whole, where 40% across the UK had seen one or more of the listed impacts to their household income, including 22% for whom someone in their household had been furloughed in the same timeframe.

Figure 3 COVID-19 impacts on income, employment or working patterns, by country



D5. Have any of these happened to you or someone else in your household since the UK-wide lockdown started on 23rd March 2020?

Base = All Wales adults (1687).

Fieldwork dates: 20th November – 24th December 2020

- 2.16 Participants in England were significantly more likely than those in Scotland or Wales to report one or more impacts of this kind as a result of COVID-19 (41% in England v 35% in Scotland, and 30% in Wales).
- 2.17 In Wales, participants aged 25-44 were somewhat more likely than the Wales average to say that their household had been impacted in some way, with 38% selecting one or more impacts to income, employment or working patterns since the start of the pandemic (vs 30% on average). Participants from Ethnic Minority Communities in Wales were somewhat more likely to report impacts: 37% reported any impacts (vs 30% on average) and 28% had been furloughed (vs 17% on average). While significant, these differences by age and ethnicity were slightly less pronounced in Wales than in the UK as a whole (on average in the UK 51% of 25-44s reported any impact v 40% on average; 44% from Ethnic Minority Communities were furloughed v 40% on average).

2.18 In Wales, households in which the chief income earner was retired were significantly less likely to have experienced any such impact (8% v 30% on average). This is consistent with the UK findings.

Fuel-poverty relevant demographics

The fuel poverty proxy measure used for this research identified 22% of households in Wales in the study sample as “likely to be fuel poor” (the same proportion as in the UK as a whole). Due to sampling and methodological differences, this figure is not directly comparable with official fuel poverty measures²⁷.

The following groups were more likely to be considered as ‘likely to be fuel poor’ in this research:

- **Households in which at least one person has a disability or long term limiting illness:** 27% v 20% where no individuals have a disability/long term limiting illness.
- **Those under financial pressure:** 35% of households who find it difficult to meet housing costs nowadays.
- **Tenure type:** 39% of participants living in private rented accommodation²⁸, and 26% of those who reported problems relating to heating/maintenance in the home (vs 17% of those who reported no problems in the home).
- **Welsh Government region:** There were no significant differences in the proportions likely to be in fuel poverty by Welsh Government region: proportions were 20% in North Wales, 27% in Mid Wales, 25% in South West Wales and 21% in South East Wales.

Across the UK, households who had reported impacts from COVID 19 on their household income, employment or working patterns were also more likely to be classified as likely to be fuel poor (27%) but this pattern was not evident in Wales (23%).

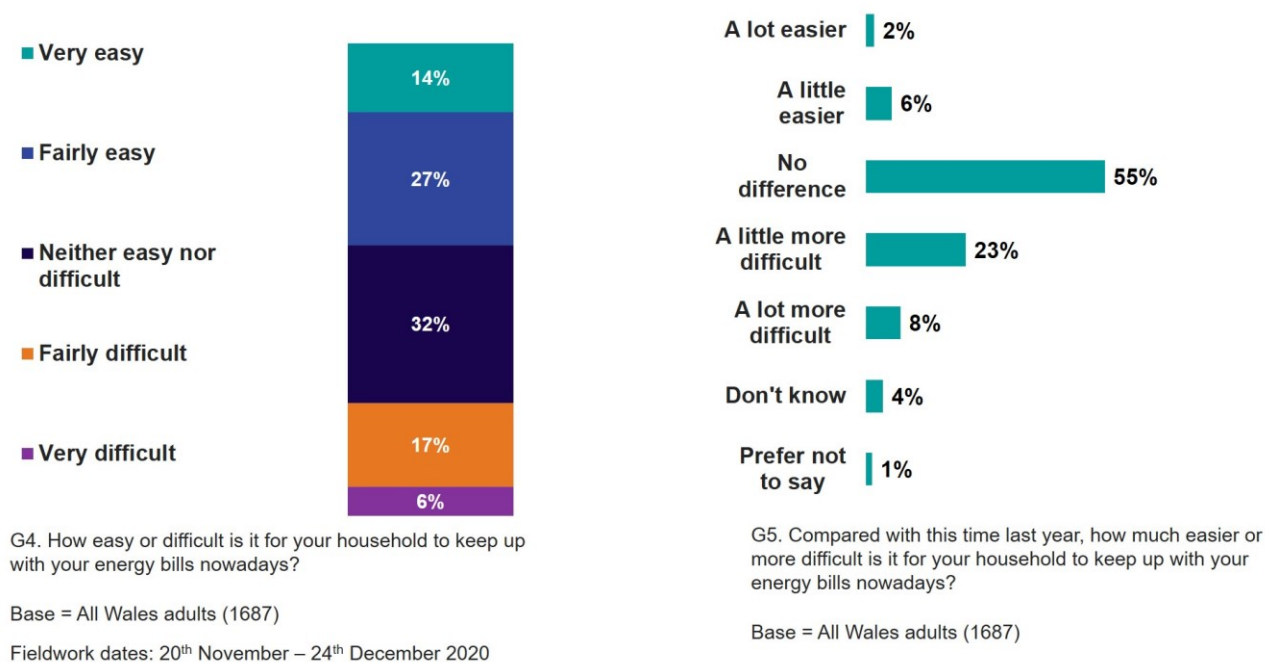
²⁷ For details of the “likely fuel poor” measure used for this research, see page 79.

²⁸ Note that 13% of participants in Wales living in social housing are classed as likely to be fuel poor, but the difference between this group and the Wales average (22%) is not statistically significant due to the small sample size of participants living in social housing. Also note that 22% of owner-occupiers are classed as likely to be fuel poor, the same proportion as the Wales average.

Difficulties in affording energy bills

2.19 In Wales, one in five survey participants (23%) said they were finding it difficult to keep up with energy bills at the time they completed the survey. The proportion was significantly higher amongst households on low incomes (39%), households with children (33%), and participants from Ethnic Minority Communities (29%). Those in households with children are also more likely to say it is more difficult to keep up with energy bills compared with the same time last year (41% v 31% on average) (Figure 4). Similar patterns were observed in the rest of the UK.

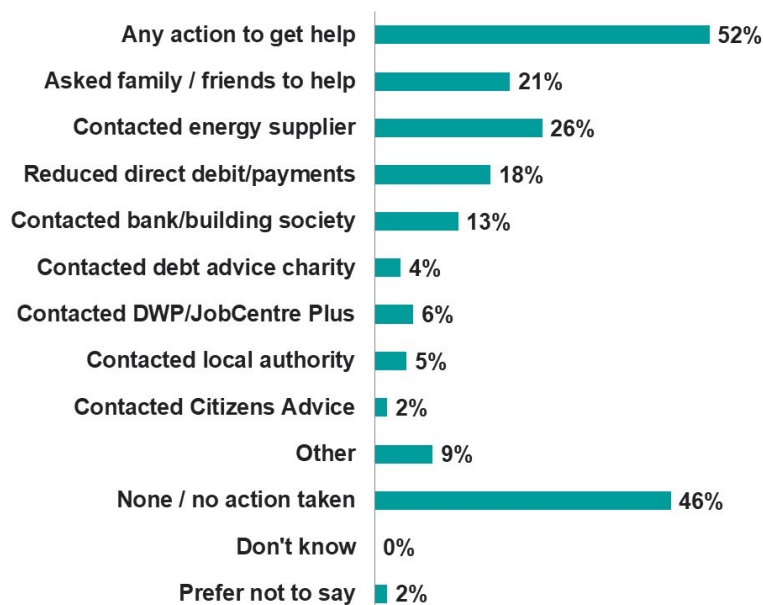
Figure 4 Difficulty keeping up with energy bills, nowadays, and compared to this time last year



2.20 Amongst participants in Wales who said they are finding it difficult to afford energy bills, half (52%) said they had sought any external assistance or advice: higher than the UK average of 43%. A quarter (26%) of participants in Wales had contacted their energy supplier (vs 18% UK average), and 21% said they had asked family or friends for help (vs 18% UK average). As in the rest of the UK, retired people in Wales who were finding it difficult to keep up with energy bills were significantly less likely to have taken any action from the list of external sources provided (27% said they have taken any action from the list provided v 52% on average across Wales)

(see Figure 5). This is an important finding given the greater health risks posed to older people living in cold homes.

Figure 5 Seeking help when struggling to pay energy bills

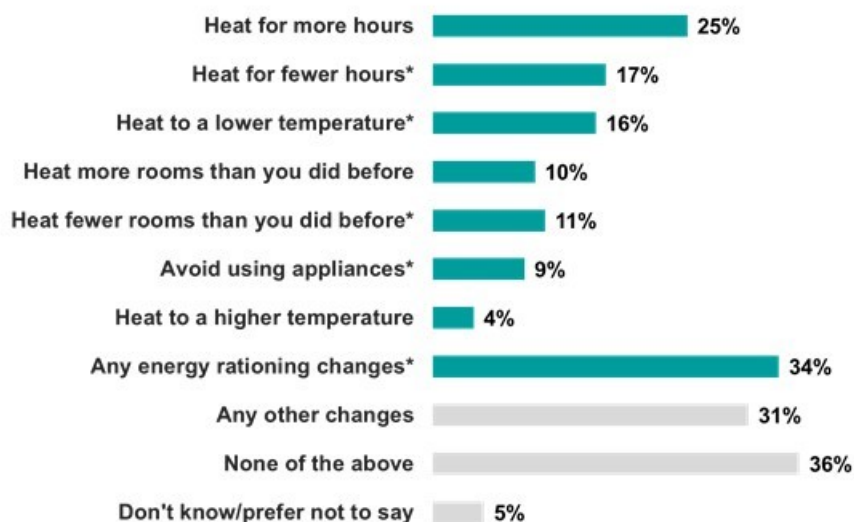


G7. Since the start of the UK-wide lockdown on 23rd March 2020 what actions, if any, have you taken to get help with paying your energy bills?
 Base: All Wales participants who are struggling to afford energy bills (216).
 Fieldwork dates: 20th November – 24th December 2020

- 2.21 Just under half (45%) of participants in Wales reported that their household was actively cutting back spending in some way to better manage their energy bills. This included cutting expenditure on clothes shopping (30%), entertainment such as days/nights out, holidays and treats (31%), and food shopping (15%). These proportions are very similar to the UK average.
- 2.22 Low income households in Wales, as in the rest of the UK, and those likely to be fuel poor were significantly more likely to have said they had cut back spending on one or more things in order to afford energy bills since the start of the pandemic (67% of low income households and 64% of those likely to be fuel poor v 45% on average). In particular, a quarter of low income households (26%) and a quarter of households likely to be fuel poor (24%) in Wales reported having reduced the amount they spend on food so they can afford energy bills (vs 15% on average).
- 2.23 Separate to seeking external support, a third (34%) of participants in Wales said their household had made changes that could be viewed as ‘energy rationing’ to the way they heat their home compared with the same time in the previous year

(indicated by an * in Figure 6). Groups significantly most likely to have made changes that could be thought to ‘ration’ energy usage were households likely to be fuel poor (44%) and those with children (39%).

Figure 6 Changes to home heating compared with same time last year



G10. Compared with the same time last year, has your household changed the way you heat your home in any of these ways?

Base = All Wales adults (1687). 'Energy rationing changes' are indicated by a *

Fieldwork dates: 20th November – 24th December 2020

2.24 Amongst participants in Wales who reported one or more ‘energy rationing’ changes in their household, three quarters (76%) said the change was wholly or partly driven by concerns about affording energy bills.

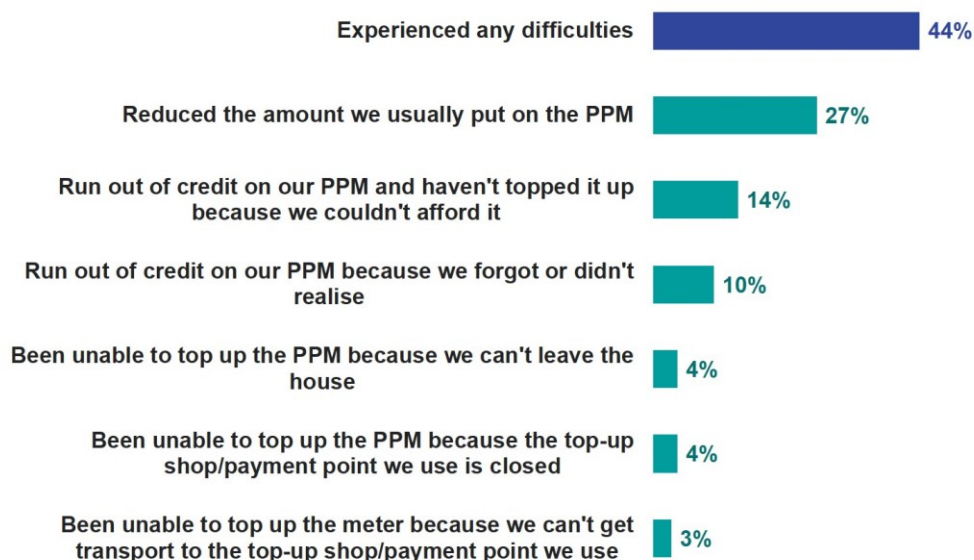
Impacts on households with pre-payment meters

2.25 In Wales, one in ten (12%) participants in the survey said their household pays for energy using a pre-payment meter: this proportion was slightly higher in Wales in our survey data than the all UK average of 9%. Groups in Wales more likely than average to use a prepayment meter are similar to the rest of the UK and include 16-24s (27%), participants living in a flat (23%) and those living in households where at least one person has a disability or long term limiting illness (19%).

2.26 In Wales, as across the UK, two-fifths (44%) of those whose household uses a pre-payment meter said they had experienced one or more difficulties associated with their pre-payment meter since the start of lockdown (as shown in Figure 7). In Wales, around a quarter (27%) had reduced the amount they usually put on the pre-

payment meter, one in ten had run out of credit and not topped up because they forgot (10%), and 14% had run out of credit and not topped up because they could not afford to²⁹.

Figure 7 Experiences of households with pre-payment meters (PPMs) since the UK wide lockdown started



G15. Which, if any, of these things has your household experienced since the UK-wide lockdown started on 23rd March?

Base = Wales, all participants with a prepayment meter (197)

Fieldwork dates: 20th November – 24th December 2020

2.27 Some questions were asked of pre-payment meter consumers in the online sample only, and so are reported on a lower base³⁰. In Wales, a quarter (26%) of pre-payment customers in the online survey said they had been temporarily disconnected at least once since March 2020 because they ran out of credit. Base sizes for self-disconnections since the start of lockdown are low³¹, so raw figures are shown instead of percentages. For households who had been self-disconnected in Wales, 10 participants said this has happened more frequently than it did before the first UK-wide lockdown. The disconnections varied in length: three lasted for three hours or less, ten were 4-6 hrs in length and nine were 7-24hrs in length.

²⁹ Ofgem asked similar questions in an online survey of energy consumers in October 2020 and achieved similar results, with 17% of pre-payment meter customers saying they have been unable to top up because they couldn't afford it, and 5% saying they have been unable to top up the meter because they can't leave the house.

³⁰ Base = 72 participants

³¹ Base = 16 participants

- 2.28 The research offers an indication of knowledge and awareness levels of initiatives that support pre-payment customers. For example, one in three (33%) of pre-payment customers in Wales (surveyed online and by post) were aware of alternative ways to top up if they have a smart meter installed (e.g. online, via app, or by phone). In Wales, five pre-payment customers with a smart meter said they have used online top-ups for the first time, or more than they did before the start of the first UK-wide lockdown in March 2020³².
- 2.29 However, fewer pre-payment meter customers in Wales overall (14%) knew that if they regularly run out of credit their supplier should get in touch to offer support, and 24% were aware that if they are struggling to top up because they cannot get to a top-up shop or cannot afford it their supplier is required to offer emergency credit.

Awareness and uptake of schemes to support households to improve home energy efficiency

- 2.30 All participants in the online survey were asked about their levels of awareness and likely participation in schemes to support home energy efficiency in their relevant nations. Participants in Wales were asked about the NEST scheme³³.
- 2.31 Just under two fifths (37%) of participants in Wales were aware of the scheme, with awareness higher amongst among owner-occupiers (38%) and private renters (42%) than among social renters (24%).
- 2.32 Participants who completed the online survey and said they had heard of the scheme were then asked if they considering using the scheme. The findings suggest uptake to be low in Wales, with one in ten (9%) saying they were considering applying for the scheme: though higher in South West Wales (17%, v 9% in South East and Mid-Wales and 6% in North Wales). Two in five (40%) participants in Wales thought they were not eligible for the scheme: somewhat higher at 47% in North Wales.

³² Base= 25 participants

³³ [Welsh Government NEST scheme](#)

3. Changes to net zero (NZ) relevant behaviours

Key findings

Waste and recycling and energy saving behaviours were the most prevalent net zero (NZ) behaviours among households in Wales at the time of the survey, as across the UK.

Behaviours which have some of the highest potential for carbon-savings from lifestyle change, such as active travel and eating a plant-based diet, had much lower prevalence.

There was positive uptake or increase in frequency across most of the NZ behaviours asked about, with just under two thirds (63%) of participants in Wales having taken up or increased at least one NZ behaviour at the time they completed the survey, compared with before the lockdown in March 2020.

To determine whether at a population level the public were reporting NZ behaviours more 'nowadays' (November/December 2020) compared with before the lockdown in March 2020, a 'net' level of change was calculated, by subtracting the total proportion of those doing each behaviour less from those doing it more. The highest NZ behaviour changes in Wales were seen for working from home rather than commuting to work³⁴, buying only what you really need, and gardening as a hobby. Population level negative NZ changes were generally smaller than positive NZ changes. However in a few cases such as planning no-fly holidays or public transport usage, population level NZ change equalled or outstripped levels of NZ positive change.

More extensive uptake or increase in frequency of positive NZ behaviours correlates with being younger, and being under financial pressure, among other factors.

Just over a third of participants in Wales overall had made no positive NZ behaviour changes between the first UK-wide lockdown and the time of

³⁴ Not all participants were in work, and therefore this NZ positive change was not applicable to all. It should also be noted that there is considerable scientific debate about whether working from home is NZ positive.

completing the survey. These participants tended to be older, or retired, and to not have children in the household.

Financial benefits and physical and mental well-being benefits of NZ behaviours were more important drivers of positive NZ behaviour change than concern for the environment itself.

Even where concern for the environment was high, the type and extent of NZ behaviour change did not always reflect this. Those most concerned were not always the most likely to have made positive NZ changes.

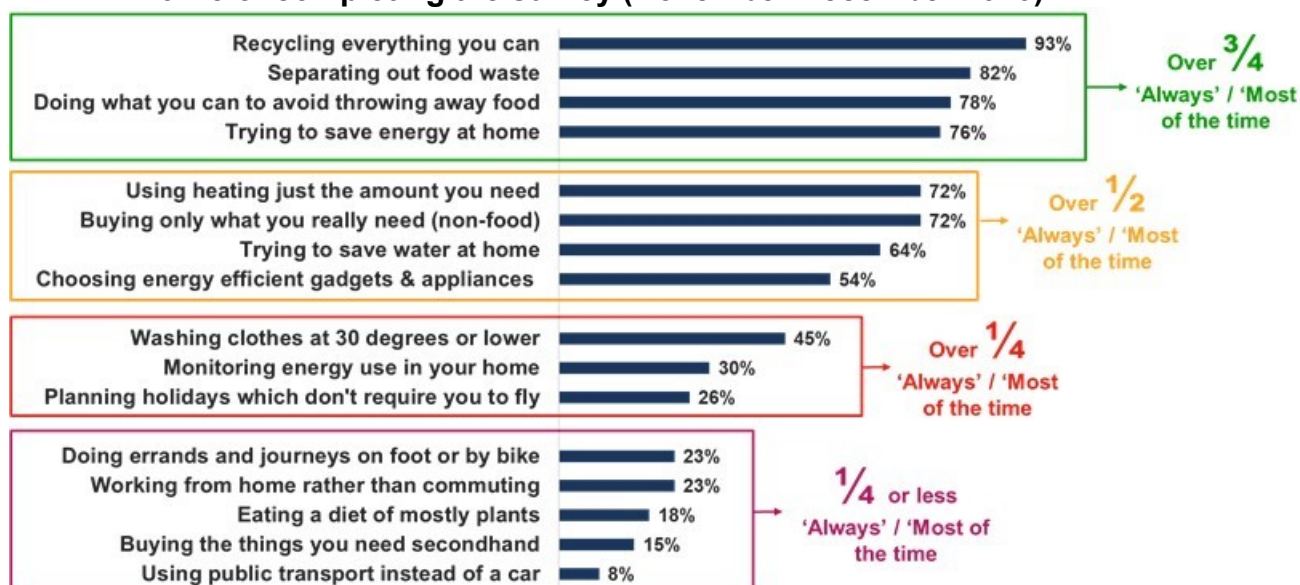
What was the prevalence of different NZ behaviours at the time of the survey?

- 3.1 As established, the COVID-19 pandemic and consequent restrictions to public movements and behaviours may have the potential to influence and change a wide range of NZ relevant behaviours. In the rapidly changing context of the pandemic, it is therefore helpful to look first at the 'state of play' with respect to NZ behaviours in Wales at the time of the survey (November/December 2020).
- 3.2 At the time of the research, participants reported that their most commonly and consistently practised NZ behaviours in Wales were recycling, separating food waste, and avoiding throwing away food³⁵. Some of the behaviours which have the most potential to reduce an individual's contribution to climate change were far less common and consistent. These included use of active travel or public transport rather than private vehicles, eating a plant-based diet, and planning holidays which do not require you to fly.
- 3.3 Participants in Wales reported a range of NZ behaviours that their household was doing 'Always' or 'Most of the time' at the time of the survey (Figure 8)³⁶.

³⁵ Note that, as stated above, during the Wave 1 fieldwork period, Wales entered the winter lockdown on 19th December 2020, which overlapped with the end of the fieldwork period. Scotland was under tight restrictions and England was operating under a 'tier' system of restrictions. Participants' behaviour was therefore constrained and influenced in different ways and to differing extents across the UK.

³⁶ Note that 'active travel' behaviours were defined for participants as 'Doing errands and journeys on foot or by bike or scooter rather than by car, e.g. your commute, school run, trips to the shops.'

Figure 8 Prevalence of NZ behaviours, performed 'always' or 'most of the time' at the time of completing the survey (November/December 2020)



E2a-E5b: You will now see a series of statements about things you might or might not have been doing relating to [food/water, heating and energy use/buying things and throwing things away/travel and transport]. For the following statement, is this something you personally do nowadays?

Base: All Wales adults (1687).

Fieldwork dates: 20th November – 24th December 2020

3.4 There were very few significant differences between Welsh regions in the proportions reporting NZ behaviours always or most of the time, though participants in Mid Wales were slightly more likely to report a range of NZ behaviours:

- avoid food waste (87% v 78% all Wales average)
- try to save energy at home (83% v 76%)
- try to save water at home (68% v 64%)
- buying only what you need (81% v 72%)
- buying second hand (19% v 15%)
- planning no-fly holidays (31% v 26%)

3.5 However, participants in Mid-Wales were significantly less likely than average to say they used public transport instead of a car (5% v 8% all Wales average), which may reflect availability of public transport in rural areas.

3.6 Those in Wales with a smart meter were nearly twice as likely as those without to say that they monitor energy use at home 'always' or 'most of the time' (48% of smart meter owners, v 27% without a smart meter). There was a small but

statistically significant difference in the proportion of participants who reported that in their household they tried to save energy at home 'always' or 'most of the time' between those with a smart meter (76%) and those without (79%).

- 3.7 The research also asked whether people were often, sometimes, occasionally, or never doing low carbon recreation activities, which included spending free time in nature (43% in Wales were doing this often) and gardening as a hobby (29% were doing this often).

What behavioural changes have adults in Wales made since the first UK-wide lockdown?

- 3.8 Changes in frequency of NZ behaviours were calculated by asking participants first: 'What do you personally do nowadays?' (at the time of completing the survey) and then, to reflect retrospectively on their behaviour before the pandemic: 'What did you personally do before the UK-wide lockdown started on 23rd March 2020?'³⁷. Positive NZ behaviour change was calculated as an increase in frequency since before the first UK-wide lockdown, while negative NZ behaviour change is indicated by a decrease in frequency.
- 3.9 Uptake or increases in frequency of NZ behaviours since the first UK-wide lockdown appear very common in Wales, as across the UK. Two thirds (63%) of participants in Wales had taken up or increased at least one NZ behaviour, including 37% who had taken up or increased 1-2 behaviours. Nearly one in five, however, have gone further, with 16% having taken up or increased 3-5 behaviours, and 10% having taken up or increased 6+ NZ behaviours. These proportions are very similar to the all UK average (66% had taken up or increased at least one NZ behaviour and 10% had taken up or increased 6+ behaviours).
- 3.10 However, 57% in Wales reported at least one negative NZ behaviour change (i.e. they had reduced the frequency of a NZ behaviour, or stopped altogether).

³⁷ Answer options were 'always' 'most of the time' 'about half the time' 'sometimes' or 'never' for behaviours that included an inherent choice – for example, working from home rather than commuting. For behaviours where a binary pro-environmental / potentially NZ negative alternative was not inherent, the scale was 'often' 'sometimes' 'occasionally' or 'never'. The two behaviours presented in this way were 'Gardening as a hobby, which might include growing your own herbs, fruit and/or vegetables when the season or weather allows' and 'Spending free time using public parks, the countryside, the coast or other public green space for fresh air and exercise'. Full questionnaire details are in the annex.

Main NZ behaviour changes post lockdown

What NZ behaviour changes have increased overall?

- 3.11 There was a positive uptake or increase in frequency across most of the NZ behaviours explored in the survey. Figure 9 and Figure 10 show the population level 'net changes'. These were calculated by subtracting the total proportion of those who reported doing each NZ behaviour less from the proportion doing it more nowadays (November/ December 2020), compared with before the lockdown started in March 2020.
- 3.12 The most common positive net changes in NZ behaviours were those where behaviour has been directly impacted by restrictions. In Wales, the highest net changes were seen for working from home rather than commuting (+22%), buying only what you really need (+20%), and gardening as a hobby (+10%), but substantial increases are also seen across other NZ behaviours. This said, there was been some negative changes in NZ behaviours across all behaviours, with some participants in Wales doing these less than they were before the start of the first UK-wide lockdown or stopping altogether. In some cases, negative NZ changes have been substantial; for example, while 15% have increased the extent to which they spend free time outdoors, 14% are now doing this less frequently, leading to a net change of +1 percentage points³⁸ (see Figure 10).

³⁸ Note that the saving energy and saving water changes should be noted in the context of increased overall consumption – so while action on these behaviours has increased, this is unlikely to affect a measurable downward trend in usage of energy and water.

Figure 9 Behaviour changes (5 per cent and over 'net' positive NZ behaviour change)



Chart shows % of survey participants indicating each behaviour change through their survey answers.

Net behaviour change = positive – negative. Behaviours with net increase of 5% or more shown

Base: All Wales adults (1687)

Fieldwork dates: 20th November to 24th December

What positive NZ behaviour changes were less common?

- 3.13 More marginal gains in terms of positive NZ behaviour increases were seen for a number of different behaviours (Figure 10). In some cases, gains and losses nearly or actually balanced each other out.
- 3.14 Only two overall negative NZ behaviour changes were seen amongst Welsh participants. In the case of use of public transport, the research saw a strong shift away from using public transport rather than a car, with nearly one quarter of participants in Wales reporting they did this less frequently at the time they completed the survey than they did before the first UK-wide national lockdown.³⁹ There was also a negative NZ change in relation to planning holidays which don't require you to fly, with 18% in Wales saying they did this less frequently than before the first UK-wide lockdown, and 13% saying they did this more frequently, leading to a net change of -5%.

³⁹ [Ipsos research for DfT \(2020\)](#) also shows this substantive downturn.

Figure 10 Behaviour changes (below 5 per cent 'net' positive NZ behaviour change)

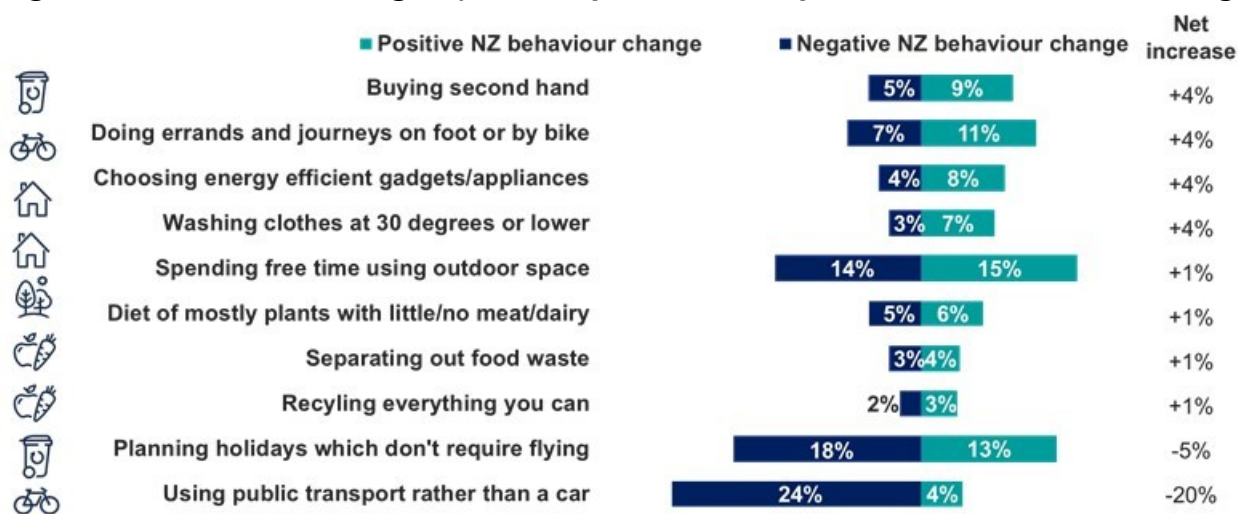


Chart shows % of survey participants indicating each behaviour change through their survey answers.

Net behaviour change = positive – negative. Behaviours with net increase less than 5% shown

Base: All Wales adults (1687)

Fieldwork dates: 20th November to 24th December

3.15 Little or no net positive NZ behaviour change was seen in Wales across the following behaviours:

- Spending free time using outdoor space (public parks, the countryside, the coast or other public green space) for fresh air and exercise
- Eating a diet of mostly plants with little or no meat and dairy
- Separating out food waste
- Recycling everything you can using the boxes, bins or banks your council provides, though it should be noted that recycling rates reported by survey participants were already very high (93%), and are usually high across Wales in non-pandemic times⁴⁰.

3.16 There were few regional differences in reported behaviour changes, and no one region was more likely than average to report any individual positive NZ behaviour changes. However, in a small number of cases, participants in North Wales were significantly more likely than the all-Wales average to report negative NZ behaviour

⁴⁰ Welsh Government. (2020). [Local authority municipal waste management: April 2019 to March 2020](#).

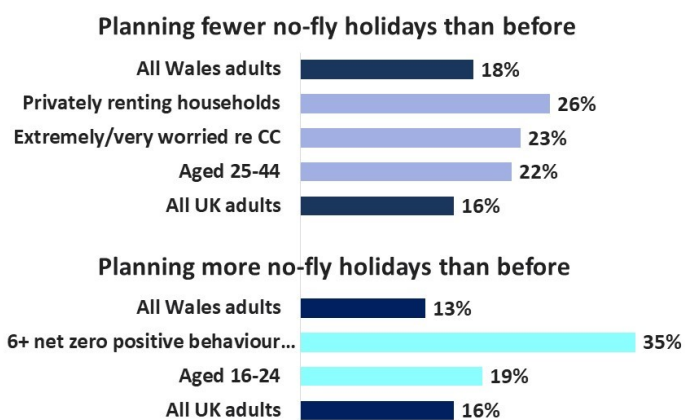
changes, though they were no less likely to report positive NZ behaviour changes. These differences do not appear to be linked to profile (e.g. age, income, indicators of financial difficulty). The negative NZ behaviour changes more likely to be reported by participants in North Wales are as follows:

- Using your heating just the amount you need (9% in North Wales v 6% all Wales average)
- Avoiding food waste (8% in North Wales v 5% all Wales average)
- Choosing energy efficient appliances (7% in North Wales v 4% all Wales average)

What NZ behaviours are happening less overall, or less consistently at the time of the survey?

- 3.17 For some behaviours, many people had made changes, but there were similar proportions undertaking the behaviours more and less, so there is likely to be little environmental benefit. Planning no-fly holidays is one area in which behaviour was polarised. While 13% in Wales said they were planning holidays which do not require you to fly more often compared with pre-lockdown, 18% said they are doing this less often. Proportions reporting changes in this domain were not evenly distributed (Figure 11): younger people and households under less financial pressure were more likely than average to report they were planning no-fly holidays more often compared with before lockdown (positive NZ behaviour change).

Figure 11 Breakdown of sub-groups more likely to have made changes with respect to no-fly holidays



Behaviour change reported: proportion saying they were 'Planning holidays which don't require you to fly to the destination' more often nowadays (Nov/Dec 2020) compared with before lockdown on 23 March 2020. Base= All Wales adults (1687).
Fieldwork dates: 12th November – 24th December 2020

3.18 It is notable that participants in Wales who later in the interview said they were 'very' or 'extremely worried' about climate change were more likely to report that they were planning fewer no-fly holidays than before lockdown (23%, compared with 18% on average)⁴¹, representing a NZ *negative* behaviour change. Although exploring why this might be the case was outside the scope of this research, this correlation may suggest that public knowledge of the carbon impacts of flying, or public willingness to connect values and actions for this behaviour, remains low, given that taking flights is one of the biggest potential contributors to an individual's carbon footprint.

3.19 Spending free time using outdoor space, countryside or the coast was also very polarised, having increased for 15% of participants in Wales, and decreased for 14%. The influence of shielding is likely to be at work here, with significantly fewer of those living with a person with a disability or long term limiting illness in their household saying they are spending more time outdoors (10% v 16% of households who don't report the presence of a person with a disability or long term illness). It is the research team's view that UK and Welsh Government messaging around staying at or close to home at around the time the fieldwork took place

⁴¹ See 'How worried were people about climate change, and how have these views changed?' (page 59) for details about who is more likely to fall into this sub-group.

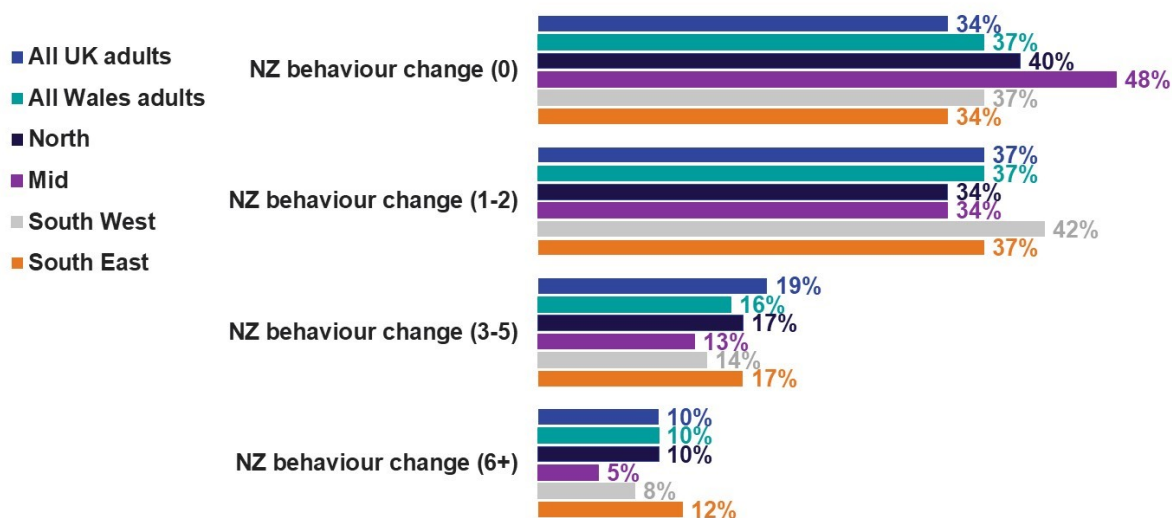
(November/December 2020) may also have influenced time spent outdoors for some. Once again, these findings are very similar to the all UK average.

Who is changing their behaviour?

- 3.20 There is a positive correlation between increased time at home and positive NZ behaviour change. In Wales, nine in ten (92%) participants who were spending more time at home made one or more positive NZ behaviour changes, compared with 7% of those who had not experienced a change to the amount of time being spent at home.
- 3.21 Changes were consistent across UK nations, with very few differences noted between Wales, England and Scotland. The mean average number of positive NZ behaviour changes reported in each country did not differ significantly from each other: 1.95 in Wales, 2.06 in England and 1.99 in Scotland⁴².
- 3.22 There was also little variation by region within Wales. Participants in South West Wales were most likely to say they have made 1-2 positive NZ behaviour changes (42%), and those living in mid-Wales were most likely to have made no behaviour changes (48%).

⁴² The mean number was 1.03 in Northern Ireland but the low sample size (n=44 should be noted).

Figure 12 Number of positive NZ behaviour changes reported per participant - UK average, and by Wales' regions



Number of NZ behaviour changes reported per participant.
 Bases= All UK adults (4898), all Wales adults(1,687), North Wales (397); Mid Wales (447); South West (401); South East (442)
 Fieldwork dates: 12th November – 24th December 2020

3.23 Overall, the profile of participants making one or two positive NZ behaviour changes is relatively similar to the average, with no groups greatly more likely to have made one or two changes.

3.24 When looking at those who have made 3-5 positive NZ behaviour changes, there are more differences, with the following groups in Wales more likely to report 3-5 changes (v 16% on average across Wales):

- Mid-age participants (23% of 25-44s)
- People in households which have experienced impacts on income, employment or working patterns from COVID-19 (23%)
- Those in a household where the chief income earner is in employment (22%)

Who had made the most changes?

3.25 Some participants in the research had made a large number of positive NZ behaviour changes, with 10% of participants having made six or more such changes, which includes 2% who reported 10 or more positive NZ changes. The proportion in Wales was the same as the UK average. Figure 13 summarises sub-groups more likely to have made six or more changes.

Figure 13 Sub-groups more likely to have made six or more positive NZ changes

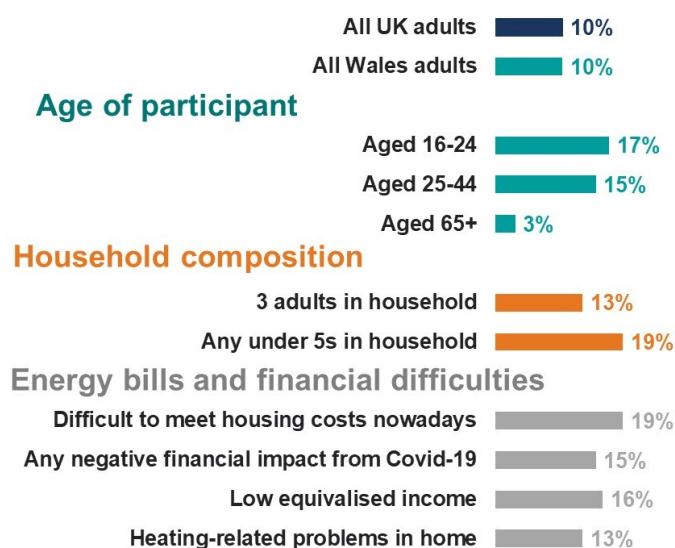


Chart shows % of participants who have made 6 or more NZ behaviour changes in different groups.

Bases = All UK adults base (4898); All Wales adults base (1687)

Fieldwork dates: 12th November – 24th December 2020

Who is not changing their behaviour?

3.26 Two-fifths (37%) of participants in Wales had made no positive NZ behaviour changes since the first UK-wide lockdown. These participants tend to be older, or retired, and not have children in the household. Social renters and those with heating-related problems in their home were also more likely to have made no net NZ changes⁴³. Further households in Wales who are under fewer financial pressures are more likely to have made positive changes – and are less likely to have made no changes (figures in the list below are compared with a 37% all Wales average):

- Those aged 65+ (56%), or where the chief income earner was retired (58%)⁴⁴
- Those without children in the household (41% v 28% with children in the household)
- Social renters (45%)

⁴³ While those reporting heating-related problems in their home are more likely to have made 6+ pro-environmental changes, they are also more likely to have made no pro-environmental changes.

⁴⁴ Note that some changes are not applicable to this group, for example, working from home.

- Those who did not report heating-related problems in their home (45%)
- 42% of those who had experienced no impacts on income, employment or working patterns associated with COVID-19 (42% v 23% of those who had experienced any such impacts)

3.27 In addition, participants in Mid Wales were more likely to have made no positive NZ behaviour changes (48% v 40% all Wales average), though it was noted above that they tended to report more positive NZ behaviours than other regions.

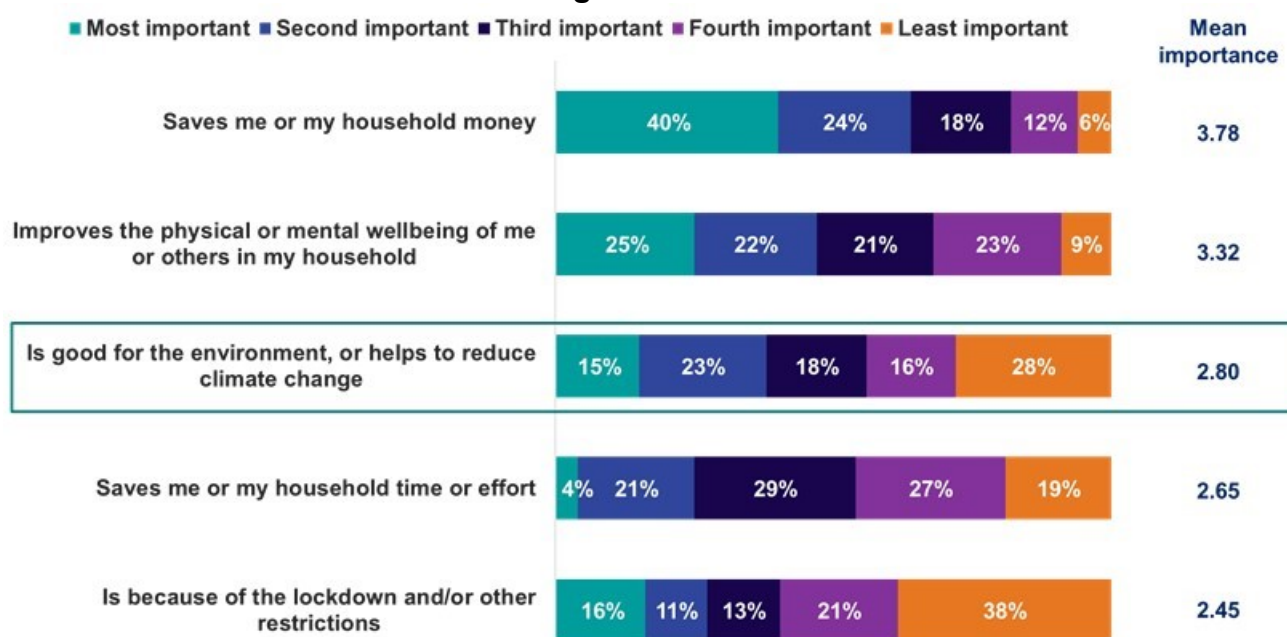
What is prompting behaviour change?

3.28 Amongst participants who have made at least one positive NZ change, the financial and well-being benefits of the change are considered more important reasons for change than environmental considerations.

3.29 Participants in the online survey⁴⁵ were presented with a list of five common drivers of the relevant positive NZ behaviour changes and asked to rank these from most to least important regarding the changes they personally had made. 'It is good for the environment or helps reduce climate change' was the middle-ranked reason of the list of reasons given with a mean importance score of 2.80 by participants in Wales. Just 15% ranked environment or climate change most important, while 28% ranked this the least important reason for changes. Ratings in Wales were very similar to the all UK average.

⁴⁵ It was not possible to make calculations on positive NZ behaviour changes in the postal survey, so questions following up on behaviour changes could not be asked of the sample completing the postal questionnaire.

Figure 14 Importance of reasons for making changes, as ranked by participants who had made at least one change



F2a-e. There are lots of different reasons why people might have made the changes you have. Some of the reasons are laid out below. Thinking overall, please rank the reasons from most important to least important.

Base: All Wales adults reporting at least one positive NZ behaviour change, online only (555)

Fieldwork dates: 20th November – 24th December 2020

3.30 Rankings of motivations in Wales were very similar to the rest of the UK, as follows:

- Financial benefits and well-being were ranked most important. Saving money was the highest ranked driver, with a mean score of 3.78. This was followed by positive impacts on physical or mental well-being, with a mean score of 3.32
- Of lesser importance in changes was that they save time or effort, with a mean importance score of 2.65. This probably reflects the fact that many positive NZ changes are not more convenient for people to do
- The least important reason for the changes for participants in Wales was 'because of the lockdown or other restrictions' with a mean importance score of 2.45. This suggests to the research team that while the lockdown clearly has triggered changes, it is not in itself seen as important in participants' understanding of why change has occurred. This emphasises the complexity of the behaviour change process, and the importance of understanding participant rationalisation of change and intrinsic reasons and motivations, as well as external influencers of change

Understanding behaviour change among vulnerable and fuel poor consumers

- 3.31 There were no significant differences in the overall number of positive NZ changes made between those likely and those not likely to be fuel poor in Wales. However, there were some significant differences in the specific behaviour changes seen.
- 3.32 Those likely to be fuel poor were more likely to have made positive NZ behaviour changes, particularly relating to home energy use, which may be symptomatic of energy rationing behaviours:
- 14% of those likely to be fuel poor were using the heating just the amount needed to keep warm more often, v 11% not likely to be fuel poor
 - 15% trying to save energy at home, v 8% not likely to be fuel poor
 - 12% washing clothes at 30°C or less, v 5% not likely to be fuel poor
 - 13% buying things second hand, v 8% not likely to be fuel poor
- 3.33 Those in Wales who are likely to be fuel poor reported lower levels of positive NZ behaviour change across the following measures:
- 18% working from home more rather than commuting to work, v 39% not likely to be fuel poor
 - 13% planning holidays which don't require you to fly, v 20% not likely to be fuel poor
- 3.34 Those likely to be fuel poor were more likely to have made *negative* NZ changes relating to spending time in nature:
- Spending free time using outdoor space, countryside or the coast (19% doing this less, v 13% not likely to be fuel poor)
 - Gardening as a hobby (9% doing this less, v 4% not likely to be fuel poor)
- 3.35 While across a number of measures, those in Wales who are likely to be fuel poor have made more NZ positive changes than those not likely to be fuel poor, there are some very clear indicators that these changes were not freely made pro-environmental choices, and were not positively affecting the lives or well-being of those likely to be fuel poor. When asked about the reasons behind positive NZ

behaviour changes made, half of those who have made changes and who were likely to be fuel poor ranked saving money as their most important reason (49% v 36% average). This group was no more or less likely than average to view the environment and climate change as their most important reason for changes (18% v 17% average).

- 3.36 It is notable that when participants were asked to state how anxious they had felt the day before taking the survey (on a scale where 0 is 'not at all anxious' and 10 is 'completely anxious') those likely to be fuel poor had a higher mean score for anxiety levels than those not likely to be fuel poor (6.14 v 4.19, respectively). Both increased financial pressure and decreased time spent in nature were observed in this group, and can be linked to higher anxiety levels or lower overall well-being^{46 47}.
- 3.37 Earlier this report (see Figure 6) identified that since the first UK-wide lockdown, three in ten participants in Wales had made what could be viewed as 'energy rationing' changes to the way they heat their home. The findings demonstrate that increased financial pressures related to the COVID-19 pandemic may have had significant impacts on home heating arrangements among lower income households and those likely to be fuel poor.
- 3.38 Four in five (76%) of all participants in Wales whose household had made 'energy rationing' changes did so because of concerns about affording energy bills. This was significantly higher amongst those in households likely to be fuel poor, with almost all (96%) saying they had rationed their home energy use due to concerns about being able to pay for energy bills. Among those with low income but who were not classed as likely to be fuel poor because their home's EPC rating is A-C, this figure was 92% - not significantly different. This suggests it is income rather than efficiency of home heating which is the bigger factor in prompting energy rationing behaviours. Households likely to be fuel poor who report energy rationing behaviours were also significantly more likely to agree that their household was rationing energy use because of financial concerns (42% v 25% average).

⁴⁶ [Natural England \(2021\) The People and Nature Survey](#)

⁴⁷ [Personal and economic well-being in Great Britain: May 2020 \(ONS, 2020\)](#)

3.39 In Wales, participants in households likely to be fuel poor were twice as likely as average to say they could not afford to heat their home to a comfortable level because of financial concerns (38% v 20% on average). When exploring positive NZ behaviour changes, households likely to be fuel poor were significantly more likely to report changes relating to careful heating use (16% v 12% on average across the UK); washing clothes at 30°C or lower (9% v 5% on average); and trying to save energy at home (14% v 10% on average).

For whom is the environment a stronger driver of change?

- 3.40 It seems that in Wales (as in the rest of the UK), the older generations were more likely to say that the environment was a priority when making these changes. While those aged 65+ were less likely to have changed behaviour, it is interesting to note that in this age group those who had made positive NZ behaviour changes ranked the environment as a strong driver of change. A third (33%) in this group ranked the environment as the second most important reason for making changes, which is significantly higher than 23% on average.
- 3.41 Income was a strong differentiator of reasons for making changes. Among those on low incomes, 60% ranked 'saving money' as the most important reason for making change, while among those whose income was £16,000 per annum or above, 38% rated this the most important reason for positive NZ changes.
- 3.42 In Wales, across all age groups those under less financial pressure were also more likely to rank the environment as the most important driver of change. Those finding it easy to meet household living costs were more likely to rank environment as the most or second most important driver of change (16% and 25% respectively) compared to those finding it difficult (7% and 17% respectively).

4. Sustainability of behavioural changes

Key findings

Early findings suggest that some positive NZ behaviour changes amongst participants in Wales are likely to continue in the long-term.

The evidence demonstrates a strong desire from participants to continue the changes they reported having made. The survey also asked likelihood of continuing these changes, and found that desire to maintain changes closely matched likelihood.

Households in Wales would most strongly welcome financial support in order to help them maintain positive NZ behaviour changes.

One in three (31%) of those making any positive NZ behaviour changes suggested that, in order to help them maintain the changes, either during lockdown or once the restrictions are removed, the government could provide financial help, subsidies, or incentives. Households in Wales for whom COVID-19 had had a negative impact on income, employment or working patterns, and households with a low equivalised income, were significantly more likely to take this view (41% and 39% respectively).

Maintaining changes in the long-term

4.1 The research suggests that participants who have made positive NZ behaviour changes have a strong desire to maintain most of the changes they have made. Positive NZ behaviours participants in Wales were most likely to want to maintain include:

- Trying to save energy at home (97%)
- Avoiding food waste (96%)
- Recycling everything you can (96%)
- Trying to save water at home (88%)
- Choosing energy efficient appliances (87%)

Figure 15 Proportion of those making positive NZ changes who want to maintain the changes made



Those answering "Definitely" or "probably want to keep doing this" to F1a. Which, if any, of the things you have been doing more since the UK-wide lockdown started on 23rd March 2020, would you like to keep doing, once restrictions are permanently removed?

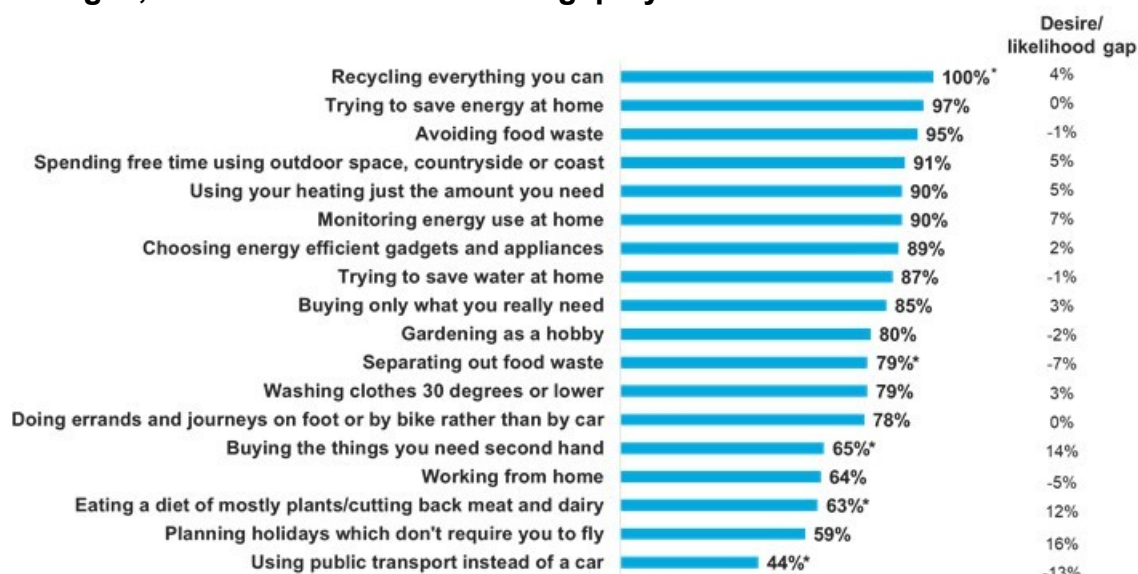
Base: All Wales adults reporting at least one positive NZ behaviour change and asked about it, online only.

Base varies from behaviour to behaviour (10-154) *NB: Indicates the base is lower than 50.

Fieldwork dates: 20th November – 24th December 2020

4.2 There is evidence to suggest that positive NZ behaviour changes are likely to continue in the long term, as the changes that households in Wales say they *want to maintain* and those they are *likely to maintain* are often similar. For example, all households who said they are recycling more also said they want to continue doing so once restrictions are permanently removed, and 96% said they are likely to continue doing this (though the low base should be noted: n=30). The gaps between desire and likelihood are broadly quite minimal (Figure 16 shows the desire/likelihood gap, calculated by subtracting the proportion who say they are likely to maintain a positive NZ behaviour from the proportion who want to maintain it).

Figure 16 Proportions who say they are likely to maintain positive NZ behaviour changes, and the desire / likelihood gap by behaviour⁴⁸



Those answering "Very likely I will keep doing this more" or "Quite likely I will keep doing this more" to F1b. How likely, if at all, are you to continue the things you have been doing more since the UK-wide lockdown started on 23rd March 2020?

Base: All Wales adults reporting at least one positive NZ behaviour change and asked about it, online only.

Base varies from behaviour to behaviour (10-154) *NB: Indicates the base is lower than 50.

Fieldwork dates: 20th November – 24th December 2020

4.3 In Wales, for behaviours where there is a disparity between likelihood to continue and desire to continue, likelihood is often higher (e.g. buying the things you need second hand, cutting back meat/dairy). This may be linked to financial motivators and suggests that for many, these changes are extrinsically rather than intrinsically motivated. Where desire to continue exceeds likelihood to continue (e.g. for separating out food waste, gardening as a hobby, working from home, using public transport instead of a car) practical support measures may be most needed.

What can government do to support positive NZ behaviour change?

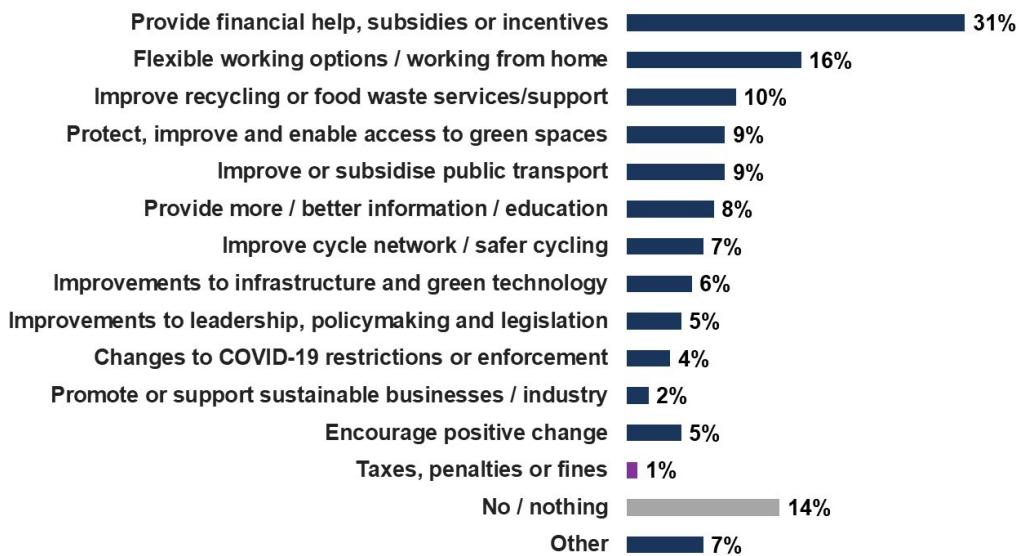
4.4 When those in Wales who had made any positive NZ behaviour changes were asked what the UK Government and the Welsh Government could do to support them in maintaining these changes, financial issues again dominated. Positive support was favoured over punitive steps: government providing financial help, subsidies or incentives was mentioned by 31% of those making changes, while only

⁴⁸ In the desire / likelihood gap calculation, a positive number indicates likelihood exceeds desire (i.e. the participant feels they're likely to keep doing this, but don't necessarily want to). A negative value indicates desire to continue exceeds likelihood (i.e. the participant wants to keep doing this, but feels they are unlikely to once restrictions are permanently removed).

1% thought there should be taxation, penalties, or fines. Responses in Wales were very similar to the all UK average.

4.5 Endorsement for the government providing financial help/support was higher from participants in households likely to be fuel poor (35% v 20% of those not likely to be fuel poor). Groups most likely to be working from home, such as 25-44s, were most likely to suggest Government assistance with flexible working options (29% v 16% on average).

Figure 17 What government can do to support positive NZ behaviour changes



F3. Is there anything that the Welsh Government could do to help you keep doing these things more, either during lockdown or once restrictions are permanently removed?

Base: All Wales adults who answered they have made a positive NZ behaviour change to one or more behaviour, online only (243)

Fieldwork dates: 20th November – 24th December 2020

5. Attitudes to climate change

Key findings

Most participants in Wales believe that human activities contribute towards climate change and believe that its effects will negatively impact the UK within their own lifetimes: similar views were expressed across the rest of the UK.

A strong majority (84%) of participants in Wales believed in anthropogenic climate change, and 76% believed the UK will be negatively impacted by climate change within their lifetime: older participants were less likely to agree with the latter statement.

The overall degree of concern regarding climate change reportedly increased since the first UK-wide national lockdown, though the reported increase was largely among those who were already worried.

A fifth (21%) of participants in Wales reported that their concern about climate change had increased in this period, compared with one in twenty (7%) who reported that their concern had decreased. Most, however, report that their level of concern remained unchanged (69%).

Most in Wales supported a green recovery, though this depends on how a green recovery is presented.

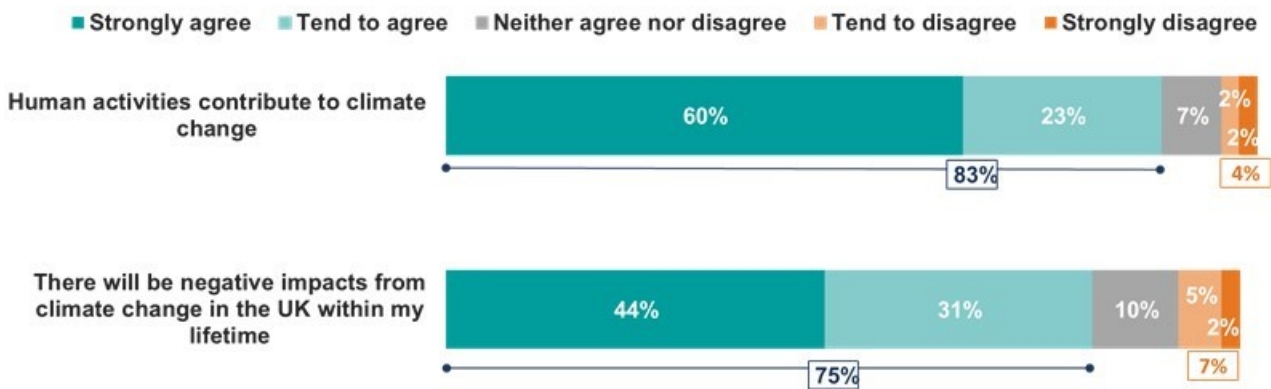
Two thirds (65%) of participants in Wales said they wish to see a green economic recovery, but around half (47%) would oppose policies that would promote economic growth at the expense of the environment. Those who described themselves as worried about climate change displayed far greater support for green economic policy than those who were not worried.

Awareness and attitudes towards climate change

- 5.1 A significant majority of participants in Wales were aware of climate change as an issue, and of its potential impacts. The vast majority, 84%, agreed with the statement that human activities contribute to climate change, with 60% in strong agreement. In contrast, only one in twenty (4%) disagreed. Equally, three quarters

(76%) believed that negative consequences arising from climate change will occur in the UK within their lifetime, with fewer than one in ten (7%) believing that such consequences will not occur. Responses were very much in line with the all UK average (85% agreed that human activities contribute to climate change and 75% agreed that negative consequences will occur in their lifetime).

Figure 18 Extent of agreement and disagreement - Human activities contribute to climate change; There will be negative impacts from climate change in the UK within my lifetime.



C2a-b. To what extent do you agree or disagree with the following statements?
 Base: All Wales adults (1687)
 Fieldwork dates: 20th November – 24th December 2020

5.2 It is notable that levels of awareness were high amongst most sub-groups in Wales, including participants of different ages, ethnic groups and from different nations. The only consistent and significant differences were by indicators of poverty (Figure 19), though those in households likely to be fuel poor were not significantly less likely than average to agree⁴⁹.

⁴⁹ 85% of those in households likely to be fuel poor agreed that 'Human activities contribute to climate change' and 76% agreed that 'There will be negative impacts from climate change in the UK within my lifetime'.

Figure 19 Extent of agreement by income indicators - Human activities contribute to climate change; There will be negative impacts from climate change in the UK within my lifetime.

% agreeing	Human activities contribute to climate change	There will be negative impacts from climate change in the UK within my lifetime
All participants (n=1687)	84%	78%
Find it difficult to meet housing costs (n=344)	83%	75%
Low income households (<£16K pa) (n=358)	81%	72%

5.3 There were also links between positive NZ behaviour change and awareness:

- 74% of those reporting no positive NZ behaviour changes agree that human activities contribute to climate change (vs 84% on average)
- 63% of those reporting no positive NZ behaviour changes agree that there will be negative impacts from climate change in the UK in their lifetime (vs 76% on average)

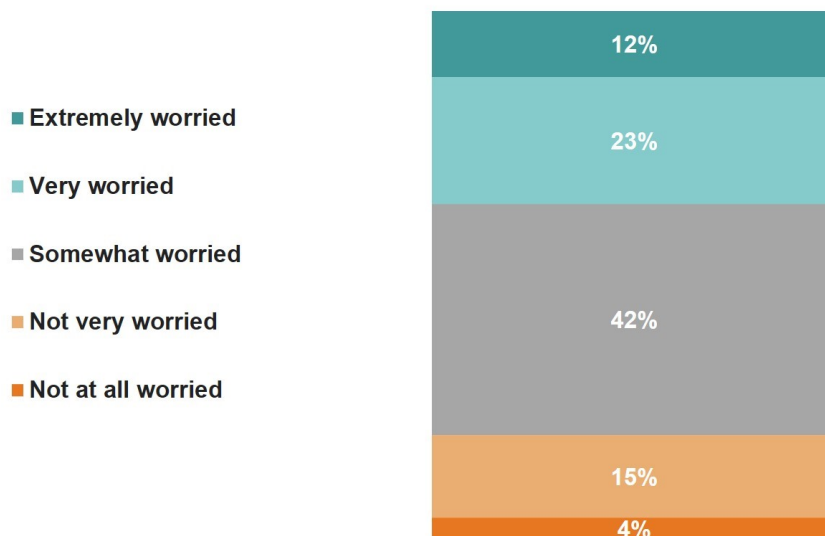
5.4 The fact that links between these measures of awareness and positive NZ behaviour change are not very strong may be linked to the fact that few indicate that they had made positive NZ behaviour changes for environmental reasons.

5.5 It is also notable that levels of agreement with the statement that ‘there will be negative impacts from climate change in the UK within my lifetime’ were higher amongst younger people (ranging from 82% amongst 16-24s to 64% of those aged 65 and over), which may reflect the shorter perceived time horizons amongst older age groups. Similar patterns were seen in the rest of the UK.

How worried were people about climate change, and how have these views changed?

- 5.6 Alongside the broadly held view that human activities contribute to climate change, participants in Wales expressed a high degree of worry about the impacts of climate change. This question was only asked of participants completing the online survey.
- 5.7 When asked about their level of worry about climate change, 77% of online participants in Wales reported they were at least somewhat worried about climate change, with 35% describing themselves as very or extremely worried (Figure 20). While levels of worry were high amongst all sub-groups, men (22%) were more likely than average (19%) to say they were not worried. Notably, levels of worry did not vary across income groups.

Figure 20 Degree of worry about climate change



C3a. How worried about climate change are you nowadays?

Base: Wales adults, online only (1024)

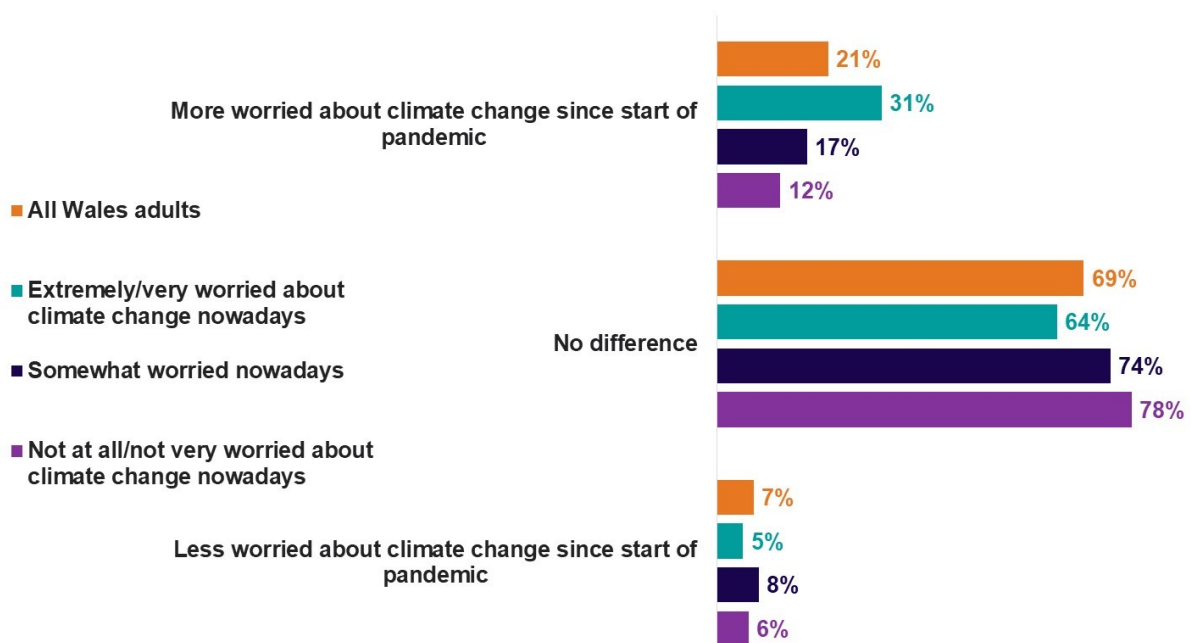
Fieldwork dates: 20th November – 24th December 2020

- 5.8 As in the rest of the UK, in Wales there were stronger links between numbers of positive NZ behaviour changes and worry about climate change than there were with more generic attitudes towards climate change. Three quarters (74%) of those in Wales who said they are worried about climate change had made any positive

behaviour changes: significantly higher than the 61% of those who said they were not worried.

5.9 Levels of worry about climate change also appear to have increased for some in Wales, reflecting patterns in the rest of the UK. Though two thirds (69%) of participants said their level of worry had not changed since before the first UK-wide lockdown, 21% said they had become more worried, including 6% who had become much more worried. Only 7% had become less worried. Levels of worry since the start of the pandemic increased most strongly amongst those who were extremely or very worried at the time they completed the survey (31% who were extremely/very worried had become more worried since the start of the pandemic), but levels changed less amongst those who are somewhat worried (their levels of worry stayed the same for 74% or went down for 8%) or not very/not at all worried (78% said their levels of worry hadn't changed, and they reduced for 6%) (Figure 21).

Figure 21 Degree of increased worry about climate change since the start of the pandemic against level of worry about climate change nowadays



Base: All Wales adults, Online participants only (1024), Extremely/very worried about climate change nowadays (379), somewhat worried nowadays (437), not at all/not very worried about climate change nowadays (174)

Fieldwork dates: 20th November – 24th December 2020

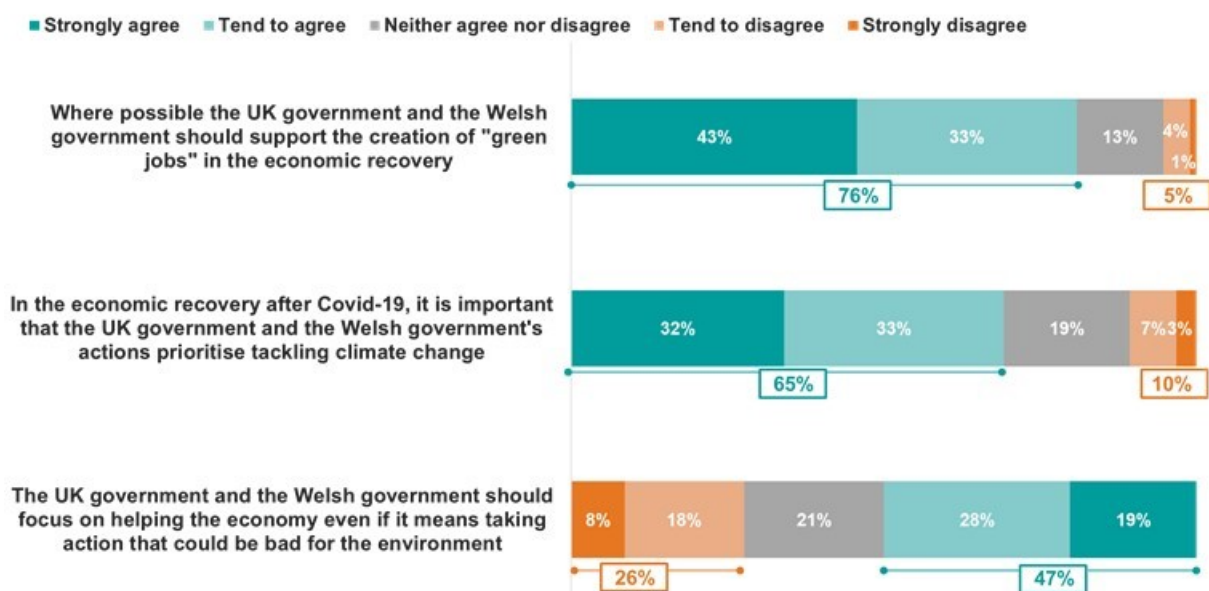
5.10 Women (23% v 18% men) and lower income households (28% in households on under £16,000 pa) were more likely than average to say they had become more worried about climate change since the start of the UK-wide lockdown.

Views on a green economic recovery

5.11 The high concerns reported among participants in Wales about climate change and its future impact on the UK were reflected in support for a green economic recovery post-pandemic. However, participants in Wales, as elsewhere in the UK, expressed lower levels of support for a green recovery when the prioritisation of environmental concerns was pitted against the economic recovery.

5.12 Three quarters of participants (76%) agreed that the UK Government and the Welsh Government should support the creation of green jobs in the economic recovery. Two thirds (65%) agreed climate change should be prioritised in the post-pandemic economic recovery. Fewer (47%) disagreed (and therefore took the more net zero positive view, shown in green on Figure 22). While this proportion was lower than for the other two statements asked, it is notable that the majority still take the NZ positive view, with only 26% expressing a NZ negative view by agreeing.

Figure 22 Level of agreement with three statements concerning climate policy



C4a-c. Thinking about whether or not the UK government and the Welsh government plans for economic recovery should be "green" in this way, to what extent do you agree/disagree with these statements.

Base= All Wales adults (1687).

Fieldwork dates: 20th November – 24th December 2020

- 5.13 Views were very consistent across different demographic and behavioural groups in Wales, though levels of support for prioritising the economic recovery over the environment were higher amongst men (29% v 22% women). Men were also more likely to agree that government should support the creation of ‘green jobs’ in the economic recovery (80% v 74% women).
- 5.14 Notably, employment status and household income appeared to influence support for the creation of ‘green jobs’, such as those in renewable energy or electric car manufacturing. Households where the Chief Income Earner was not in work at the time of the survey were less likely to say the Government should support this type of initiative (61% v 82% of households where the Chief Income Earner is in work). Households earning less than £16,000 pa were also less likely to agree with this statement (71% v 81% of households earning more than £16,000 pa).
- 5.15 Those who said they were worried about climate change were far more likely to support policies for a green recovery (see Figure 23). Their support for such policies was also far more consistent, remaining steady even when green policies were presented as in conflict with a strong economic recovery.

Figure 23 Agreement with statements about Green Economic Recovery

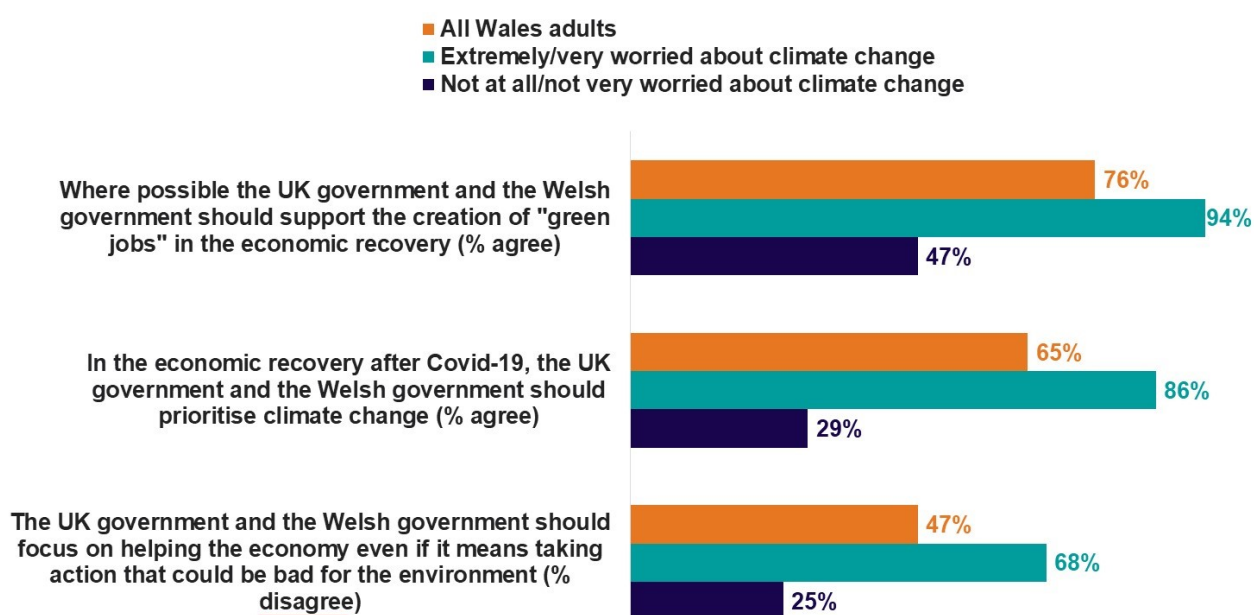


Chart shows proportion stating "Strongly/tend to agree" in "Agreement with statements about the Green Economic Recovery"
 Base = All Wales adults, online only (1024). Extremely/very worried about climate change nowadays (379), not at all/not very worried about climate change nowadays (174)

Fieldwork dates: 20th November – 24th December 2020

5.16 Those in Wales reporting positive NZ behaviour changes were also more likely to support a green economic recovery: in particular amongst those who reported six or more positive NZ behaviour changes (Figure 24).

Figure 24 Agreement with statements about green economic recovery against positive NZ behaviour changes made

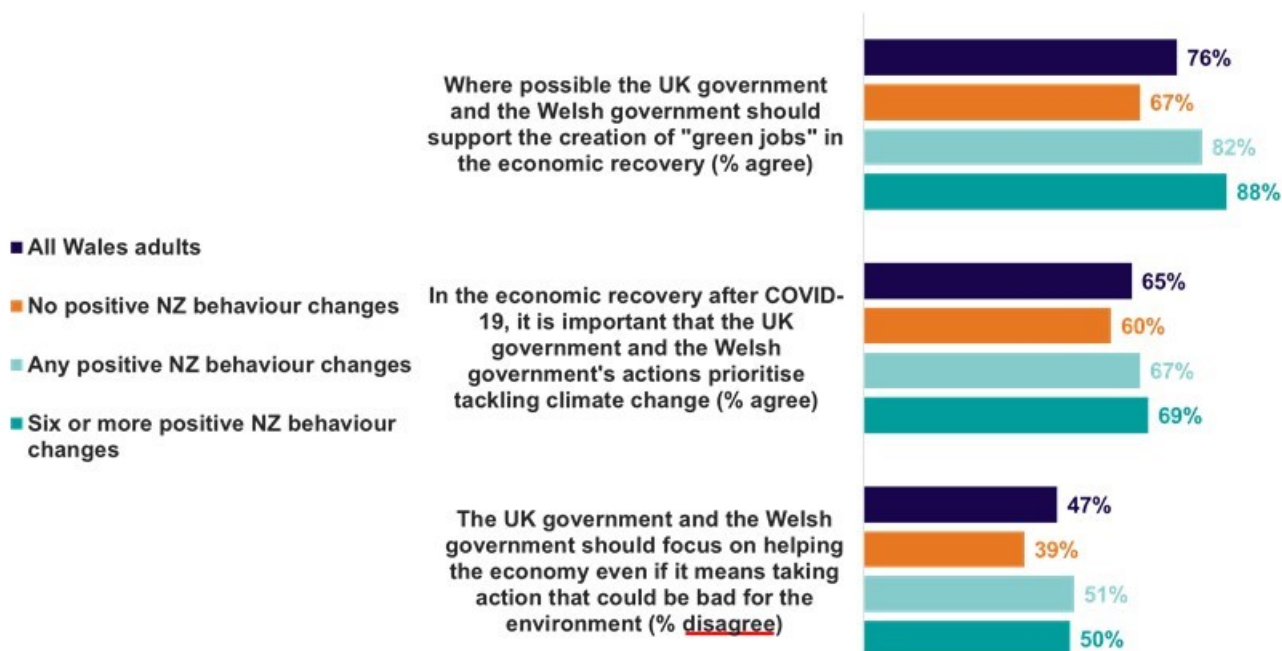


Chart shows proportion stating "Strongly/tend to agree" in "Agreement with statements about the Green Economic Recovery" against number of positive NZ behaviour changes.

Base = All Wales adults, (1687); No positive NZ behaviour changes (453); Any positive NZ behaviour changes (961); 6 or more positive NZ behaviour changes (164)

Fieldwork dates: 20th November – 24th December 2020

6. Conclusions – at this interim stage of the research

- 6.1 This research was commissioned to explore how the pandemic had impacted public attitudes, behaviours and experiences relating to some of Welsh Government's, BEIS' and Scottish Government's key environmental policy areas, including home energy use, fuel poverty and climate change. The research was further intended to investigate whether any such changes in behaviour could be anticipated to continue after the pandemic.
- 6.2 In commissioning research into the areas noted above, Welsh Government, BEIS and Scottish Government also wished to understand whether the pandemic had differentially impacted certain subgroups of the population, such as those defined by ethnicity, vulnerability, geographical location, and in particular, income level and indicators of fuel poverty.

What environment-related changes in behaviour have there been since the onset of the pandemic?

- 6.3 Increases in frequency of NZ behaviours since the first UK-wide lockdown were common. There was an increase in frequency across most of the NZ behaviours asked about. The highest net changes are seen for working from home rather than commuting to work⁵⁰, buying only what you really need, and avoiding food waste.
- 6.4 This said, across all NZ behaviours there were some participants undertaking them less frequently at the time of the survey (November/December 2020) than they were before the first UK-wide lockdown, or stopping altogether. In the case of planning holidays that don't require you to fly, one of the most potentially impactful behaviours, there was no population level change, with the similar proportions undertaking the behaviour more and less frequently (13% more frequently, 18% less frequently). There was also a strong shift away from using public transport and towards private car use, and this was not counterbalanced by a similar shift away from car use and towards active travel.

⁵⁰ Not all participants were in work, and therefore this positive NZ behaviour change was not applicable to all. It should also be noted that there is considerable scientific debate about whether working from home is a NZ behaviour.

Are behavioural changes net zero positive or net zero negative?

- 6.5 Overall, there was a marked increase or uptake across the fairly comprehensive list of potential NZ behaviours explored. However, there were some NZ behaviours which reduced in frequency since the start of the pandemic. While this research does not include impact modelling, findings suggest that at the level of individual behaviour, overall shifts were NZ positive – because there was a greater increase in reported NZ behaviours than the reduction in NZ behaviours.
- 6.6 One caveat to this is that public action to try to reduce energy and water usage (reported by 9% and 10% of participants respectively) should be seen in the light of increased baseline usage of domestic home energy in the context of the COVID-19 pandemic⁵¹. These shifts suggest that the increases in energy use resulting from the lockdown may have been higher had people not increased energy saving behaviours. In addition to this, these changes will be positive if maintained in the future: if households continue to take steps to reduce domestic energy use despite spending less time at home once lockdown measures are eased.
- 6.7 Domestically, behavioural changes will not bring net usage down, because of the changed context in which households are taking these actions.

Are any such changes likely to endure?

- 6.8 Based on participants' stated likelihood of maintaining behaviour identified in this research, there may be a positive NZ legacy from COVID-19 in Wales, as across the UK: participants generally said they want to maintain most behaviour changes and feel that they are likely to maintain them. This said, for some of the most impactful NZ behaviours, such as reduced use of air travel and eating a plant-based diet, desire and likelihood to maintain are both towards the lower end of the scale compared to other behaviours. For example, 43% wanted to continue planning no-fly holidays, and 51% wanted to continue to eat a plant-based diet, compared with 97% who wanted to continue saving energy at home.

⁵¹ [UK Government Energy Trends March 2021](#) shows that UK domestic consumption increased by 6% on a temperature corrected basis between calendar years 2019 and 2020

6.9 Where the research found a gap between participant desire to maintain changes, and their expected likelihood to maintain changes, likelihood usually exceeded desire, indicating that some of the changes may be seen as difficult or unenjoyable, though participants are still likely to maintain them. Where desire to maintain exceeds likelihood to maintain, additional practical or financial support may be needed to facilitate the desired maintenance, though this seldom occurs, and the gaps between desire and likelihood and are very small (less than 3 percentage points).

What has been the impact of financial difficulties associated with the pandemic?

6.10 The COVID-19 pandemic has had a clear impact on the financial well-being of some groups in the population: 36% said they were finding it more difficult to manage financially at the time they completed the survey compared with before the start of the UK-wide lockdown, and most (83%) of these said this had impacted their financial behaviours (e.g. reducing savings or using savings to cover living costs). Younger people, households with children, those on lower incomes and households likely to be fuel poor were particularly likely to say they were experiencing financial pressures.

6.11 At least two fifths of those in households likely to be fuel poor did not seem to be managing: they reported they could not afford to heat their home to a comfortable level or were rationing energy use because of financial concerns. They also reported higher levels of concern over bills and higher anxiety, which indicates that while their reported behaviour changes are NZ positive, they are not positive indicators or impactors of well-being.

6.12 Financial concerns played a strong role in changes to heating behaviours, particularly among households who are likely to be fuel poor⁵². Many reported they had heating-related issues in their homes, were spending more time at home, and were spending more on energy bills.

⁵² Note that participants in households likely to be fuel poor are not less likely to be concerned by the environment. 32% say they are very / extremely worried about climate change, which is broadly in line with the Wales average (35%). This worry is not, however a primary driver of changes to home heating behaviours for this group.

6.13 The importance of financial factors in NZ behaviour changes is emphasised both by participants' reported reasons for making changes, and the kind of support they said they may need to maintain changes, both of which tend to focus on financial pressures. Reduced income could affect targets for fuel poverty reduction, and more people may need financial support to keep their homes warm in future winters if incomes do not recover. In addition, the disproportionate negative impacts on households on lower incomes and those likely to be fuel poor is likely to worsen inequalities.

How do changes vary across demographic groups, with a specific focus on fuel poor households?

6.14 Changes are remarkably consistent across UK nations with no large or consistent differences observed. Participants in Wales report significantly more positive NZ behaviour change on washing at 30°C or below (7% v 5% on average across the UK), choosing energy efficient gadgets and appliances (8% v 6% on average across the UK) and monitoring energy use at home (8% v 6% on average across the UK).

6.15 Amongst households in Wales, those spending more time at home since the first UK-wide lockdown were more likely to have made one or more positive NZ behaviour changes. The profile of those making one or two positive NZ behaviour changes was similar to that of the general population. Looking at those who had made 3-5 net zero NZ changes, there were more differences. Participants aged 25-44, those in households where the chief income earner was working, and those in households experiencing impacts from COVID-19 on household income, employment or working practices were all more likely to fall in this group, as were households whose annual income is £16,000 or more.

6.16 Participants were more likely to have made 6+ positive NZ changes if they were younger (under 44); living with children in the household; under financial pressure, but not retired; or had heating-related problems in their home.

6.17 The 37% of participants who had made no positive NZ behaviour changes tended to be older or retired; to not have children in the household; to be social renters; or to

not report heating-related problems in their home. Those who were financially better off also seem to be less likely to have made positive NZ changes.

- 6.18 Participants in households likely to be fuel poor were significantly more likely to report making positive NZ changes relating to careful heating use, washing clothes at 30°C or lower, and trying to save energy at home. These changes were unlikely to be made for primarily environmental reasons.

What support does the public need to maintain changes over the longer term?

- 6.19 Action to support consistency of positive NZ behaviour change could be useful, given the variation across behaviours. While the lockdown muted some positive NZ behaviours (e.g. public transport usage), it encouraged a wide range of others.
- 6.20 Likelihood to maintain being higher than desire to maintain suggests changes may be extrinsically, rather than intrinsically motivated. Financial factors and well-being were more important drivers of positive NZ behaviour change than concern for the environment, even for those who had made 6+ positive NZ changes.
- 6.21 When asked directly what government ‘could do to help you keep doing these things more, either during lockdown or once restrictions are permanently removed?’ the public strongly favoured ‘carrots’ over ‘sticks’. Provision of financial help, subsidies or incentives were by far the most commonly requested support mechanisms, by over a third of those responding. Improvements to infrastructure and services were also commonly suggested.

What are the potential impacts on short, medium- and longer-term policy?

- 6.22 There are also several important implications for how Welsh Government communicates with the public about making or maintaining positive NZ behaviour changes:
- Saving money and improving physical and mental well-being were at the time of the research more important motivators of positive NZ behaviour change than motivation to protect the environment or avert climate change.
 - Personal worry about climate change was more strongly linked to positive NZ behaviour change than more rational or calculated consideration of the issues,

for example, expectation that there will be negative impacts from climate change during the individual's lifetime.

- Poor understanding of the environmental impact of positive NZ changes may be limiting the extent to which environment is considered or post-rationalised as a driver of change. For example, residents in Wales who were 'very' or 'extremely worried' about climate change were more likely to report negative NZ behaviour change relating to flying. This suggests that public knowledge of the carbon impacts of flying, or public willingness to connect values and actions for this behaviour, remains low.

6.23 With respect to wider policy implications, the lower likelihood of maintaining behaviours which have some of the highest potential NZ positive impact indicates support measures may be needed if these changes are to be maintained.

Next steps

6.24 This report details the findings from Wave 1 of a multi-wave study. Analysis and reporting on Wave 2 and the associated qualitative research are ongoing.

The Wave 2 reporting will make comparisons with Wave 1 and look further at changes over time. Reflections from the qualitative research will be synergised with quantitative findings to give a richer and more detailed picture of the impacts of COVID-19 on the public in Wales.

7. Annex

Technical details of the Push-to-web survey approach

Sampling

- 7.1 The survey sample was designed to provide robust and representative samples of adults in Wales and other constituent nations in the United Kingdom. The sample structure was structured around the following:
- A 'core' sample, representative of adults in the United Kingdom.
 - A 'vulnerable' boost sample, which was representative of adults living in the 20% most deprived areas in the UK, as defined by the Indices of Multiple Deprivation (IMD)⁵³. This boost aimed to increase the number of participants from vulnerable categories across the UK to ensure a large enough sample size to enable comparisons between potentially vulnerable and non-vulnerable sectors of the population.
 - Further boost samples in Wales and Scotland: to ensure that a large enough sample size would be gathered from these countries to enable reliable conclusions to be drawn and to enable comparisons between the home nations. The Wales and Scotland boosts were structured by Government region to enable analysis by region within each country.
- 7.2 Addresses were drawn at random from the Royal Mail's Postcode Address File (PAF), a database of all known addresses in the UK. Stratification was undertaken to provide a broadly representative sample, and to ensure adequate representation of subgroups of particular interest. Addresses were selected following stratification by the criteria listed below:
- Geographical region (as relevant to each sample)
 - Local authority
 - Population density (urban / rural / mixed)

⁵³ [UK Government \(2019\) English Indices of Deprivation](#). [Scottish Government \(2020\) Scottish Index of Multiple Deprivation](#) ; [Welsh Government \(2019\) Welsh Index of Multiple Deprivation](#)

- Indices of Multiple Deprivation (IMD) quintile

7.3 The number of addresses within each category was calculated taking into account:

- potential ‘deadwood’ (i.e. the proportion of properties which are unoccupied or are not residential premises): estimated from other push to web studies to be between 8-10% of addresses on PAF⁵⁴
- anticipated response rates: based on other large scale survey research, response rates were anticipated to be lower in Northern Ireland compared with other countries in the UK, and this was taken into account when drawing the sample

7.4 Across the UK, a total of 15,822 addresses was selected for participation in the survey, as shown in Figure 25 broken down by sample group and country. In Wales, a total of 4,843 addresses was selected.

Figure 25 Number of addresses selected for participation in the survey

	UK 'Core' sample	UK vulnerable boost	Wales/Scotland boost samples	Total
Wales	320	79	4444	4843
England	5596	1381		6977
Scotland	560	159	2996	3715
Northern Ireland	239	48		287
Total	6715	1667	7440	15822

Fieldwork

7.5 All selected households received a letter inviting them to complete the Daily Life Survey online, and up to two adults in each household could take part. Further reminder mailings were sent, with mailing three including up to two postal (paper) questionnaires for participants who preferred to complete on paper or who were unable to complete online. All participants in Wales were provided the option of completing both the online and paper questionnaire in either Welsh or English. In addition, participants were invited to call or email the Ipsos MORI survey helpline if

⁵⁴ For example [Active Lives Survey Year 1 technical report](#) and [Community Life Online and Paper Survey Technical Report 2018-2019](#)

they preferred to complete the questionnaire by telephone, though no requests for telephone completion were received. Mailings were as shown below and all mailing letters are included in this annex:

- Mailing 1: Initial invitation letter inviting up to two individuals per household to complete the Daily Life survey online
- Mailing 2: Reminder letter for online completion
- Mailing 3: Second reminder, which included two versions of a postal questionnaire in English and additional two versions in Welsh for households in Wales
- Mailing 4: Final reminder letter

7.6 Each mailing (after Mailing 1) was sent only when:

- no response had been received and processed from that household, or
- where a response had been received, but there was a known second householder who was also eligible to take part but had not yet done so. In order to gain this information, a question was included in the questionnaire asking about the numbers of residents in the household in different age groups. Where a participant had indicated that no other adults resided in the home, their address would be removed from the mailing list for the following mailing. Additionally, all addresses from which two questionnaires had been returned since the previous mailing were removed from further mailings

7.7 The fieldwork period lasted six weeks. Fieldwork in Wales was slightly later than that in the rest of the UK because additional time was needed to complete Welsh language translations of all fieldwork materials. Fieldwork in England, Scotland and Northern Ireland was conducted started on 12th November 2020, and in Wales on 20th November 2020. Fieldwork in all countries closed on 24th December 2020.

7.8 It is important to note that, due to the ongoing pandemic, varying restrictions were in place throughout the fieldwork period and in the different home nations and within specific regions, which may have impacted experiences and profile of people who responded to the survey (see Figure 1). In Wales, a partial lockdown was in place

during fieldwork. Hospitality venues such as restaurants, pubs and cafes were open but operating under restrictions. Schools in Wales were open at the start of the fieldwork period (save a small number in Cardigan and North Pembrokeshire that were closed due to localised Covid outbreaks), but secondary schools were closed across Wales on 14th December.

Questionnaire

- 7.9 The project began with a stakeholder workshop including attendees from Ipsos MORI, Welsh Government, BEIS, Scottish Government, BRE, CAST and other stakeholder organisations to discuss and prioritise the content and scope of the quantitative fieldwork. This was followed by a period of questionnaire development, led by Ipsos MORI in consultation with Welsh Government, BEIS and Scottish Government, and with inputs from BRE and CAST. The questionnaire design centred on the research questions, taking into account discussions during the stakeholder workshop.
- 7.10 A series of 12 cognitive testing interviews were held with members of the public (in English or Welsh, depending on participant preference). Participants were recruited to quotas using free-find methods by Criteria, an Ipsos approved supplier. Cognitive testing ensured the questionnaire effectively measured the target behaviours and attitudes of interest, that questions were easy to understand, flowed logically and were unbiased. Following the interviews, minor changes were made to the questionnaire before fieldwork commenced.
- 7.11 Because the survey could be completed online or on paper, some small changes needed to be made to reflect the mode of completion. Some questions were not included in the postal questionnaire because of space limitations, and others were not included because of the need to include data from previous questions or to personalise questions. In a small number of cases, questions were re-worded or re-structured in the postal questionnaire to provide similar data/outcomes, but in a manner which was more appropriate to a postal survey.
- 7.12 All fieldwork documents were provided to participants in Wales in both Welsh and English. The two full questionnaires are shown below, and a description of the differences between them shown in the technical report.

7.13 The Wave 1 questionnaire consisted of a series of behavioural, attitudinal and demographic questions.

- The demographic section of the questionnaire included a standard set of questions aligned with those used by ONS to gain information regarding such variables as age, gender, ethnicity, working status, and income
- The behavioural questions asked participants about behaviours ‘nowadays’ and before the first UK-wide lockdown on 23rd March 2020. Desire, likelihood, and support needed to maintain behaviours were also covered
- Attitudinal questions explored views on climate change and government environmental policy, including questions regarding the UK’s post-pandemic economic recovery
- Further questions were asked to gauge the pandemic’s impact on personal finances and to measure participants’ knowledge and uptake of the schemes in each of the home nations designed to encourage households to make their properties more energy efficient (Green Homes Grant scheme in England; Nest scheme in Wales, Warmer Homes Scotland scheme in Scotland; and Northern Ireland Sustainable Energy Programme in Northern Ireland)

Response

7.14 Following scanning of postal questionnaires, data was cleaned and checked to enable detailed analysis. The process of data cleaning removed the following:

- Individuals who answered the survey more than once (e.g. responding online and by post – because of the broader coverage of the online survey, online responses were prioritised)
- Blank or poorly completed questionnaires, as detailed below

Figure 26 Response breakdown

	Online questionnaire	Postal questionnaire
No household information	Routing in the online questionnaire meant participants had to give the age of at least one adult at A3	Participants who left blank or wrote 0 in all boxes at Q1
Poorly completed questionnaires (sensitive demographic questions were not included)	Answered don't know/prefer not to say to at least half of questions asked from A4-G20	Answered don't know/prefer not to say to at least 35 of the questions from Q2-Q32
Number of removals (UK-wide)	206	354

- 7.15 Following data cleaning and checks, the total number of valid responses received at Wave 1 from Wales was 1,687, with 1,242 households returning at least one questionnaire (26% of those invited to participate in the survey). At a UK level, the total number of valid responses included in this report is 4,898, with 3,602 households (23% of those invited to participate in the survey) returning at least one questionnaire.
- 7.16 In Wales, the average number of questionnaires received from each household was 1.36, which was very close to Ipsos MORI's initial estimate of 1.4 questionnaires per household. The average number of questionnaires returned per household was consistent across most of the home nations, with the exception of Northern Ireland where the average was lower at 1.26.

Figure 27 Response breakdown

Country	Number of addresses issued	Number of households responding*	% of households invited responding*	Average number of questionnaires returned per household
Wales	4843	1242	26%	1.36
England	6977	1469	21%	1.36
Northern Ireland	287	35	12%	1.26
Scotland	3715	856	23%	1.36
Total	15822	3602	23%	1.36

* i.e. returning at least one completed questionnaire

7.17 Seven in ten (69%) responses were received online and 31% by post. However, this proportion varied by country, with online responses least common in Wales (61%), and most common in Scotland (75%) and England (73%)⁵⁵.

Figure 28 Response breakdown by mode of response

Country	Online responses		Postal responses		Totals		% of individual responses online
	Individual	Household	Individual	Household	Individual	Household	
Wales	1024	759	663	483	1687	1242	61%
England	1457	1072	543	397	2000	1469	73%
Northern Ireland	26	20	18	15	44	35	59%
Scotland	874	655	293	201	1167	856	75%
Total	3381	2506	1517	1096	4898	3602	69%

Weighting

7.18 Following completion of fieldwork, the data was weighted to provide a representative sample of the adult population in Wales and the other constituent nations of the UK. The weighting process is summarised below:

- A pre-weight was applied to account for uneven selection probabilities in the household (because an adult living in a single adult household would have a

⁵⁵ The small sample size in Northern Ireland means that any analysis within this country should be treated with caution.

greater chance to participate in the survey than an adult living in a multi-adult household)

- Within each country of the UK (with the exception of Northern Ireland where the number of interviews completed was small) demographic weights were applied to bring the sample within that country to a representative profile by age, gender, region/Government region and IMD quintile
- For the benefit of the UK-wide sample, an all-UK weight was then applied to combine the individual country samples in their appropriate proportions

7.19 Different weights were applied for questions which were only asked of online participants, and those which were asked of all participants (i.e. those completing online or by post).

7.20 The largest weighting impact was associated with the incorporation of the large Scottish and Welsh boost samples in to the all UK sample: this was anticipated as part of the research design. Effective sample sizes were calculated separately for Wales and Scotland, and for the all-UK sample (Figure 29).

Figure 29 Range of weights and effective sample size

	Total weight (online and offline questions)			Effective sample size	Online weight (online only questions)			Effective sample size
	Max weight	Min weight	Average weight		Max weight	Min weight	Average weight	
All UK sample								
All UK	16.28	0.02	1.00	43.7%	10.73	0.02	1.00	46.30%
Country specific weighting								
Wales	7.82	0.14	1.00	64.0%	6.58	0.13	1.00	70.0%
Scotland	7.21	0.33	1.00	75.9%	5.97	0.40	1.00	80.7%

7.21 While the maximum weight was very high (16.28 total weight in all UK sample), there were only four weights of over 10 and 43 weights which were over 5. In Wales, the largest downweights (lowest weights) were associated with people in multi-adult households. Because mid-Wales was over-sampled as part of the Welsh sample design to enable separate analysis, most of the large downweights were amongst participants in mid-Wales.

7.22 In the all UK sample, large weights were applied for young people (under 45s) in large multi-adult households in England – larger weights also appeared to be more prevalent in London and South East England, which were under-represented in the final sample.

7.23 Weighted and unweighted sample profiles are shown below (Figure 30).

Figure 30 Weighted and unweighted sample profiles

	Unweighted						Weighted					
	All UK		Wales		Scotland		All UK		Wales		Scotland	
	n	%	n	%	n	%	n	%	n	%	n	%
Total sample	4898		1687		1167		4898		1687		1167	
Age												
16-24	183	4%	48	3%	47	4%	309	6%	72	4%	90	8%
25-44	1123	23%	352	21%	242	21%	1819	37%	624	37%	416	36%
45-64	1714	35%	548	32%	481	41%	1550	32%	525	31%	380	33%
65+	1791	37%	699	41%	384	33%	1140	23%	428	25%	266	23%
Gender												
Male	2242	46%	751	45%	546	47%	2353	48%	802	48%	555	48%
Female	2560	52%	888	53%	607	52%	2462	50%	837	50%	598	51%
IMD quintile												
1 least deprived	857	17%	192	11%	174	15%	924	19%	316	19%	221	19%
2	1046	21%	393	23%	266	23%	1006	21%	330	20%	227	19%
3	719	15%	277	16%	184	16%	992	20%	352	21%	234	20%
4	1152	24%	453	27%	289	25%	990	20%	349	21%	243	21%
5 most deprived	1124	23%	254	22%	372	22%	988	20%	340	20%	243	21%
UK Region (all UK tables)												
North East	126	3%					199	4%				
North West	296	6%					537	11%				
Yorkshire/ Humber	203	4%					403	8%				
East Midlands	185	4%					356	7%				
West Midlands	210	4%					432	9%				
East Of England	231	5%					455	9%				
London	189	4%					644	13%				
South East	321	7%					671	14%				
South West	239	5%					419	9%				
Scotland	1167	24%					411	8%				
Wales	1687	34%					234	5%				
N. Ireland	44	1%					136	3%				
Northern Ireland	44	1%					136	3%				

	Unweighted						Weighted					
	All UK		Wales		Scotland		All UK		Wales		Scotland	
	n	%	n	%	n	%	n	%	n	%	n	%
Total sample	4898		1687		1167		4898		1687		1167	
Welsh Government Region (Weighted to Wales profile, Wales data only)												
North					397	24%					375	22%
Mid					447	26%					113	7%
South West					401	24%					380	23%
South East					442	26%					819	49%

Fieldwork documents

7.24 Fieldwork documents are linked below

Questionnaires	Invitation letters
Online questionnaire	Mailing 1
Postal questionnaire	Mailing 2
	Mailing 3
	Mailing 4

Understanding households likely to be fuel poor

7.25 The research had a specific focus on understanding the impacts of the pandemic on fuel poor households. Participants were classed as living in households ‘likely to be fuel poor’ according to the Low-Income Low Energy Efficiency (LILEE) definition of fuel poverty⁵⁶.

7.26 The report refers to the category as ‘households likely to be fuel poor’ because a proxy fuel poverty calculation method was used to categorise households. A full fuel poverty assessment could not be completed as part of this study as a significant amount of information about both the household (e.g. detailed income, housing costs) and dwelling (e.g. size, structure, insulation) would be required in order to carry out the full fuel poverty calculation used for calculating UK Government fuel poverty statistics. The ‘likely to be fuel poor’ indicator should therefore be treated as indicative and used for classification and analysis, rather than providing robust indications of prevalence or profile.

⁵⁶ UK Government (2021) [Sustainable warmth: protecting vulnerable households in England](#)

7.27 For the purposes of this study, to be classified as likely to be fuel poor, the household would:

- report a low equivalised income after housing costs in the survey (QH6 in the online questionnaire and Q36 in paper questionnaire); and
- live in a property that is classified as having a household Energy Performance Certificate (EPC) in categories D-G. EPC data was matched to the survey sample from the EPC Register,⁵⁷ with the matching process completed by Energy Saving Trust⁵⁸

Equivalised income after housing costs

7.28 All households were asked whether their household income after housing costs was above or below a threshold which was based on the number of children (aged 13 or younger) and adults (aged 14+) in the household. The threshold was calculated as follows:

income threshold = 13,927 x (0.58 + (0.42 x (number of adults in household-1)) + (0.2 x number of children in household))

7.29 The calculation was based on 2018 household incomes, but it was felt that this was acceptable because any inflationary income increases would be likely offset by the impact of the COVID pandemic.

7.30 For participants completing the online survey, a calculation was completed as part of the interview script which assessed the household structure and fed the appropriate income threshold in to the question answered. The question therefore was as follows:

H8 [If household owns property with mortgage/Once your household has paid your mortgage] [If household part rents/part owns property (shared ownership)/Once your household has paid your mortgage and the rental on your property] [If household rents property (private or social rent)/Once your household has paid your rent] [All others/Once your household has paid any housing costs], would you say the money you have left each month is more than <threshold >, or less than this?

1. We have more than <threshold> left each month after we have paid our <mortgage/rent>
2. We have less than <threshold> left each month after we have paid our <mortgage/rent>

⁵⁷ [UK Government 'Find an Energy Certificate'](#)

⁵⁸ [Energy Saving Trust](#)

98. *Don't know*

99. *Prefer not to say*

7.31 Because of the need to include information on the number of people in the household in the calculation above, it was not possible to include the question as shown above in the postal questionnaire. Instead, the question showed two common bands which equated to the most common household structures (one adult no children, two adults one child: rounded to a reasonable number to include in the questionnaire), and participants were asked to indicate whether their monthly income after housing costs was above or below these thresholds.

Figure 31 Layout of income question in postal questionnaire

Q38. Once your household has paid your mortgage, rental or housing costs, how much money does your household have left each month?
PLEASE PUT AN X IN ONE BOX

- | | |
|---|--|
| <input type="checkbox"/> Up to £500 left after we have paid housing costs | <input type="checkbox"/> Don't know |
| <input type="checkbox"/> £501-£1,399 left after we have paid housing costs | <input type="checkbox"/> Prefer not to say |
| <input type="checkbox"/> £1,400 or more left after we have paid housing costs | |

7.32 For postal survey participants, low equivalised income after housing costs was assessed as follows:

- Low = (Q38=1 or Q38=2 and (household does not include 1 adult and 0-3 children, or 2 adults and 0-1 children))
- Not low = Q38=3 or (Q38=2 and household includes 1 adult and 0-3 children, or 2 adults and 0-1 children)
- Unable to assess = Q38 = 4 or 5 or blank, or unable to assess number of adults and children in household

EPC rating

7.33 EPCs were appended to the survey samples by Energy Savings Trust (EST). Because around 50% of domestic properties in the UK do not have an EPC listed on the EPC database, and because there are significant skews in the types of properties which do/do not have a listed EPC, EST additionally appended a modelled EPC for each address, taken from their Home Analytics database⁵⁹. The

⁵⁹ [Energy Saving Trust Home Analytics database](#)

numbers of addresses (UK-wide) including a listed or modelled EPC are shown in the table below.

Figure 32 EPC data

	Households in survey sample
Actual EPC from EPC register	8282 (52%)
Modelled EPC from Home Analytics Database	5315 (34%)
No EPC	2225 (14%)

7.34 It should be noted that the proportions with no EPC were not evenly distributed by country, with participants in Scotland and Northern Ireland less likely to have an EPC rating (the distribution ranged from 2% in England and Wales to 39% in Scotland and 70% in Northern Ireland).

7.35 Further, it should be noted that some homes will have been improved since the most recent EPC, and it is known that the EPC Register is biased in favour of high efficiency homes which are more likely to have been sold or rented since 2008.

Extent of missing data

7.36 Full data was not available for all measures included in the LILEE calculation, which means that we were unable to assess whether all households were likely to be fuel poor. Households were therefore classified in three groups:

- Likely to be fuel poor (reporting low equivalised income after housing costs AND EPC in categories D-G)
- Not likely to be fuel poor (either reporting income after housing costs which was above the 'low' threshold OR EPC in categories A-C)
- Unable to assess (incomplete or missing data for either of the above)

7.37 The extent of missing data is summarised below:

Figure 33 Extent of missing data for fuel poverty calculation amongst UK survey participants

	Unwtd	Wtd
Equivalised income after housing costs	30%	27%
EPC	13%	8%
Either missing – unable to assess whether household is likely to be fuel poor	39%	32%

7.38 The extent to which likely fuel poverty could not be assessed varied significantly by country: but this reflected the differences in EPC ratings per country. Missing data on equivalised income after housing costs was more evenly distributed across countries: 28% in England, 26% in Scotland, 34% in Wales and 36% in Northern Ireland.

7.39 In reading findings based on households likely to be fuel poor, the extent and nature of this missing data should be borne in mind.

Figure 34 Estimates of proportion of households likely to be fuel poor by country (weighted)

	Likely to be fuel poor	Not likely to be fuel poor	Unable to assess
England	23%	48%	28%
Scotland	12%	35%	53%
Wales	22%	44%	33%

Northern Ireland data not shown because of small base sizes (n=44)