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Understanding and engaging the public on climate change

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Executive summary

This report was commissioned by ClimateXChange for the Scottish Government as part of developing a new Public Engagement Strategy for climate change. At the core of this work is the need to understand public attitudes to climate change and review different models of public engagement to examine what works in achieving the transformation needed.

The evidence review had two key aims:

- To collate and assess survey evidence on public attitudes towards climate change in Scotland and the wider UK.
- To review different approaches to engaging the public on climate change.

It is worth noting that the review was intended as a snapshot of 'where are we now', however, in light of the global pandemic it is better characterised as a baseline of 'where were we before the onset of COVID-19'.

The vast majority of studies included in the review took place prior to the COVID-19 pandemic[1]. Two of the surveys[2] and six of the public engagement examples[3] included in this review were carried out during the COVID-19 pandemic. As these were conducted during a time of crisis and transition, it is too soon to say whether these findings accurately reflect the attitudes and behaviours of the public in a post-COVID-19 world. This review also does not have enough data to make comparisons on public attitudes to climate change before and after COVID-19. However, while we deal with the Covid-19 crisis, climate change remains a serious issue for the public: 63% of Scots say that in the long term, climate change is as serious a crisis as Covid-19 is[4].

[1] The 16th March has been used as a cut-off date to determine which studies we consider taking place at a time that COVID-19 was likely to have materially changed the views of the public.
[2] The BEIS Public Attitudes Tracker (March 2020) and the Scottish Government survey on Public Attitudes to Coronavirus (May 2020).
[3] Climate Assembly UK, Scotland' Citizens' Assembly, Convention Citoyenne pour le Climate, DEFRA's public engagement on the environment, Leeds Climate Juries, Brighton & Hove Climate Assembly
[4] Scottish Government, 2020. https://www.gov.scot/publications/public-attitudes-coronavirus-summary/pages/10/

Findings on public attitudes to climate change

- Most people in Scotland believe that climate change is happening, and agree that climate change is an immediate and urgent issue. Levels of concern about climate change have increased in recent years.
- A majority of Scots believe human activity has been a factor in the causes of climate change. Scots are more likely to say this is the case than people in England and Wales.
- People tend not to see themselves as personally at risk of climate change impacts, such as flooding or heat stress, although they may on a broader scale expect climate change to affect their life.
- Most people in Great Britain agree that we are already feeling the effects of climate change and people tend to associate these impacts with the weather. There is a lack of data, however, on weather-related impacts specific to Scotland and the extent to which these differ from other parts of the UK.
- The Scottish public clearly believe that governments should be showing leadership for tackling climate change, and that they should be taking the kinds of actions that would result in systemic change.
- The Scottish public generally feel that more could be done to tackle climate change and support climate targets and agreements. Many have concerns about whether targets will be reached, however, and some believe targets should be more ambitious.

Findings on engaging the public on climate change

Public engagement on climate change can take many different forms, and there is no single “best” approach. Each of the main methods identified in this review offer strengths and limitations, and reflect the range of different purposes it is designed to serve.

Key considerations for deciding the most appropriate approach to engaging the public on climate change:

- Climate change is a complex topic, which lends itself to deliberative forms of engagement such as citizens’ assemblies, citizens’ juries and deliberative workshops.
- Topic and task need to be framed in a clear and unambiguous way.
- The method used to recruit participants should reflect the overall aims of the engagement exercise.
- Public engagement should be facilitated by impartial facilitation experts.
- It takes time to identify, brief and review presentations from experts, who are a key aspect of the deliberative process.
- A clear link back to government or the relevant decision-making body offers the greatest chance of public engagement on climate change having real impact on policy decision making.

Implications for developing public engagement

The findings in this review lend weight to the Scottish Government’s focus on public behaviours and public engagement as part of its work to tackle the climate emergency. However, levels of concern about and personal action on climate change issues vary across different demographic groups.

In the design and facilitation of public engagement it is therefore worth considering carefully the different ‘starting points’ that different groups may have in terms of understanding and engagement on climate change. For effective engagement, it is important to make climate change easy to understand and relatable to the public.

To help ensure a range of voices are heard, consideration should be given to how best to use technology and other innovative approaches. Flexible opportunities for engagement, such as shorter sessions over different days and times, should also be considered.

The review highlights some evidence gaps where we do not know much about Scots' views on climate change. These areas could benefit from further exploration:

- There is little Scotland-specific data on behaviour change and public willingness to change their behaviours. Levels of reported behaviour can be higher when they are not linked explicitly to climate change, as people also undertake climate-friendly behaviours for other reasons.
- There is a lack of tracking surveys that would enable measurement of how Scots' behaviours are changing over time, although the Scottish Household Survey has provided important data on how attitudes to climate change have shifted over time.
- There is little Scotland-specific research that explicitly tests policy options relating to climate change with the public. This is particularly the case in areas such as travel, diet, recycling or the circular economy.

Contents

1 Introduction and methods

1.1 Introduction

> "There is a global climate emergency. The evidence is irrefutable. The science is clear."
> ***Climate Change Secretary's statement to Scottish Parliament, 14 May 2019***

The Scottish Government has been at the forefront of responding to the global challenge posed by climate change. Building on the 2009 Climate Change (Scotland) Act[5], which passed the most ambitious climate change legislation anywhere in the world, the 2019 Act updated the targets, setting a target date of 2045 for reaching net zero emissions and making provision for advice, plans and reports around the targets.

The Scottish Government's Programme for Government 2019-2020 recognises that delivering on these ambitions is dependent on the support and involvement of the Scottish public. It details a raft of actions to meet the net zero ambition, such as supporting clean energy production, investing in public transport, supporting sustainable farming practices and reducing the carbon footprint of the food we eat, reducing Fuel Poverty and improving domestic energy efficiency, encouraging the uptake of electric vehicles and Active Travel, and establishing a National Forum on Climate Change.

The Scottish Government is currently developing a new Public Engagement Strategy for climate change. At the core of this work is the need to understand public attitudes to climate change and review different models of public engagement to examine what works in achieving the transformation needed.

It is in this context that ClimateXChange, on behalf of the Scottish Government, commissioned an evidence review to fulfil two key aims:

- To collate and assess survey evidence on public attitudes towards climate change in Scotland and the wider UK.
- To review different approaches to engaging the public on climate change.

This report outlines the findings of this review.

1.1.1 The COVID-19 context

This evidence review was conducted at a time of unprecedented crisis for Scotland and the rest of the UK due to the onset of COVID-19. The World Health Organization (WHO) determined that the COVID-19 outbreak was a global pandemic on 11 March 2020 and, on 23 March 2020, the UK went into lockdown.

COVID-19 and the resulting lockdown, have brought incalculable turmoil to the lives of the public – including the loss of loved ones, and severe financial hardship for many. Given the magnitude of these changes, it is yet unclear what lasting impact the pandemic will have on the public and their attitudes and behaviours. This uncertainty extends to climate change and sustainability as much as any other policy issue.

This means that, while this review was originally intended as a snapshot of 'where are we now', it is better characterised in light of the global pandemic as a baseline of 'where we were before the onset of COVID-19'.

[5] Understanding Risk research group, 2020. http://orca.cf.ac.uk/129452/1/resilrisk-FINAL-ONLINE.pdf

The vast majority of studies included in the review took place prior to the COVID-19 pandemic[6]. Two of the surveys[7] and six of the public engagement examples[8] included in this review were carried out during the COVID-19 pandemic. As these were conducted during a time of crisis and transition, it is too soon to say whether these findings accurately reflect the attitudes and behaviours of the public in a post-COVID-19 world. There is not yet enough data to make comparisons on public attitudes to climate change before and after COVID-19.

1.2 Methodology

ClimateXChange, on behalf of the Scottish Government, commissioned Ipsos MORI to conduct a review and synthesis of recent evidence on public attitudes on climate change and approaches used to engage the public on climate change.

The work was split into two main strands, the first exploring public attitudes to climate change and the second exploring public engagement strategies. For both strands, the main methodology was a desk-based evidence review. However, strand two was supplemented by expert stakeholder interviews to provide a deeper understanding of the public engagement process and outcomes.

A systematic approach was taken to the evidence review. In each strand, a set of search terms was agreed and the searches carried out within an established set of parameters (Table 1).

Table 1 Search parameters

	Strand 1: Review of surveys of public attitudes	Strand 2: Review of approaches to public engagement
Date	Since September 2018 (although trend data to be included where appropriate)	Within past 5 years
Methodology	Surveys only	Range of methods to be included, both qualitative and quantitative and include both offline and digital engagement approaches
Coverage	Scotland and the UK (international comparisons to be included where appropriate)	International
Commissioners	Public sector, third sector, and private sector.	

After compiling an initial list, we reviewed each study in terms of research quality to exclude any where there were concerns about the quality of the data collected; for example, studies where our evaluation was that leading questions were asked.

A final set of studies were agreed in discussion with ClimateXChange and the Scottish Government, and the data was then analysed and collated.

For full details of the methodology please see Appendix A.

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[6] The 16th March has been used as the cut-off date to determine which studies we consider took place at a time that COVID-19 was likely to have materially changed the views of the public.
[7] The BEIS Public Attitudes Tracker (March 2020) and the Scottish Government survey on Public Attitudes to Coronavirus (May 2020).
[8] Climate Assembly UK, Scotland' Citizens' Assembly, Convention Citoyenne pour le Climate, DEFRA's public engagement on the environment, Leeds Climate Juries, Brighton & Hove Climate Assembly

1.2.1 Limitations of the research

As with any study, there were a number of limitations to the research:

- It is important to note that the majority of behaviour (or willingness to change behaviour) recorded in the public attitudes strand reviewed is self-reported. In survey research, participants can present themselves in a more positive light in order to provide the 'right' answer as prescribed by society. If such a 'social desirability effect' is at play in this instance, then it is possible that the willingness to change individual behaviour to tackle climate change may be lower than actually recorded.
- There was limited Scotland specific data available for strand one. This means that the focus of the review is generally at the broader UK or Great Britain level[9]. However, where Scotland specific data is available this has been highlighted.
- The vast majority of surveys included in strand one were conducted using an online methodology. This means that the data may be more likely to exclude those in lower socio-economic groups and those in the older age groups.
- In strand two there was limited evaluative data available on the studies included. However, this was mitigated to some degree by the inclusion of the stakeholder interviews.

[9] Throughout chapter 2, where we discuss UK-wide data we specifically refer to "UK"; where we discuss data that is Great Britain only (i.e. not covering Northern Ireland) we refer to "Great Britain/GB" or refer to respondents as "Britons/British"

2 Public attitudes to climate change

This chapter of the report explores the findings from strand one of the research – what do the public think about climate change and what are they willing to change about their behaviour in order to lessen its impact.

We first explore beliefs and attitudes surrounding climate change – levels of awareness, levels of concern about climate change in general, and views on the impacts of climate change, predominantly weather impacts. We then address the change needed to combat climate change – both in terms of what the public are willing to do personally, and what they think about government policy change.

2.1 Awareness of climate change and its causes

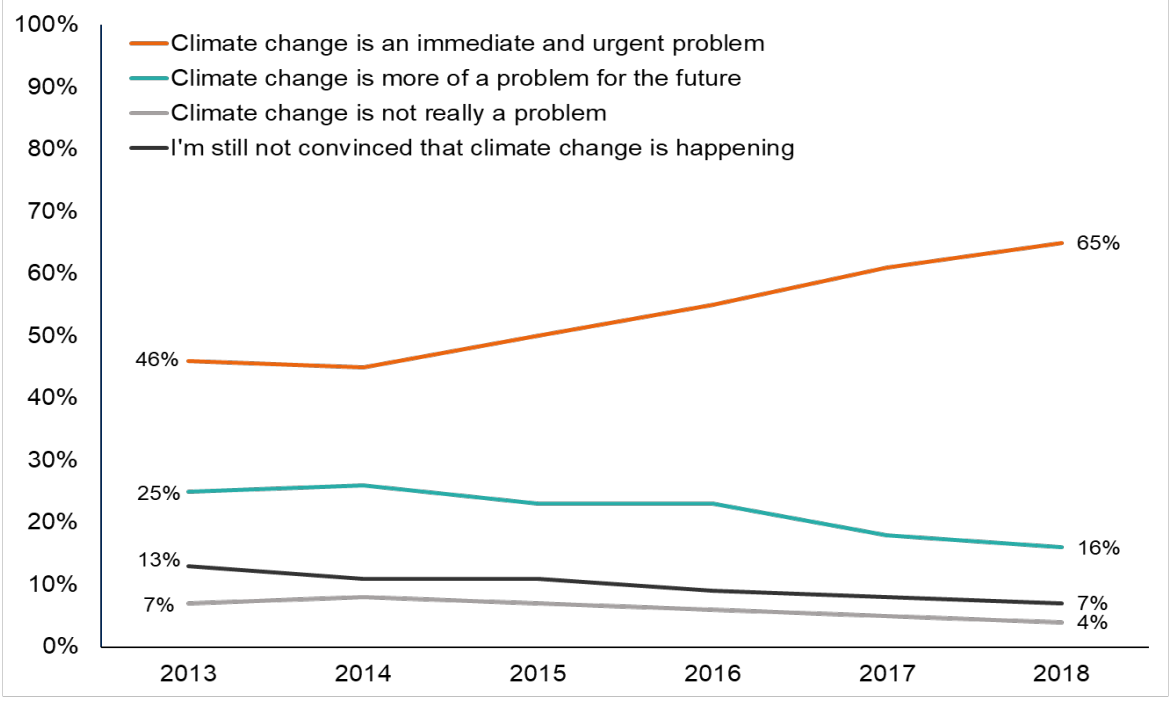
There is overwhelming expert consensus that climate change is a real phenomenon, with no reputable scientific basis for denial. However, there is still a vocal minority of public figures who deny climate change. It is important to understand which messages are resonating with the public and the extent to which they believe that climate change is happening.

2.1.1 Belief in climate change

In Scotland, belief in climate change as an immediate and urgent problem has grown over time

Data from the Scottish Household Survey (SHS) shows that since 2013[10], the proportion of the Scottish public who agree that climate change is an immediate and urgent issue has grown over time, while the proportions thinking that it's a problem for the future, not a problem, or not happening have all fallen over time.

Figure 1: How have the climate change views of people in Scotland changed over time?



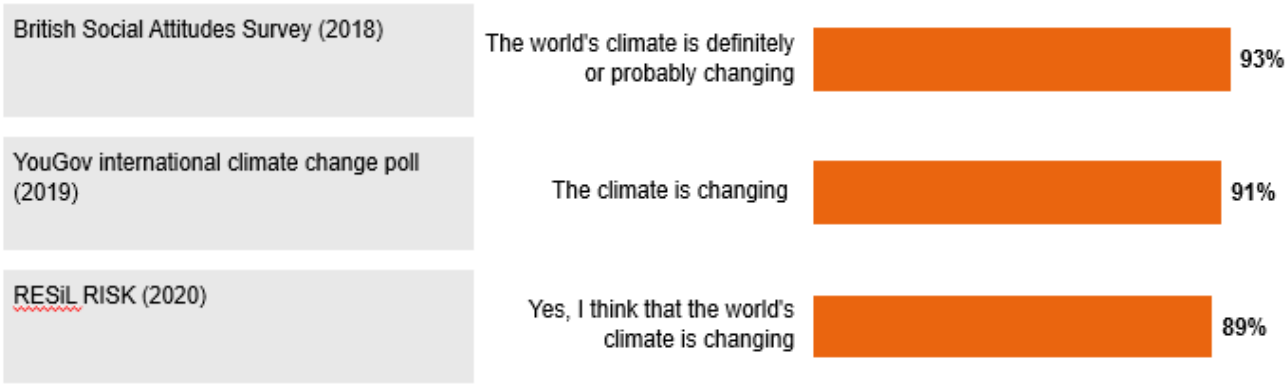
[10] Scottish Government, 2019. https://www.gov.scot/publications/scotlands-people-annual-report-results-2018-scottish-household-survey/

People in Scotland and the rest of the UK generally believe that climate change is happening and that it is a major and pressing issue

Most people (between 85% and 95%) believe that the world's climate is changing, and this is consistent across the Great Britain (GB) and UK-wide evidence base (Figure 2).

The data suggests that only a small minority deny that climate change is happening – figures varied between 1% and 7%. Figures for Scotland are at the higher end of this range (7% in the Scottish Household Survey[11]). However, this may be explained by the SHS question wording, which used more flexible language than that used in other comparable surveys ('I'm still not convinced that climate change is happening', compared with 'the world's climate is definitely not changing…' used in the British Social Attitudes Survey[12]).

Figure 2: How common is belief in climate change?



According to SHS data, most people in Scotland think that climate change is a problem, whether they consider it to be an immediate and urgent one (65% agreed) or more of a problem for the future (16%).

Across the UK, the majority (62%) disagreed with the statement 'I think the impact of climate change has been exaggerated'[13] and agreed with the text of the UK Parliament resolution that we're facing a climate emergency (67% agreed, while just 11% disagreed)[14]. People in England were more likely to agree that the impact of climate change had been exaggerated than those in Scotland (23% agreed, compared with 16%).

2.1.2 Belief in the human causes of climate change

Views on whether climate change is caused by human activity are more mixed, but most people think humanity is at least partly responsible

No Scotland-specific survey asked about the human causes of climate change during the time period covered by the evidence review. However, UK surveys show that most people in the UK believe that human activity is responsible for climate change, whether that was partly, mostly, or entirely responsible (Figure 3). Where discrepancies exist, these are likely to be the result of

[11] Scottish Government, 2019. https://www.gov.scot/publications/scotlands-people-annual-report-results-2018-scottish-household-survey/

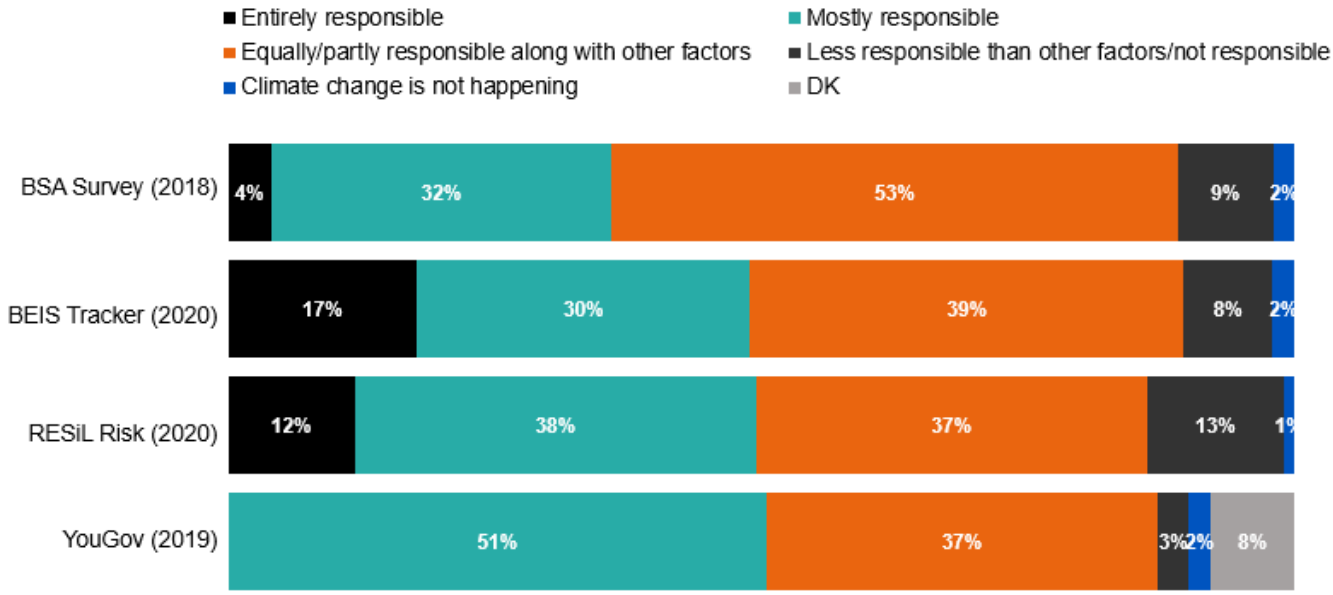
[12] NatCen, 2018. https://www.bsa.natcen.ac.uk/media/39251/bsa35_climate_change.pdf

[13] Comres, 2019. https://www.comresglobal.com/wp-content/uploads/2019/05/Climate-Change-ComRes-Poll-April-2019.pdf

[14] The Policy Institute, 2019. https://drive.google.com/file/d/1-9o7FIdqtXe-7g_RAWPwTd7JvMy8hPsG/view

varying question wording - for example, the YouGov survey[15] in GB did not allow the option 'entirely responsible', which explains the comparatively high proportion answering that human activity was most responsible for climate change.

Figure 3: Is human activity responsible for climate change?



In a GB-wide survey carried out by ComRes in April 2019, 67% of Britons agreed that 'I believe human activity is the principal cause behind climate change'. People in Scotland were more likely to agree with this statement than those in England and Wales (75% as compared to 67% and 63% respectively[16], suggesting Scotland is somewhat ahead of other parts of GB in terms of acknowledging human contribution to climate change.

2.1.3 Demographic differences

Attitudes on the existence and seriousness of climate change vary between different demographic groups in both Scotland and the wider UK. Women, those in higher social grades, younger people, and the more highly educated are all more likely to view climate change as a real issue.

Gender
Men in GB were more likely than women to agree that the impact of climate change had been exaggerated (27% as compared to 17%) according to the ComRes survey.
Age
Older people in GB were also more likely to think this (27% of those aged 55+, compared to 17% of 18-34 year-olds and 20% of 35-54 year olds). In Scotland, people in the oldest age group (75+) have been consistently least likely to view climate change as an urgent and immediate problem (46% in the 2018 SHS, compared to 72% of 35-44 year olds).

[15] YouGov, 2019. https://d25d2506sfb94s.cloudfront.net/cumulus_uploads/document/epjj0nusce/YouGov%20-%20International%20climate%20change%20survey.pdf

[16] Comres, 2019. https://www.comresglobal.com/wp-content/uploads/2019/05/Climate-Change-ComRes-Poll-April-2019.pdf

Education level

The British Social Attitudes survey also found that in GB, younger people and people with higher qualifications were more likely to believe climate change is happening[17]. In Scotland, the 2018 SHS found that 81% of those with a degree or professional qualification thought of climate change as an immediate and urgent problem, twice as high as the proportion of those with no qualifications who thought this (40%).

Socioeconomic status

The SHS also found that those in the least deprived quintile in Scotland were more likely to see climate change as an urgent problem (75%) compared to those in the most deprived quintile (52%).

Similar to belief in climate change, women, younger people and those of higher social grades were also more likely to think climate change is caused by human activity.

Gender

Women in GB were more likely than men to agree that human activity is the principal cause behind climate change (69% as compared to 65%) according to the ComRes survey.

Age

Younger people in GB were more likely to think human activity was responsible for climate change. People aged 18-34 (73%) and aged 35-54 (68%) were both more likely than those aged 55+ to agree with this (62%) according to the ComRes survey. A UK-wide survey for BEIS found that 56% of 16-24 year olds thought this, compared to between 41% and 46% for older age groups[18].

Socioeconomic status

Those in higher social grades were more likely to think humanity was responsible for climate change. The same GB-wide ComRes survey found that 71% of AB respondents thought this way, compared to 65% for both C2 and DE social grades. The UK-wide BEIS survey found that 55% of people in the AB group thought that climate change was mainly or entirely caused by human activity, as compared to 40% of those in the DE group.

KEY FINDINGS

The available evidence suggests that most people in Scotland, like those in the rest of the UK, believe that climate change is happening. Most also believe climate change is an immediate and urgent problem, and the proportion of the Scottish public who agree with this has grown over time.

Most people in the UK believe human activity has been a factor in the causes of climate change. Analysis of Scotland subgroup data from a GB-wide survey indicates that people in Scotland are more likely to believe this than those in England and Wales, suggesting Scotland is somewhat ahead of other parts of GB in terms of acknowledging human contribution to

[17] NatCen, 2018. https://www.bsa.natcen.ac.uk/media/39251/bsa35_climate_change.pdf
[18] BEIS, 2020. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/884028/BEIS_PAT_W33_-_Key_findings_Final_.pdf

climate change. There is no Scotland-specific survey evidence for this, however, which represents a data gap.

Younger people and people with higher qualifications were more likely to believe both that climate change was happening and that it was caused by human activity.

2.2 Levels of concern about climate change

The previous section established that most people in Scotland and the rest of the UK believe that climate change is happening and is caused, at least partly, by human activity. This section follows on to explore levels of concern about climate change, exploring change over time and whether levels of worry vary among different demographic groups.

2.2.1 Level of concern

Most people in Scotland and the rest of the UK say they are worried about climate change

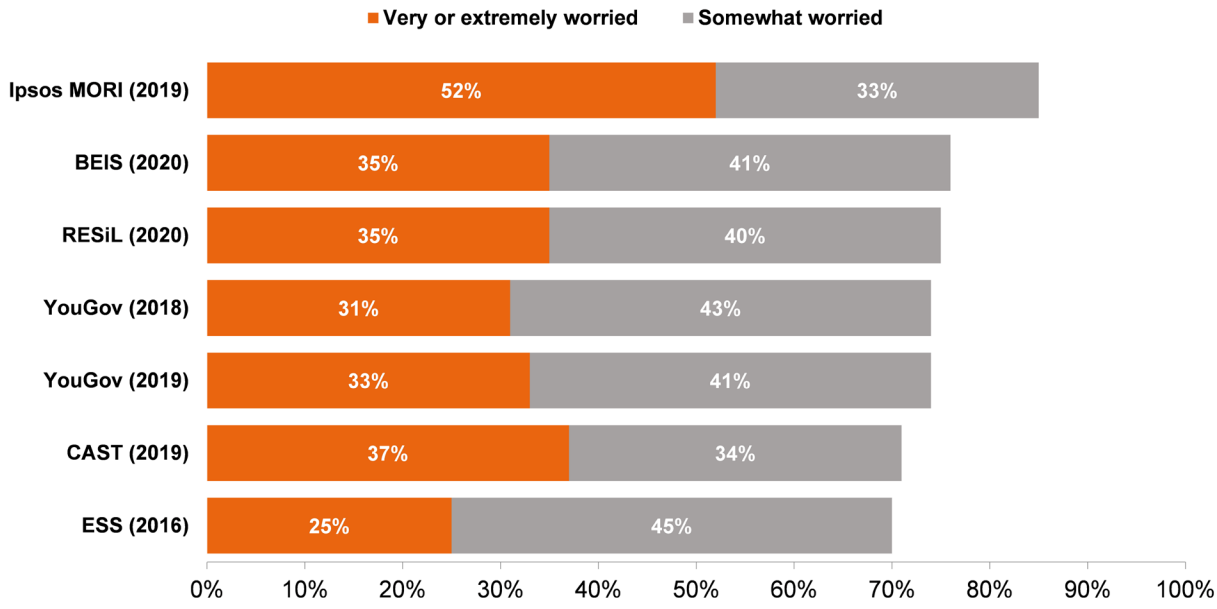
The evidence base shows that most people in Scotland are concerned about climate change. In an Ipsos MORI poll in late 2019, 84% of Scots were concerned about climate change, including 38% who were very concerned[19]. Similarly, a Survation poll carried out in Scotland in August 2019 found that 35% were very concerned while 46% were quite concerned[20].

The picture is similar at a UK or GB-wide level. Generally, the vast majority across the UK or GB were at least somewhat concerned about climate change, including around a third who were very or extremely worried about climate change (Figure 4). In the polls below, findings for Scotland are not significantly different from the overall findings.

[19] Ipsos MORI, 2020 (survey conducted Nov-Dec 2019). https://www.ipsos.com/sites/default/files/ct/news/documents/2020-01/scotland-climate-change-charts-2020.pdf

[20] Survation, 2019. https://www.fightforscotlandsnature.scot/wp/wp-content/uploads/2019/09/Scot-Link-final-tables-pdf.pdf

Figure 4: How worried is the UK public about climate change?



One study by YouGov found that just over half (55%) of respondents were worried about the impact of climate change. These figures are lower than the level of concern expressed in the other surveys, but it is worth noting that the discrepancy may be due to the different question wording[21]. This survey asked participants whether they worried about 'the impact of climate change' rather than climate change itself, allowing for a different interpretation. The Ipsos MORI poll found the highest levels of UK-wide concern about climate change (85%), which may well be because the fieldwork was conducted in July 2019, during a heatwave[22].

A UK-wide survey carried out for the BBC asked children and young people aged 8-16 about the extent to which they worried about climate change. When asked which word best describes how they felt about their future and the environment, 58% said they were worried, 14% were relaxed about it, and 12% were indifferent[23].

2.2.2 Change over time

The public are more worried about climate change than they used to be

There is no Scotland-specific survey data exploring how levels of concern about climate change have shifted over time. However, analysis of the views of Scottish respondents within UK and GB-wide surveys indicates that findings for Scotland are similar to those reported at the UK or GB level.

In a 2020 UK-wide survey by the Centre for Climate Change and Social Transformations, nearly half of respondents (48%) said they had become more worried about climate change in the last 12 months, 40% that it had remained the same, and only 6% said they were less worried than they had been a year ago[24]. When asked, those who said they had become more

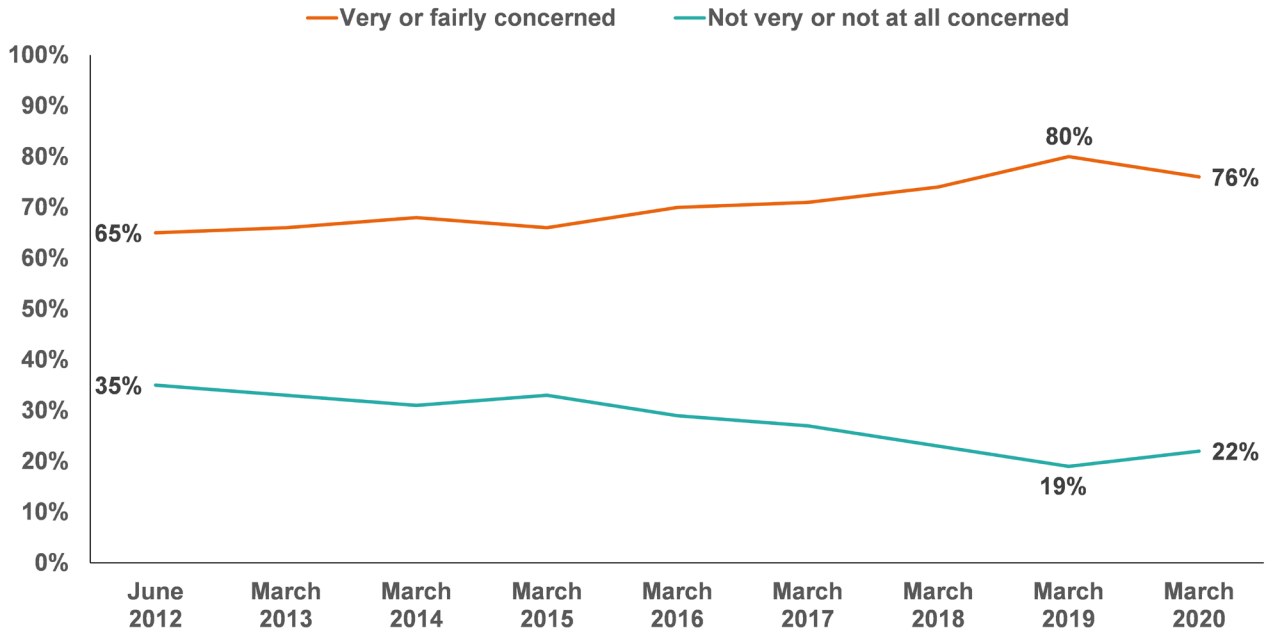
[21] YouGov, 2019. https://d25d2506sfb94s.cloudfront.net/cumulus_uploads/document/wy50gwmvie/OxfamResults_191223_ClimateChange.pdf
[22] Ipsos MORI, 2019. https://www.ipsos.com/ipsos-mori/en-uk/concern-about-climate-change-reaches-record-levels-half-now-very-concerned
[23] ComRes, 2020. https://www.comresglobal.com/wp-content/uploads/2020/03/Final-Newsround-Climate-Change-Poll-301019-0203.pdf
[24] Centre for Climate Change and Social Transformations, 2020. https://cast.ac.uk/wp-content/uploads/2020/01/CAST-Briefing-paper-02-Pubic-opinion-in-a-time-of-climate-emergency-min.pdf

worried gave reasons including weather-related factors (27%), increased publicity (20%), and the perception that environmental changes were accelerating (12%).

A YouGov poll conducted in March 2019 found that a third (33%) of the UK public said they had become more concerned in the last year, 45% had felt no difference because they were concerned a year ago and are still as concerned, and 15% felt no difference because they weren't concerned 12 months ago and still are not concerned. A very small minority (2%) said they had become less concerned about climate change in the last year.[25]

The BEIS public attitudes tracker has asked UK participants about their level of concern annually since 2012, with the results shown in the graph below[26]. Although levels of concern have dropped this year, it is worth noting that the fieldwork was conducted in March 2020 during the COVID-19 pandemic and we cannot know what impact this may have had on responses (and it is not clear if this will be explored by BEIS).

Figure 5: How have levels of concern changed over time?



The GB-wide RESiL survey conducted in 2019 showed that the proportion of the British public who said they were fairly, very or extremely worried about climate change had increased over time, from 60% in 2016 to 80% in 2019[27].

2.2.3 Demographic differences

Levels of concern were highest amongst younger people and higher socio-economic groups

The same groups who are more likely to think climate change is real – younger people and those in higher socio-economic groups – are also more likely to say they are worried about climate change.

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[25] YouGov, 2019 https://d25d2506sfb94s.cloudfront.net/cumulus_uploads/document/sfjpv6qc2w/StopClimateChaosResults_190325_Scotland_W.pdf

[26] BEIS, 2020. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/884028/BEIS_PAT_W33_-_Key_findings_Final_.pdf

[27] Understanding Risk research group, 2020. http://orca.cf.ac.uk/129452/1/resilrisk-FINAL-ONLINE.pdf

Age
In the 2019 Ipsos MORI GB-wide poll, the youngest age group were the most likely of any age group to say they were worried about climate change – 96% of 16-24 year olds said they were concerned[28]. A GB-wide poll by YouGov found that those in the 18-24 age group were the least likely to say they were not concerned at all (2% as compared to an average of 7%)[29]. The BEIS UK-wide public attitudes tracker found less variance by age but did find that 16-24 year olds (81%) and 55-64 year olds (80%) were more likely to say they were concerned than those aged 35-44 were (71%).
Socio-economic status
The 2019 Ipsos MORI GB-wide survey found that while every social grade expressed worry about climate change, concern was higher among the higher socio-economic groups – 89% of ABC1s were worried, as compared to 80% of C2DEs. Wave 33 of the BEIS Public Attitudes Tracker found that people in the UK in higher social grades were more likely to say they were concerned (83% of ABC1s agreed with this, compared with 65% of DEs). Other survey results were also consistent, finding that those in the ABC1 group were more likely to say they were very concerned (34%) than those in the C2DE group (26%)[9].

KEY FINDINGS

A large majority of people in Scotland and the rest of the UK say they are worried about climate change.

People generally reported that they were as concerned or more concerned than they had been a year ago. The available evidence suggests that levels of concern about climate change have increased in recent years.

Younger people and people in higher socio-economic groups were more likely to say they were worried about climate change.

2.3 Impacts of climate change

Recent extreme weather events (such as the July 2019 heatwave, and the 2018 coldwave 'the Beast from the East') have drawn attention to the impacts of climate change on the UK. This section explores public perceptions of the effects of climate change so far, and what impacts people expect to see in the future.

2.3.1 The impact of climate change in the UK so far

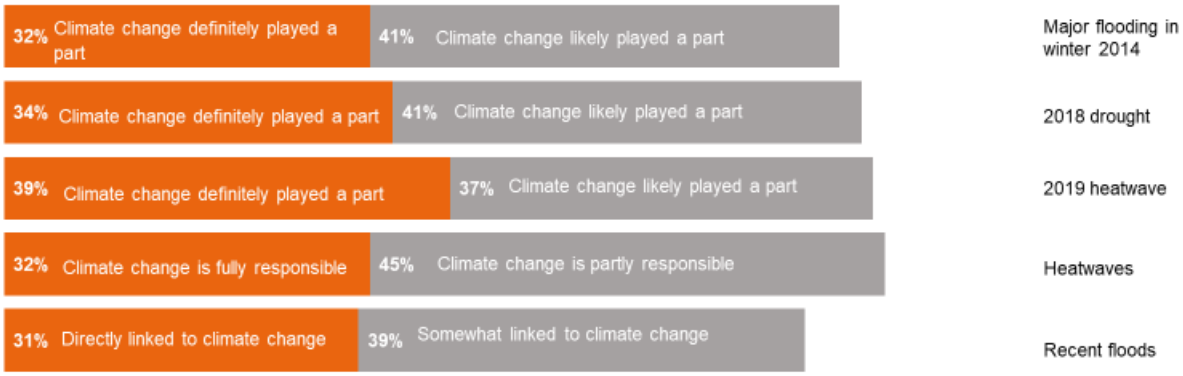
Most people think that climate change is at least partially responsible for recent adverse weather events. However, they were less likely to think they had encountered the impacts of climate change first-hand

There is no recent data available from Scotland-specific surveys on people's views of the impacts of climate change on the UK. However, analysis of Scottish respondents' views within GB-wide surveys suggests that the views of people living in Scotland are in line with those of people across Britain overall.

[28] Ipsos MORI, 2019. https://www.ipsos.com/ipsos-mori/en-uk/concern-about-climate-change-reaches-record-levels-half-now-very-concerned
[29] YouGov, 2019. https://d25d2506sfb94s.cloudfront.net/cumulus_uploads/document/wy50gwmvie/OxfamResults_191223_ClimateChange.pdf

A 2019 GB-wide survey by Ipsos MORI found that around three quarters (73%) of the British public think that Britain is already feeling the impacts of climate change[30] (with findings similar for Scotland specifically). Where surveys (by RESiL RISK and YouGov[31]) asked participants whether they attributed recent weather events to climate change, between 60% and 70% thought they were linked in some way to climate change (Figure 6).

Figure 6: Is climate change responsible for recent adverse weather events?



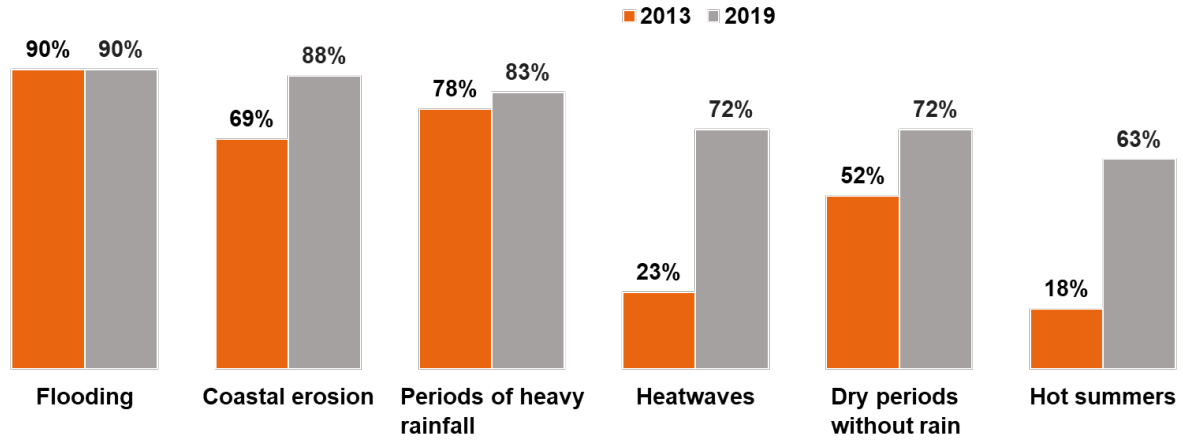
Among GB respondents (in the RESiL RISK survey) who had experienced extreme weather events, the most common were heat wave discomfort (55%), water restrictions (21%) and flooding (19%)[32]. In a 2020 GB poll by Ipsos MORI, half of those who said they had been negatively affected by environmental change remembered air pollution (48%), 38% recalled storms, and 34% mentioned flooding[33]. The first survey focussed only on weather events while the latter asked the public about environmental change, which is likely to explain the difference in results. The available data does not show variation in weather impacts between Scotland and other parts of GB. While the Ipsos MORI survey shows that findings for Scotland are similar to those for GB as a whole, it should be noted that the small sample size for Scotland means that comparisons are indicative only.

2.3.2 Change over time: impacts so far

The available trend data is limited, but the Ipsos MORI 2019 survey found that the proportion who agree that Britain is already feeling the impacts of climate change has grown from 41% in 2010 to 73% in 2019. Furthermore, there is evidence to suggest that the level of public concern about adverse weather events has increased over time. Figure 7 shows results from two surveys (the 2013 PREPARE survey, cited in the 2019 RESiL RISK survey), in which respondents were asked how serious a problem they thought different weather events currently are in the UK.

[30] Ipsos MORI, 2019. https://www.ipsos.com/ipsos-mori/en-uk/concern-about-climate-change-reaches-record-levels-half-now-very-concerned
[31] YouGov, 2019. https://d25d2506sfb94s.cloudfront.net/cumulus_uploads/document/krbb8nlpmr/YouGov%20-%20climate%20change%20heatwave%20190726.pdf
[32] Understanding Risk Research Group, 2020. http://orca.cf.ac.uk/129452/1/resilrisk-FINAL-ONLINE.pdf
[33] Ipsos MORI, 2020. https://www.ipsos.com/sites/default/files/ct/news/documents/2020-02/ipsos-omnibus-environmental-impact-poll-feb-2020.pdf

Figure 7: Have perceptions of the seriousness of different weather events changed since 2013?



2.3.3 Demographic differences

Younger people and those in higher socio-economic groups are more likely to think the UK is already experiencing climate change impacts

Age
It was more common for younger people in GB to think that record-breaking heatwaves were caused by climate change (44% of 18-24 year olds as compared to 32% of 25-49 year olds, 31% of 50-64 year olds, and 26% of those aged 65+)[34].
Socioeconomic status
People in the ABC1 socio-economic group in GB were more likely than those in the C2DE group to think that Britain is already feeling the effects of climate change (81% compared to 62%), that recent floods were linked to climate change (34% compared to 27%[35]) and that climate change is responsible for record-breaking heatwaves (36% compared to 27%).

2.3.4 Expected future impacts of climate change

Most people in Scotland recognise that climate change will impact on their country, but recognition of personal impacts is lower. The most common concerns about future impacts relate to the weather

More than three quarters of adults in Scotland disagreed that 'climate change will only have an impact on other countries' (48% strongly disagreed and 28% tended to disagree, according to the SHS 2018). While most recognised that climate change would affect their country, recognition that it would affect them personally was slightly lower. In a survey by Survation, 17% of Scots expected climate change to have 'a great deal of impact' on their lives, while 41% anticipated 'a fair amount of impact'[36]. Levels of agreement were lower still when respondents were asked about specific impacts – only 6% of Scots thought they were definitely at risk of

[34] YouGov, 2019. https://d25d2506sfb94s.cloudfront.net/cumulus_uploads/document/krbb8nlpmr/YouGov%20-%20climate%20change%20heatwave%20190726.pdf
[35] Ipsos MORI, 2019. https://www.ipsos.com/ipsos-mori/en-uk/concern-about-climate-change-reaches-record-levels-half-now-very-concerned
[36] Survation, 2019. https://www.fightforscotlandsnature.scot/wp/wp-content/uploads/2019/09/Scot-Link-final-tables-pdf.pdf

flooding, with 28% saying they were possibly at risk. About half (49%) thought they were possibly at risk of heat stress, while 18% said they were definitely at risk.

At the UK-wide level, the three most common concerns about the effects of climate change were weather-related, namely: getting wetter with more storms, rains or flooding (16%), weather changing in general and becoming less predictable (14%), and becoming hotter and drier with more droughts and/or heatwaves (13%)[37]. Reflecting some of these weather-related concerns, a Survation survey showed that most people in Scotland were specifically concerned about potential threats to wildlife from climate change.

In the RESil RISK GB survey respondents were asked which impacts they expected to be most serious in their community. The most common response was again weather-related (17% thought it would be wetter weather) but the second most common was 'don't know', suggesting that people are less confident thinking about climate change on a local level.

When surveyed (by YouGov) about how likely they thought different global impacts of climate change were, the impact that most thought was likely in GB was 'cities being lost to rising sea levels' (71%)[38]. This was followed by mass displacement of people from some parts of the world to others (70%), and serious damage to the global economy (66%). It was less common for people to think that a new world war was a likely result of climate change (26%), although 50% thought that small wars were a likely impact. A third thought that the extinction of humanity was a likely consequence of climate change (33%).

In the RESil RISK survey, 93% said they were concerned about 'poor harvests, due to extreme weather, pushing up food prices', followed by 91% who were concerned about the health impacts of heatwaves (especially for the elderly), the flooding of homes due to heavy rainfall (91%), coast erosion due to rising sea levels (91%), wildlife decline (91%) and public services being disrupted due to flooding (91%). More agreed (40%) than disagreed (20%) with the idea that 'climate change will lead to more migration to the UK in the future.

2.3.5 Change over time: future impacts

The proportion of people thinking that climate change will not affect Scotland has fallen in recent years.

There has been a year-on-year fall in the proportion of the Scottish public who agree that 'Climate change will only have an impact on other countries, there is no need for me to worry' according to the SHS. Agreement with this statement has decreased from 28% in 2015 to 17% in 2018), while disagreement with it has increased from 48% in 2015 to 61% in 2018.

When people were asked about how concerned they were about specific impacts of climate change, the biggest change between 2013 and 2019 was seen for heat-related impacts: the level of concern about cities, which trap heat, becoming unbearably hot in heatwaves rose from 63% to 86%, and the level of concern about roads and public transport being disrupted due to heatwaves rose from 65% to 86%.

Key findings

Most people in Scotland, and the rest of the UK, agree that we are already feeling the effects of climate change.

People tended not to see themselves as at risk of specific impacts (although they may on a broader scale expect climate change to affect their life).

[37] Understanding Risk Research Group, 2020. http://orca.cf.ac.uk/129452/1/resilrisk-FINAL-ONLINE.pdf
[38] YouGov, 2019. https://d25d2506sfb94s.cloudfront.net/cumulus_uploads/document/epjj0nusce/YouGov%20-%20International%20climate%20change%20survey.pdf

While there is limited Scotland-level data available, most people in the UK attributed recent extreme weather events (such as heatwaves and major flooding) to climate change, and levels of concern about such events has grown over time.

2.4 Climate change and individual behaviour change (e.g. eating habits, types of travel, recycling)

Understanding the extent to which the public are changing, or are willing to change, their behaviour is an important element of the response to climate change. In part, this is because understanding that others are taking action plays into 'social norms' which are important in prompting behaviour change.[39]

It is clear from the evidence that many of the UK public are already taking action to combat climate change (there is limited data available for the Scottish public specifically). This is true whether or not these actions are prompted by concern for the climate, or other motivating factors such as health, wellbeing, finance and convenience.

Below we lay out the recent evidence of behaviour change and willingness to change. There is little Scotland-specific evidence on these issues, which represents a data gap.

2.4.1 Daily transport choices

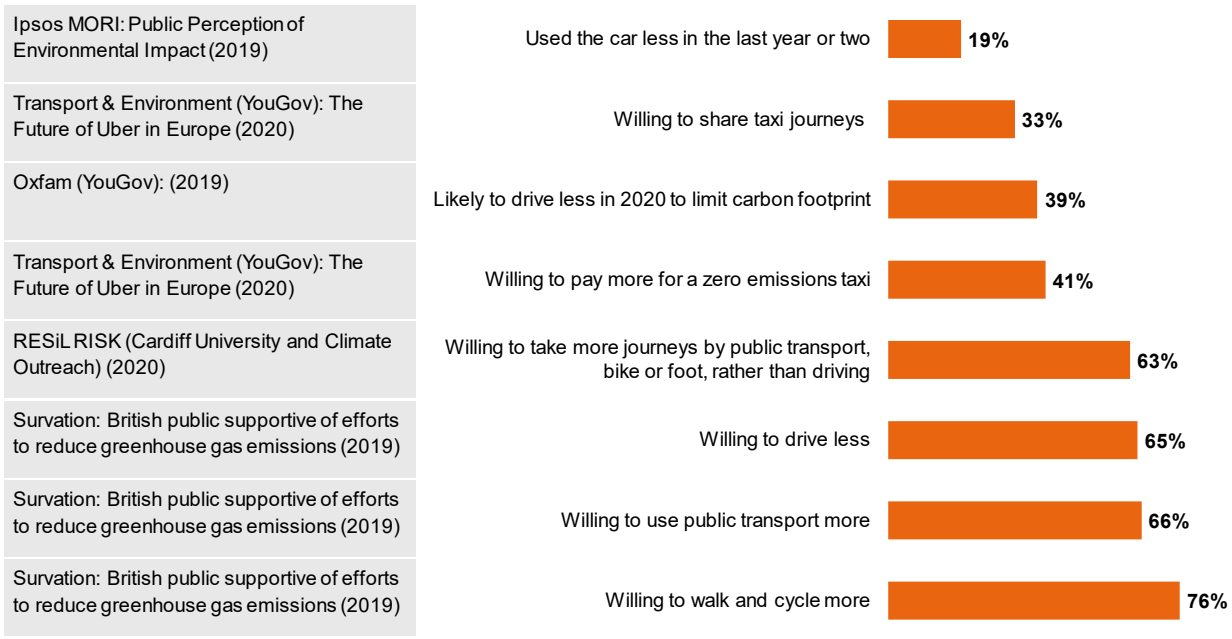
Most people in the UK are open to changing their daily transport behaviours, which some already doing so.

While there is no recent Scotland-specific evidence on this, most UK-wide research shows openness to changing daily transport behaviours among the public. Indeed, recent Ipsos MORI research suggests nearly one in five are already reducing their car use (see Figure).

Reported likelihood to change behaviour is lower where the change is explicitly tied to climate change motivations. Active travel behaviours have co-benefits for health and wellbeing, and many who are making changes may be doing so for reasons including but not limited to climate change.

[39] Schultz et al., 2007.

Figure 8: How willing are the UK/GB public to change transport behaviours?



2.4.2 Electric and hybrid vehicles

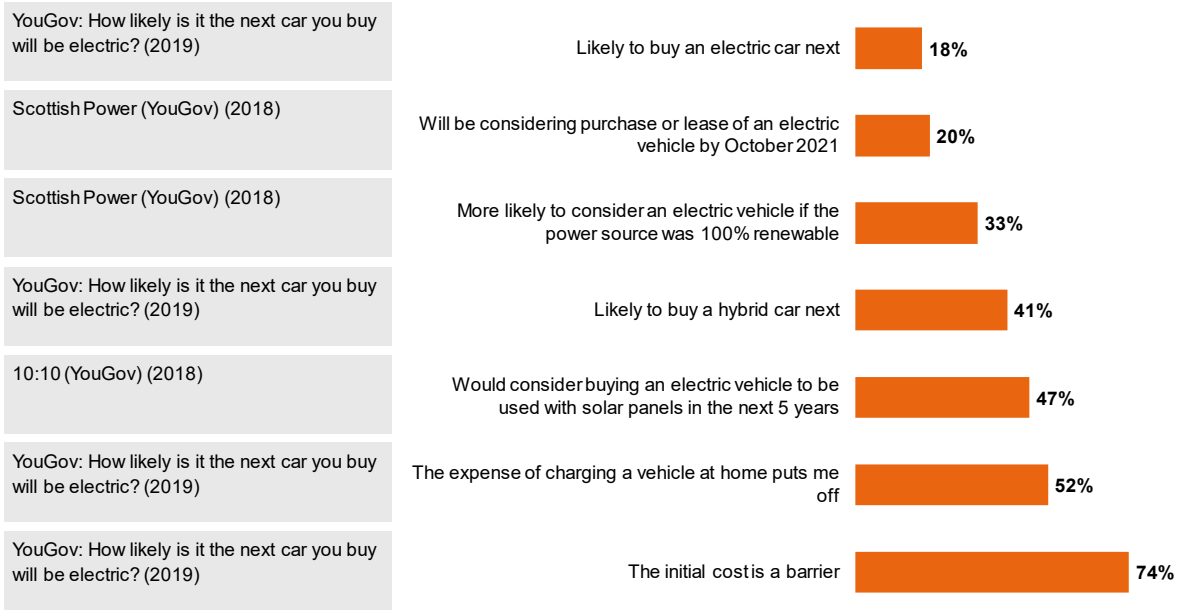
A minority of people in Scotland are likely to move to electric and hybrid vehicles. Cost and concern about non-renewable power sources are barriers.

The public show some interest in purchasing electric and hybrid vehicles in the near future, though GB-wide 2019 YouGov research[40] found that in Scotland, only 1% consider it 'very likely' that their next car would be electric (the proportion for all of GB was 4%).

Initial cost, cost of charging, and concerns about non-renewable power sources are all identified as barriers to purchasing electric or hybrid vehicles. UK YouGov research[41] found that almost three quarters (74%) say that the initial cost of the car is a barrier and more than half (52%) say that the expense of charging the vehicle at home puts them off. UK studies for Scottish Power and 10:10 both found that likelihood to consider an electric vehicle was greater if the power source for that vehicle was renewable. [42] [43]

[40] YouGov, 2019. https://yougov.co.uk/topics/transport/survey-results/daily/2019/06/18/0a5d3/2.
[41] YouGov, 2019. https://yougov.co.uk/topics/transport/articles-reports/2019/01/16/why-uks-electric-car-adoption-so-sluggish
[42] https://www.scottishpower.com/news/pages/scottishpower_launches_uks_first_end_to_end_electric_vehicle_package_thats_100_green.aspx
[43] https://d25d2506sfb94s.cloudfront.net/cumulus_uploads/document/ein4q4otuf/1010_181016_SolarPanels.pdf

Figure 9: UK/GB willingness to buy or consider electric and hybrid vehicles, and concerns around these



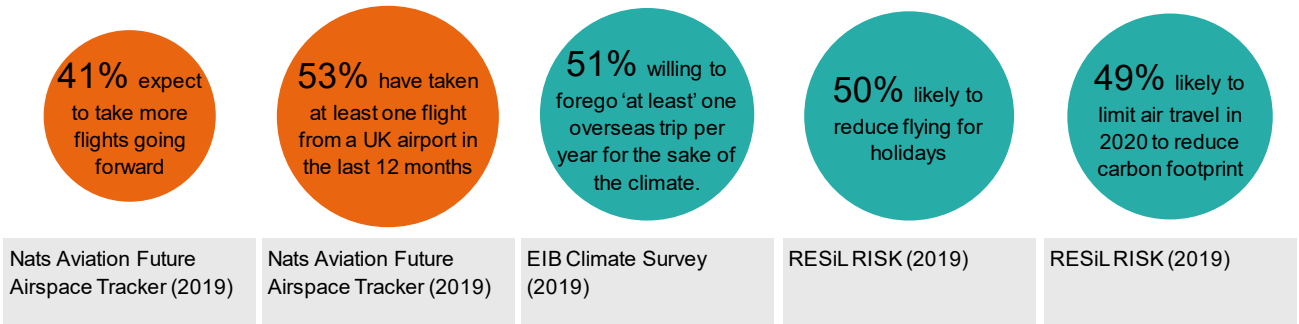
2.4.3 Flying or overseas travel

More than half the UK public have flown in the past year, but there is willingness to reduce air travel in future.

According to the Nats Aviation Future Airspace Tracker[44], over half of the UK public (53%) took at least one flight in the last 12 months. Overall, 41% agreed they expect to take more flights in the next two years than they took in the preceding two years, while just under half (48%) disagreed.

Despite this, the public do show willingness to reduce their flying for holidays, with around half willing to limit or reduce our air travel, and a similar proportion in favour of a ban on short-distance flights (see Figure 10). ComRes[45] found around half of the GB public (51%) would be willing to forego 'at least' one overseas trip per year for the sake of the climate.

Figure 10: Air travel behaviour and attitudes



[44] Nats Aviation Future Airspace Tracker, 2019 https://www.comresglobal.com/wp-content/uploads/2020/01/comuk20037_natrep_tabs_02012020.pdf
[45] ComRes, 2019 https://www.comresglobal.com/wp-content/uploads/2019/05/Climate-Change-ComRes-Poll-April-2019.pdf

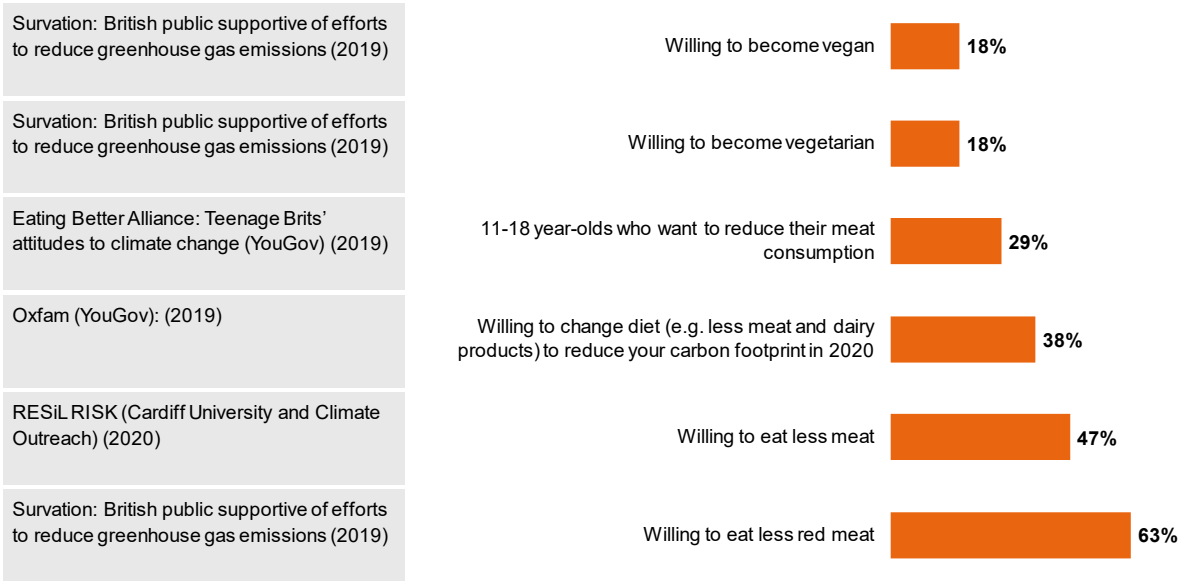
2.4.4 Dietary changes

In both Scotland and the rest of the UK there is some evidence of willingness to change dietary habits

People show willingness to change dietary habits (see Figure) but this varies with how specific and time-bound the question is. Vague 'willingness to change' questions with no timeframe tend to elicit more favourable responses.

Survation[46] found 63% would be willing to eat less red meat (72% in Scotland), and that more women would be willing to do this than men (68% and 58% respectively). It is important to note that no timeframe was given. In the same study, 31% said they would be willing to become vegetarian, and 18% that they would be willing to become vegan. This study also found greater willingness to shift diet among those with higher educational attainment, higher income levels and left-leaning politics.

Figure 11: UK willingness to make dietary changes



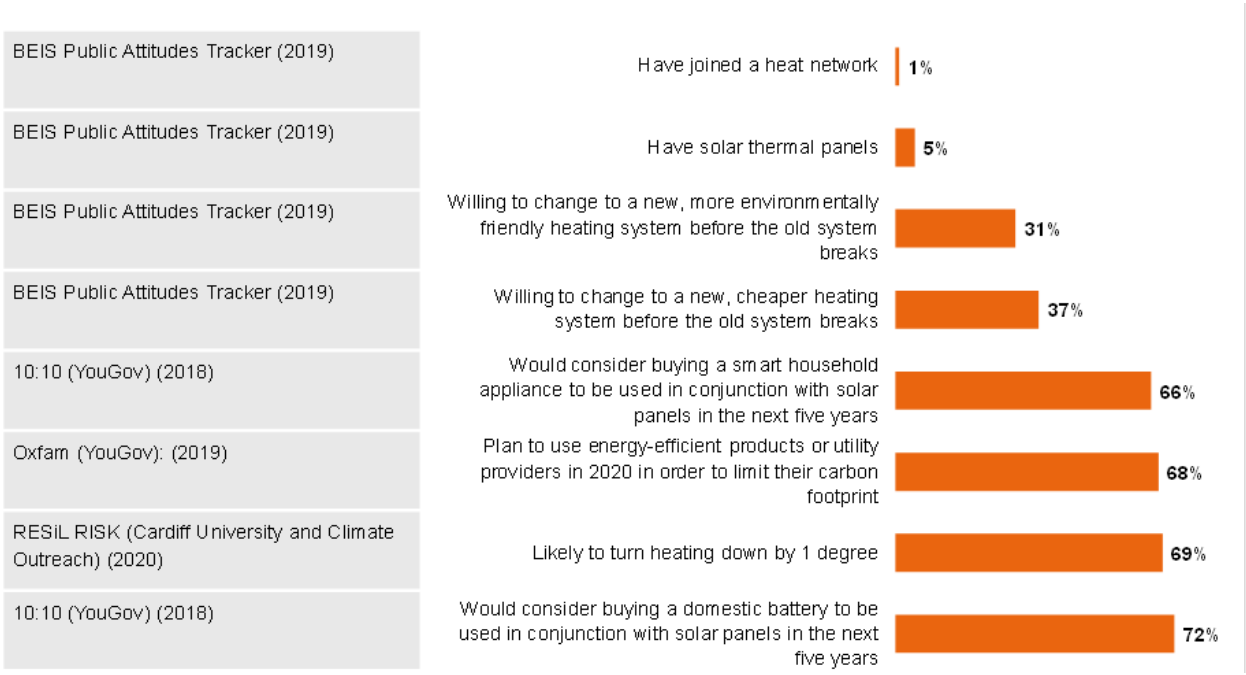
2.4.5 Energy and heating

The UK public are willing to make or consider making small changes to their energy and heating behaviour. Both saving money and climate change are motivations for this.

Very few in the UK have made switches to renewable heat, but around a third would be willing to change their existing heating system before the old one breaks, and say they are interested in both saving money and being more environmentally friendly (see Figure 12).

[46] Survation, 2019. https://www.survation.com/british-public-supportive-of-efforts-to-reduce-greenhouse-gas-emissions-new-survey-reveals/

Figure 12: UK Energy and heating behaviour changes and willingness to change



In December 2019, BEIS research found the most common renewable heating system in UK homes was solar thermal panels, with 5% of the population saying they had these installed. In total, 14% had either already installed a solar thermal panel or considered themselves likely to do so in the next few years. Only 3% of people were either considering or had already installed each of the other renewable heating types asked about (ground source heat pumps, air source heat pumps, biomass boilers). The biggest barriers to installation cited were cost of installation (30%) and not being the home owner (24%). This research found that even where people had heard of renewable heating systems there is still a substantial lack of knowledge about how the systems work, and their potential benefits. Despite this, 95% of those who had changed their heating in the past three years felt they had the right information to make a good choice.

2.4.6 Recycling, circular economy and embedded carbon

The public show willingness to recycle, but there may be barriers to encouraging higher rates of recycling.

Research by Zero Waste Scotland shows that 44.7% of household waste in Scotland was recycled in 2018[47]. This was a drop of 0.9% compared with the previous year, the first time recycling rates had fallen since 2011. This data showed that more plastic and glass was being recycled but a drop in rates for paper and cardboard recycling, the materials that are recycled the most.

High willingness to recycle among the UK public, and the perceived high impact of recycling, make it difficult to pinpoint why UK nations other than Wales are not seeing higher recycling rates. The literature reveals a number of barriers to recycling, but a general willingness among the public to take action on the area of waste and circular economy.

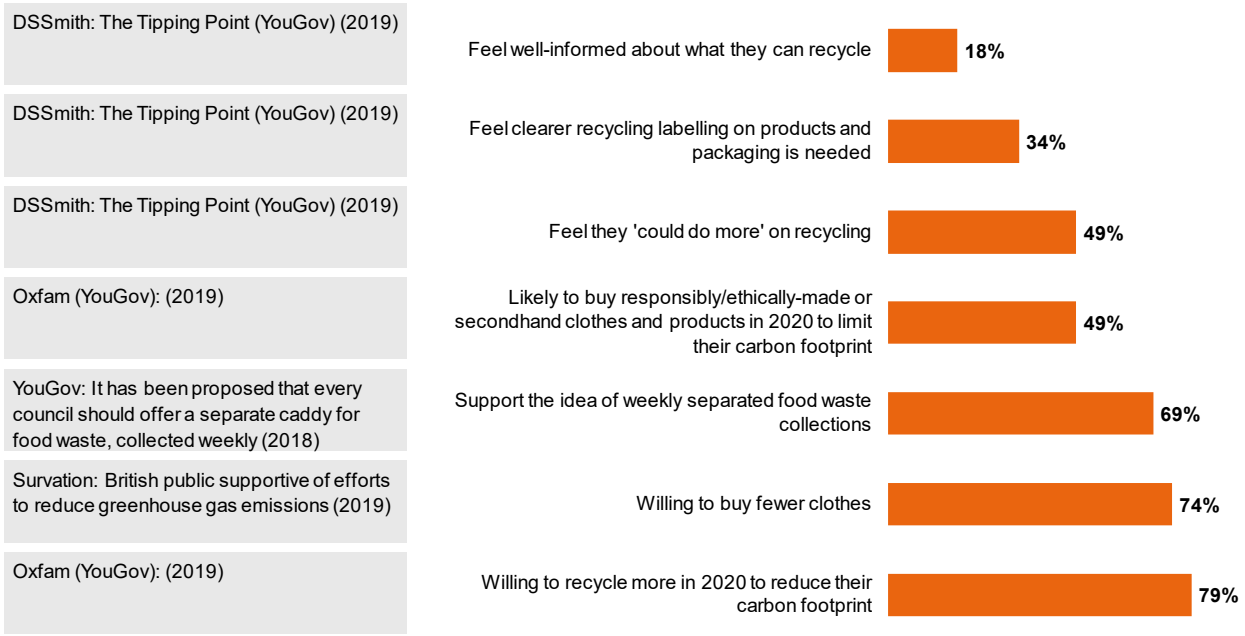
DSSmith's 'The Tipping Point'[48] report into the state of UK recycling cites consumer behaviours which compound the UK's recycling challenges: rising e-commerce; increasing use of composite and laminated packaging for 'on-the-go' food purchases; and attitudinal issues such as scepticism and confusion around recycling (see Figure). While Oxfam's research found 79% of Britons said they plan to recycle more during 2020, in order to reduce their carbon footprint,

[47] https://www.zerowastescotland.org.uk/press-release/progress-scotland%E2%80%99s-household-waste-reduction-and-carbon-impact-%E2%80%98more-needs-be-done%E2%80%99
[48] https://www.dssmith.com/recycling/insights/recycling-tipping-point

The Tipping Point states that people's good intentions around recycling do not translate into behaviour change for these reasons.

A YouGov poll in 2018[49] found 69% of the GB public support the idea of weekly separated food waste collections. Support for this idea was significantly higher among women (74%, vs 63% of men), and increased with age, being lowest amongst 18-24 year-olds (63%) and highest among those aged 65 and over (73%).

Figure 13: UK recycling and circular economy behaviours and willingness to change



2.4.7 Personal adaptation actions

The UK public show willingness to take action at an individual and community level to adapt to climate change.

The RESiL RISK study found a majority of the UK public were likely to take the following actions in order to adapt to climate change:

- Read about how to avoid heat stress during heatwaves (65%)
- Fit a water saving device (60%)
- Plant trees or re-landscape gardens to provide shade ('about half').

It also found the following likelihoods to take action on adaptation at a community level:

- Taking part in local community projects that aim to increase local protection from climate change (40% likely);
- Persuading relatives or friends to move away from flood plains (38%);
- Donating money to preserve species at risk from climate change (38% likely).

This survey found there was a great deal of uncertainty around climate adaptation actions, with large percentages choosing 'about as likely as unlikely' across the set of adaptation actions asked about.

Regarding flood risk, SEPA research in December 2018 found 60% of Scottish homeowners surveyed know it is their responsibility to protect their own property from flooding, and more than half know to contact SEPA for flood warning information.

[49] YouGov, 2018 https://yougov.co.uk/topics/food/survey-results/daily/2018/12/18/bbaf4/1

2.4.8 Demographic differences

Gender
Across a number of behaviours, women were more likely than men to say they were willing to take action. For example, this was true of eating less red meat (68% of women, 58% of men) and becoming vegetarian (35% of women vs 28% of men) in the Survation UK-wide research.[50] It was also true of willingness to forego 'at least' one overseas trip per year for the sake of the climate (53% of GB women, 49% of men).[51]
Age
Those in younger age brackets in the UK were significantly more likely to agree they are planning to increase their air travel (56% of 18-34 year olds vs 24% of those aged 55+). Agreement was significantly greater in households with children under 18 years old (54%) than those with grown-up or no children (35%).[52] Conversely, however, those aged 35-64 were more likely to say they are willing to forego 'at least' one overseas trip per year for the sake of the climate than those aged 65 and over were (48%).[53]
Socioeconomic status
The main barriers cited to electric vehicle uptake were financial. Unsurprisingly, then, YouGov GB-wide research[54] found that greater proportions of those in ABC1 social grades consider it likely their next car will be electric (6% very likely, 18% somewhat likely) compared to those in C2DE (2% very likely, 9% somewhat likely). Those in upper social grades were more likely to anticipate increasing their air travel in the next two years: 46% of ABs thought they would do this, compared with 41% of C1s, 42% of C2s and 32% of DEs.[55]

Key findings

The UK-wide evidence suggests high 'in principle' willingness to take action or do more on climate change, although there is little Scotland-specific data on willingness to change climate-related behaviours. Many people feel they 'could do more' though some feel they are already doing as much as they can.

Adoption of high-impact, high investment behaviours such as renewable heat is very low at present, though interest and willingness exists.

Research questions which explicitly ask whether people have taken action because of environmental motivations, or in order to achieve environmental ends (such as reducing your carbon footprint) sometimes result in less representative pictures of behaviour change. There

[50] Survation, 2019. https://www.survation.com/british-public-supportive-of-efforts-to-reduce-greenhouse-gas-emissions-new-survey-reveals/ .
[51] ComRes, 2019. https://www.comresglobal.com/wp-content/uploads/2019/05/Climate-Change-ComRes-Poll-April-2019.pdf .
[52] Nats Aviation Future Airspace Tracker, 2019. https://www.comresglobal.com/wp-content/uploads/2020/01/comuk20037_natrep_tabs_02012020.pdf
[53] ComRes, 2019. https://www.comresglobal.com/wp-content/uploads/2019/05/Climate-Change-ComRes-Poll-April-2019.pdf .
[54] YouGov, 2019. https://yougov.co.uk/topics/transport/survey-results/daily/2019/06/18/0a5d3/2
[55] Nats Aviation Future Airspace Tracker, 2019. https://www.comresglobal.com/wp-content/uploads/2020/01/comuk20037_natrep_tabs_02012020.pdf

can be many co-benefits to environmental behaviours (such as health, wellbeing, financial, convenience). Therefore, some actions may have environmental benefits, even when environmental motivations are not front of mind for the public.

There is a perception among many that they are already doing as much as they can on climate change. This suggests that we cannot necessarily expect significant further changes from the public unless the context surrounding them changes as a result of collective action from all actors including governments, local authorities and businesses.

2.5 Climate change and system change

This section looks at public understanding of the systemic constraints and actions around climate change. It explores understanding of power and responsibility, support for current targets and potential changes to policies that might be expected to impact climate change.

2.5.1 Scottish perceptions of accountability for climate change

A majority of the Scottish public tend to be in favour of greater action on climate change, and of maintaining or increasing Scottish accountability for environmental protections.

Research in March 2019[56] found that 70% of Scots support 'Scotland taking greater action over the next few years across sectors such as transport, food and home heating, to prevent climate change'.

Research in August 2019[57] found that among residents aged 16+ in Scotland, just under half (47%) thought that upon EU exit, the Scottish Parliament should pass laws requiring higher level of environmental protection, compared to EU laws. 37% thought the same levels of environmental protections were needed, while 6% thought levels of environmental protections should be lower. Those in the Highlands and Islands, Mid Scotland and Fife and North East Scotland were less likely to say protections should be lower, compared to Scots overall, while those in Glasgow were more likely to say protections should be lower (10%).

Scot Link[58] found support for the 'polluter pays' principle and 'precautionary principle' was high, with 52% of Scots feeling this should be passed into law, and 29% feeling this should be adopted voluntarily by the Scottish Government. A majority of Scots (59%) were in favour of the Scottish Government facing legal penalties if it misses certain targets for environmental protections.

2.5.2 Perceptions that climate change is being taken seriously

The British public generally feel that there is more that could be done to tackle climate change, and the evidence suggests that young people do not feel their views are being listened to by those in positions of power.

YouGov[59] found 68% of the British public feel their country could be doing more to tackle climate change, while just 23% feel the country is doing as much as reasonably can be done. Research by ComRes in October 2019 found that 76% of young people aged 11 to 16 feel climate change should be a priority for UK leaders and politicians. 20% of the sample of 11 to

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[56] YouGov, 2019. https://d25d2506sfb94s.cloudfront.net/cumulus_uploads/document/sfjpv6qc2w/StopClimateChaosResults_190325_Scotland_W.pdf

[57] Survation, 2019 https://www.fightforscotlandsnature.scot/wp/wp-content/uploads/2019/09/Scot-Link-final-tables-pdf.pdf

[58] Survation, 2019. https://www.fightforscotlandsnature.scot/wp/wp-content/uploads/2019/09/Scot-Link-final-tables-pdf.pdf

[59] YouGov, 2019. https://d25d2506sfb94s.cloudfront.net/cumulus_uploads/document/epjj0nusce/YouGov%20-%20International%20climate%20change%20survey.pdf.

16-year olds said tackling climate change should be UK leaders and politicians' number one priority.[60]

Only 19% of young people feel those in positions of power are listening enough to their views on the issue of climate change, according to the same ComRes survey. Similar proportions of young people trust and do not trust adults to tackle the challenges climate change presents to the planet and environment (38% vs 41% respectively). Young people overwhelmingly feel more could be done by world leaders to tackle climate change. 51% say some effort is being made but more could be done, and 28% feel there is not enough effort being made by world leaders. Only 10% say the right amount of effort is being made, while 2% feel too much effort is being made.

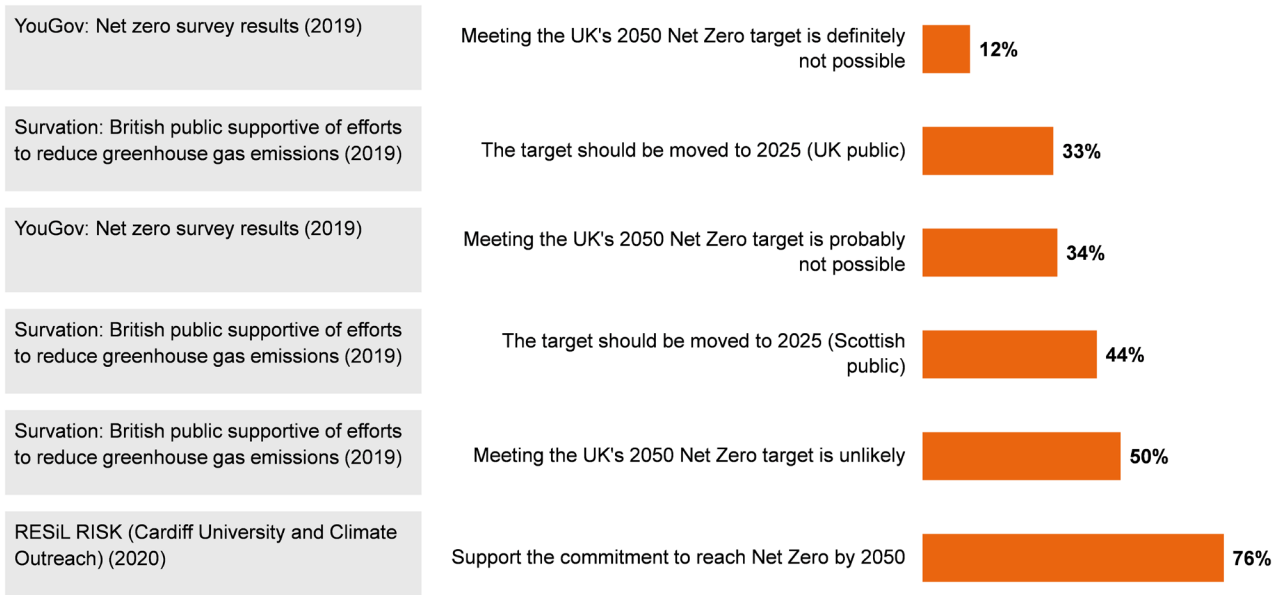
2.5.3 Satisfaction with current targets

The Scottish public are supportive of targets to reduce Scotland's carbon emissions targets to net zero.

Recent Ipsos MORI research (November/December 2019) found that a quarter of Scots (25%) believe the Scottish Government's target of net zero carbon emissions by 2045 is about right, while 45% want this target to be brought forward. Only 7% of Scots think the target of 2045 should be pushed back while 9% think there should be no target for net zero emissions. Younger people are more likely to think the target should be brought forward (68% of 18-24-year olds vs. 40% of those aged 55+).61

The wider British public are also overwhelmingly supportive of targets to reduce the UK's carbon emissions to net zero. Many have concerns about whether these targets will be reached, however. Some believe these targets should be more ambitious, and this is particularly the case among Scots reflecting on the UK's 2050 target (see Figure 14). This is likely to be driven, in part, by the fact that Scotland's net zero target is for 2045.

Figure 14: Support for and confidence in net zero targets



[60] ComRes, 2019. https://www.comresglobal.com/wp-content/uploads/2020/03/Final-Newsround-Climate-Change-Poll-301019-0203.pdf.
[61] Ipsos MORI, 2020. https://www.ipsos.com/sites/default/files/ct/news/documents/2020-01/scotland-climate-change-charts-2020.pdf

Research conducted in 2020 found that 76% of the British public support the commitment to reduce the UK's carbon emissions to net zero by 2050.[62] This said, a 2019 study by Survation found that 50% of British respondents surveyed believe it's unlikely that the UK Government will meet this target.[63] A YouGov study asking a similar question found that 34% felt this was probably not possible, and 12% felt this was definitely not possible.[64] In Scotland pessimism was slightly lower, with 34% considering this 'probably' not possible and 9% considering this 'definitely' not possible.

33% of participants in the Survation study[65] supported Extinction Rebellion's demand for the UK to reduce greenhouse gas emissions to zero by 2025 instead of the current target of 2050. This was significantly higher in Scotland, at 44%. A further 31% felt the target should be set between 2025 and 2050, while 15% felt the 2050 target should be kept (only 8% in Scotland). Only 2% felt the target should be set later and 7% felt it should be dropped altogether.

RESiL RISK found support for the Paris Agreement was high (76%) as was support for economic penalties for countries that refuse to be part of this agreement (66%).

2.5.4 Support for the declaration of a climate emergency

There is widespread backing for the UK's declaration of a climate emergency. There was no data available to show the Scottish public's level of support for the Scottish Government declaring a climate emergency.

RESiL RISK[66] found that in 2020 60% support a national declaration of climate emergency. Only 14% oppose this. 2019 research by the Centre for Climate Change and Social Transformations found that 61% supported this while 11% opposed it.[67] The same study found that 62% say that addressing climate change requires a 'high' or 'extremely high' level of urgency. Only one in ten (10%) felt that only a 'low level of urgency' or 'little or no urgency' is needed.

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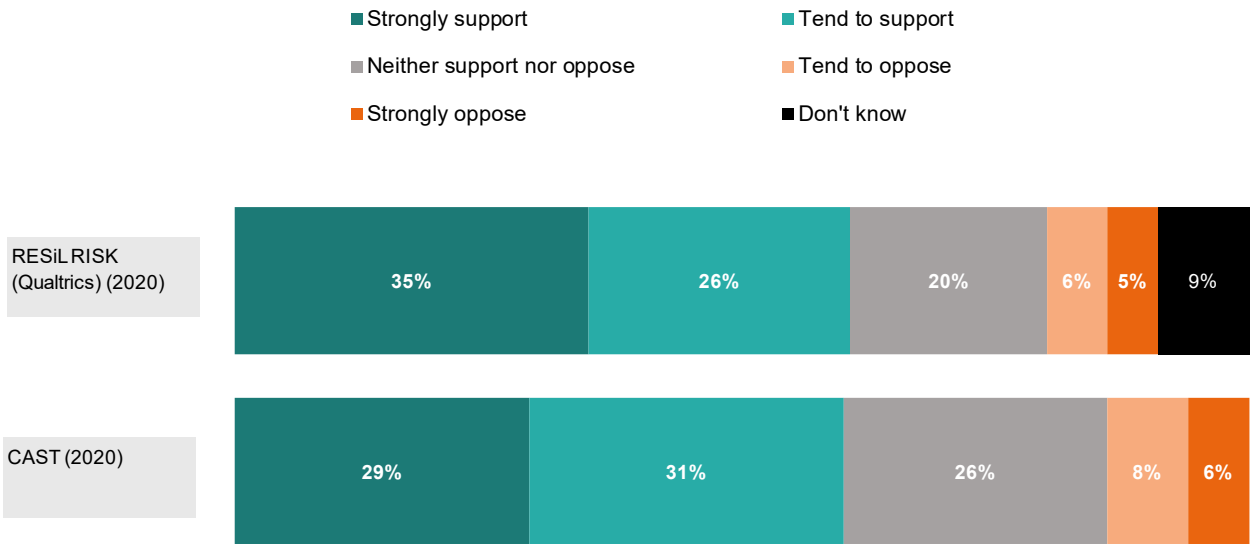
[62] Understanding Risk Research Group, 2020. http://orca.cf.ac.uk/129452/1/resilrisk-FINAL-ONLINE.pdf.
[63] Survation, 2019. https://www.survation.com/british-public-supportive-of-efforts-to-reduce-greenhouse-gas-emissions-new-survey-reveals/
[64] YouGov, 2019. https://yougov.co.uk/topics/politics/survey-results/daily/2019/06/12/b8f46/1
[65] Survation, 2019. https://www.survation.com/british-public-supportive-of-efforts-to-reduce-greenhouse-gas-emissions-new-survey-reveals/
[66] Cardiff University and Climate Outreach, 2020. http://orca.cf.ac.uk/129452/1/resilrisk-FINAL-ONLINE.pdf.
[67] Centre for Climate Change and Social Transformations, 2020 https://cast.ac.uk/wp-content/uploads/2020/01/CAST-Briefing-paper-02-Pubic-opinion-in-a-time-of-climate-emergency-min.pdf

Figure 15. Support for the declaration of a climate emergency in the UK



2.5.5 Support for policy change to address climate change

People in Scotland generally supportive of renewable energy policies. There is little data on Scottish public attitudes to policy change on other areas.

While many aspects of energy policy are reserved to the UK Government, the Scottish Government has power to help fund and approve the planning permission for major renewable energy projects. Scot LINK's 2018 research[68] found that a majority of Scots are in favour of the Scottish Government implementation of renewable energy policies. 79% feel the government should implement 'The continued development of renewable energy sources (e.g. wind, solar, hydro, wave and tidal)'. 81% support solar energy. 80% support wave and tidal energy. 76% support offshore wind energy, while 66% support onshore wind energy. 67% support biomass.

In the same research Scot LINK also found that the Scottish public are divided on whether or not the Scottish Government should implement 'building new, or extending the life of existing, fossil fuel power stations (i e coal, natural gas, oil)' with 40% for and 35% against this. They are less likely to support government implementation of fracking (32% for, 46% against) or the building of new nuclear power stations (32% for, 44% against).

This review explored UK and GB-wide attitudes to policy change in other areas namely transport, air travel, recycling and circular economy principles. However, there was no Scotland-specific data available on these topics. This therefore represents an evidence gap.

2.5.6 Subgroup differences

Gender
In Scotland, women seem significantly more likely to answer 'don't know' when questioned about policy or system change, with often around twice the proportion of women answering 'don't know' to these questions, vs the number of men answering 'don't know' (in research by Scottish Environment LINK[69] and in the Renewable Energy Poll prepared on behalf of

[68] Survation, 2018. https://www.survation.com/wp-content/uploads/2018/10/Final-Tables-Scottish-Renewables.pdf.
[69] Survation, 2019. https://www.fightforscotlandsnature.scot/wp/wp-content/uploads/2019/09/Scot-Link-final-tables-pdf.pdf

Scottish Renewables by Survation[70]).This may suggest that work needs to be done to ensure women are being represented and included in these debates in Scotland.
Age
Support for 'Scotland taking greater action over the next few years across sectors such as transport, food and home heating, to prevent climate change' was strongest amongst those in younger age brackets, at 80% of 18-24 year-olds, compared with 62% of those aged 65+.
Socioeconomic status
Support for 'Scotland taking greater action over the next few years across sectors such as transport, food and home heating, to prevent climate change' was also greater amongst those in higher social grades (74% of ABC1s vs 65% of C2DEs).[71]

Key findings

The Scottish and British publics clearly believe that governments should be showing leadership for tackling climate change, and that they should be taking the kinds of actions that would result in systemic change.

The British public generally feel that there is more that could be done to tackle climate change. There is overall support in Scotland and the rest of the UK for net zero emissions targets. Many have concerns about whether targets will be reached, however, a sizeable proportion in Scotland feel targets could be more ambitious.

There is strong 'in principle' support for system and infrastructure changes to promote and enable behaviour change.

Some work needs to be done to ensure that a fuller understanding of people's desire for systemic change can be reached. At present, women do not seem to be as included and engaged as men are. The evidence also suggests that young people do not feel their views are being listened to by those in positions of power.

2.6 Conclusion

The evidence reviewed for this study provides a clear picture of several aspects of Scottish public attitudes towards climate change. There is robust data showing the Scottish public's awareness of climate change and its causes, and levels of concern about climate change. This includes trend data showing the change in views over time. Other topics, however, have more limited or no Scotland-specific data available, namely: views on the impacts of climate change; willingness to take action or do more on climate change; and support for policies that might have an impact on climate change.

Where there is a lack of Scotland-level data, the evidence from UK or GB-wide surveys can still be useful, as the Scotland data is often similar to the rest of the UK. However, it should be noted that some of the data sources have relatively small sample sizes or Scotland; these tend to be around 100 respondents but in some cases are less than this. To fully understand the

[70] Survation, 2018. https://www.survation.com/wp-content/uploads/2018/10/Final-Tables-Scottish-Renewables.pdf.
[71] YouGov, 2019. https://d25d2506sfb94s.cloudfront.net/cumulus_uploads/document/sfjpv6qc2w/StopClimateChaosResults_190325_Scotland_W.pdf

Scottish public's views, there may therefore be merit in further Scotland-specific research on those areas where existing knowledge is based on UK or GB-wide surveys.

The vast majority studies included in the review took place prior to the COVID-19 pandemic[72]. Two of the surveys[73] included in this review were carried out during the COVID-19 pandemic. As these were conducted during a time of crisis and transition, it is too soon to say whether the findings accurately reflect the attitudes and behaviours of the public in a post-COVID-19 world. This review also does not have enough data to make comparisons on public attitudes to climate change before and after COVID-19. However, while we deal with the Covid-19 crisis, climate change remains a serious issue for the public: 63% of Scots say that in the long term, climate change is as serious a crisis as Covid-19 is[74].

Turning to what the data tells us about public attitudes, the main findings relating to awareness, levels of concern, and impacts of climate change are summarised below:

- The evidence suggests that **most people in Scotland believe that climate change is happening**. Most Scots also agree that climate change is an immediate and urgent issue, and the proportion who believe this has grown over time.
- **A majority of Scots believe human activity has been a factor in the causes of climate change**. While most in Britain overall also believe this, Scots are more likely to say this is the case than people in England and Wales.
- Like the UK public overall, **the Scottish public have high levels of concern about climate change**, with most saying it worries them. The available evidence suggests that levels of concern about climate change have increased in recent years.
- **Most agree that we are already feeling the effects of climate change** and people tend to associate these impacts with the weather. There is a lack of data, however, on attitudes to weather-related impacts specific to Scotland and the extent to which these differ from other parts of the UK.
- **People tend not to see themselves as personally at risk of climate change impacts**, such as flooding or heat stress, although they may on a broader scale expect climate change to affect their life.

Acknowledging that there are some evidence gaps relating to Scotland-specific data, the main findings on behaviour change and support for system change are summarised below:

- There is **high 'in principle' willingness to take action or do more on climate change.** Many people feel they 'could do more' although some feel they are already doing as much as they can.
- Adoption of high-impact, high investment behaviours such as renewable heat is very low at present, though interest and willingness exist.
- **Many of the UK public are already taking action to combat climate change**. People are often motivated to change for other reasons rather than climate change impacts, such as health, wellbeing, finance and convenience.
- The **Scottish public clearly believe that governments should be showing leadership for tackling climate change**, and that they should be taking the kinds of actions that would result in systemic change.

[72] The 16th March has been used as a cut-off date to determine which studies we consider taking place at a time that COVID-19 was likely to have materially changed the views of the public.
[73] The BEIS Public Attitudes Tracker (March 2020) and the Scottish Government survey on Public Attitudes to Coronavirus (May 2020).
[74] Scottish Government, 2020. https://www.gov.scot/publications/public-attitudes-coronavirus-summary/pages/10/

- The Scottish public generally feel that **more could be done to tackle climate change** and support climate targets and agreements. Many have concerns about whether targets will be reached, however, and some believe targets should be more ambitious.

The data also show that attitudes towards some aspects of climate change differ by age, social grade and gender. Young people and those in higher social grades are more likely (than older people and lower social grades) to believe climate change is happening and caused by human activity, and to attribute recent extreme weather conditions to climate change. Younger people also showed greater support for Scotland taking greater action at a cross-sectoral level to address climate change. At present, women do not seem to be as included and engaged as men are. The evidence also suggests that young people do not feel their views are being listened to by those in positions of power.

The difference in views may have implications for future approaches to engaging with different groups. Rather than a uniform approach, there may be merit in tailoring public engagement activities to different age groups and social grades in recognition of their different 'starting points' in terms of these attitudes to climate change. More work also needs to be done to ensure that a fuller understanding of people's desire for systemic change can be reached, including the voices of women and young people, who may feel less engaged. Approaches to engaging the public on climate change are explored in detail in the following chapter.

3 Engaging the public on climate change

3.1 Introduction

This chapter presents findings from the second strand of the research, with the aim to "identify and review recent approaches to engaging the public on climate change to understand effectiveness, limitations and applicability in different contexts." It categories and describes the key features of public engagement approaches, their strengths and weaknesses, and their potential application for future public engagement on climate change.

In assessing different approaches, we have drawn on a number of existing frameworks and models that provide guidance and promote good practice in public engagement. These include Involve's nine-step guide for planning public engagement activities and the Sciencewise principles of public dialogue (see Appendix B). We have also drawn on guidance on the use of specific techniques, for example Involve's draft standards for citizens' assemblies[75] which included contributions from a range of organisations specialising in public engagement.

3.2 Public engagement approaches on climate change

The review identified 25 examples of public engagement on climate change carried out within the past five years that were suitable for inclusion. These included both UK and international projects, eight of which were Scotland-specific.

The public engagement approaches identified in the review are wide ranging but can be broadly grouped into the following five categories:

- Citizens' assemblies
- Citizens' juries
- Deliberative workshops or public dialogues
- Open consultation events
- Online engagement

Each of these are summarised in turn below. More detail on the specific methodologies referenced here is provided in Appendix C.

[75] https://www.involve.org.uk/resources/knowledge-base/how-do-i-setup-citizens-assembly/standards-citizens-assemblies

1. Citizens assemblies	
What are they? [76] A citizens' assembly involves bringing together a fairly large group of citizens', selected to be broadly representative of the demographics of an area, to deliberate on an issue. A central feature is the learning component, helping participants to develop an understanding of the issue based on unbiased information. Information is usually presented through a combination of presentations from experts, written information and facilitated discussions.	**Examples** 10 citizens' assemblies related to climate change were identified, including: • Climate Assembly UK (for the UK Parliament) • The Citizens' Assembly of Scotland (for the Scottish Government) • Ireland's Citizens' Assembly (for the Oireachtas, the legislature of Ireland) • Citizens' Assemblies on climate for Oxford City Council, Camden Council, and Greater Cambridge Partnership • Convention Citoyenne pour le Climat (Citizens' Convention on Climate commissioned by the French President). • Upcoming citizens' assemblies on climate change in Brighton & Hove and Devon

2. Citizens juries	
What are they? Similar to a judicial jury, a citizens' jury brings a small representative group of citizens together to hear evidence, deliberate among themselves and reach a conclusion. Citizens' juries are ideally convened around a clearly framed question or set of choices.	**Examples** 6 citizens juries were identified, including: • Citizens' juries on climate change in Leeds (Leeds Climate Commission), Lancaster (Lancaster City Council), Cardiff and Penrith (Green Alliance) • Citizen's juries on onshore windfarms (ClimateXChange) • Citizens' juries to test views on carbon capture and storage in Scotland (University of Cambridge) • A citizens' jury on consumer participation in energy policy in Scotland (Citizens Advice Scotland)

[76] Description on this and other methods are taken from Involve's outline of public participation methods at https://www.involve.org.uk/resources/methods

3. Deliberative workshops and public dialogues	
What are they? Most examples identified in the review were deliberative workshops. These are group discussions that provide participants with the opportunity to consider an issue in depth, challenge each other's opinions and develop their views/arguments to reach an informed position. Other related approaches identified in the review included "structured dialogues", "distributed dialogues" and "narrative workshops". While these each have distinct features, they also share many similarities with deliberative workshops.	**Examples** 7 projects used workshops or dialogues including: • The Big Climate Conversation (the Scottish Government) • DEFRA workshops on citizen engagement with the environment • Structured dialogues on consumer participation in energy and water policy (Citizens Advice Scotland) • Deliberative workshops for the Infrastructure Commission for Scotland and the National Infrastructure Commission

4. Open consultation events	
What are they? Public events designed to consult or engage with members of a geographic community on a particular issue. They are "open invitation" meaning any member of the community can attend.	**Examples** 2 open consultation events on the topic of climate change were reviewed: • The Big Climate Conversation, which used 'open invite' workshops in eight locations across Scotland • Consultation on East Lothian Council's Climate Change Strategy, involving public 'drop in' events.

5. Online engagement[77]	
What are they? Participants' views are gathered via online platforms, website, email or social media. Online engagement can either be used as a standalone engagement approach or delivered as part of a mixed method project alongside offline, face-to-face engagement.	**Examples** • The Big Climate Conversation, which had a digital engagement strand • Online consultation on East Lothian Council's Climate Change Strategy • Online platforms used by members of the Convention Citoyenne pour le Climat • Climate Neural Now, a global web-based initiative

[77] Note these refer to the projects identified in the review where online engagement was an original aspect of the engagement approach as distinct from face-to-face engagements. It does not include those projects that had moved face-to-face engagement online as a result of coronavirus (e.g. Climate Assembly UK or the Citizens Convention on Climate Change in France). See section 3.4.5 for more detail on these.

Most of the approaches identified in the review (specifically citizens' assemblies, citizens' juries, workshops and dialogues) were deliberative in nature.

Deliberation is an approach to decision-making that allows participants to consider relevant information, discuss the issues and options and develop their thinking together before coming to a view[78]. Deliberative public engagement therefore differs from some other forms of engagement in that it is about giving participants time to consider and discuss an issue in depth before they come to a considered view. When exploring the strengths and weaknesses of various approaches, the role of deliberation is therefore relevant to a number of the methods reviewed.

3.3 Framing the topic of climate change

The topic of climate change has been framed and presented to the public in different ways. These range from fairly wide-reaching explorations of how a country or city can meet its climate change targets, to more contained discussions focussing only on specific topics related to climate change such as energy or transport.

Recent citizens' assemblies explored climate change in the context of national-level net-zero emission targets. Climate Assembly UK's[79] stated aim was to *"make recommendations about what the UK should do to become net zero by 2050".* The mandate for the Convention on Climate Change in France[80] was to "*define a series of measures that will allow to achieve a reduction of at least 40% in greenhouse gas emissions by 2030 (compared to 1990) in a spirit of social justice."* At a more localised level, the Oxford Citizens Assembly[81] was faced with a similar question: *"The UK has legislation to reach 'net zero' by 2050. Should Oxford be more proactive and seek to achieve 'net zero' sooner than 2050?".* Citizens' assemblies on climate change shared a somewhat aspirational element which was reflected in the wording used in their aim. For example Ireland's Citizens' Assembly[82] and Oxford's Citizens Assembly both set the target of being a "leader" on climate change and net zero respectively. The French example refers to a reduction of "at least" 40% in emissions, presumably allowing for recommendations for this target to be exceeded.

Some citizens' juries had a similarly wide-reaching focus, framed around questions on how best to address or respond to climate change at a local or national level. For example, in Leeds[83] they explored the question. *"What should Leeds do about the emergency of climate change?"*, while in Cardiff and Penrith[84] they explored the UK's overall strategy for climate change. Other citizens' juries had a somewhat narrower focus, for example exploring views on issues related to climate change such as windfarms, home energy efficiency and carbon capture and storage. However, a common feature of these projects, and a distinguishing feature of any citizens' jury, was that the topic was framed around a single question on which jurors were asked to reach a conclusion.

The topics covered by other approaches identified in the review were a mixture of higher level discussions around public priorities for the environment (e.g. in DEFRA's public engagement programme[85]) and climate change (e.g. in the Scottish Government's Big Climate

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[78] Adapted from the Deliberative Democracy Consortium as cited in https://www.involve.org.uk/sites/default/files/uploads/Deliberative-public-engagement-nine-principles_0.pdf
[79] https://www.climateassembly.uk/about/
[80] https://www.conventioncitoyennepourleclimat.fr/en/
[81] https://www.oxford.gov.uk/news/article/1257/oxford_citizens_assembly_on_climate_change_report_published
[82] https://www.citizensassembly.ie/en/
[83] https://www.leedsclimate.org.uk/leeds-climate-change-citizens-jury
[84] https://www.green-alliance.org.uk/resources/power_to_the_people.pdf
[85] http://natcen.ac.uk/our-research/research/citizen-engagement-on-the-environment/

Conversation[86]), to more specific topics such as infrastructure priorities (for Infrastructure Commission for Scotland[87]) and energy efficiency (Citizens Advice Scotland[88]). The choice of topic and wording reflected the specific aims and purpose of each exercise.

While the topic has been framed in different ways, this evidence review highlighted three key considerations for future public engagement:

Firstly, **ensuring the scope and purpose of the engagement is clearly articulated and understood by all.** Involve's nine-step guidance for public engagement[89] states that *"establishing a clear purpose and getting agreement on it … is the single most important stage of any engagement process…[the] purpose must be easy to understand and an accurate reflection of what is going to happen."* Similarly, in its guide to using citizens' assemblies and citizens' juries on climate change[90], Shared Futures stresses the importance of framing the engagement around a question that is both carefully worded and easy to understand. Stakeholders interviewed for this review echoed this point. A common theme from stakeholders was the importance of clear and unambiguous wording to describe the question(s) the public are being asked to answer. The Committee on Climate Change, for example, emphasised the importance of "keeping it simple" in terms of the way the topic is framed and the questions are asked, including describing the topic in a way that relates to people's everyday lives.

Secondly, **when defining the scope of the engagement it is important to decide whether or not the existence of climate change itself is up for debate.** This point was raised by stakeholders when reflecting on their experience of previous engagement approaches. Those involved with Ireland's Citizens' Assembly, for example, said the wording used to describe the Assembly's purpose *("how to make Ireland a leader on climate change")* was deliberately framed around an acceptance that climate change was happening, to avoid debate on this point. This can also have a bearing on how members of the public are chosen. Those who delivered the Oxford Citizens Assembly did not ask about belief in climate change at the recruitment stage, as they felt that to actively seek out these views may risk disproportionally skewing the results because the proportion of climate change sceptics is so small. For DEFRA's programme of public engagement on climate change, however, the decision was taken to exclude those who disputed climate change at the recruitment stage, as it was felt that their views would distract from, rather than add, to the topic being discussed. The extent to which that approach is appropriate will depend on each individual project.

Finally, **it is important to match the method of engagement with the topic itself**. A common theme from the literature and the stakeholder interviews is that climate change can be a complex and potentially polarising topic to engage the public on. Both the literature and stakeholders noted that climate change is therefore well suited to deliberative forms of engagement, specifically citizens' assemblies, citizens' juries and deliberative workshops. The stakeholders involved with the DEFRA programme of public engagement, the Oxford Citizens Assembly, and the citizens' juries in Wales all stressed the value of deliberative approaches as they allow sufficient time for participants to learn about, reflect on, and reach informed decisions about the issues. As one stakeholder put it, deliberative approaches help to bring everyone on the same "learning journey", meaning they are at a similar starting point when then asked to discuss their own views on the topic.

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[86] https://www.gov.scot/publications/report-findings-big-climate-conversation/
[87] https://infrastructurecommission.scot/page/key-findings-report
[88] https://www.cas.org.uk/system/files/publications/consumer_participation_in_energy_policy_-_ipsos_mori-involve_technical_report.pdf
[89] http://www.sharedpractice.org.uk/Downloads/involve_publication.pdf
[90] https://sharedfuturecic.org.uk/citizens-assemblies-citizens-juries-and-climate-change/

KEY FINDINGS:

As climate change is a complex topic, it lends itself to deliberative engagement (e.g. citizens' assemblies, citizens' juries, deliberative workshops) which provides the opportunity for learning and deliberation to help participants reach an informed conclusion.

The topic of climate change can be framed in a number of ways depending on the overall scope and purposes of the public engagement.

Regardless of the approach used, it is important that the topic is framed in a clear and unambiguous way, making clear what the public are being expected to do.

To get the most from the public engagement, the starting point should be a common acceptance that climate change is happening (unless the purpose of the engagement is specifically to debate that point).

3.4 Delivering public engagement on climate change

There are a number of key stages involved in the public engagement approaches identified in the review. These key stages are outlined in turn below along with their lessons for future public engagement on climate change.

3.4.1 Recruiting participants

A key stage in any public engagement exercise is identifying the right group of people to participate.

The main approaches used to recruit participants for public engagement on climate change fall into four main groups:

1. Sortition (also known as "civic lottery"). This has been used for a number of citizens' assemblies and citizens' juries, such as Climate Assembly UK and assemblies in Cambridge and Camden. The first stage typically involves invites being sent to a large number of households, usually in writing (though for the Convention on Climate Change in France the initial contact was made by telephone). Of those members of the public that respond to the initial invite, participants are then selected using random stratified sampling (typically using computer software), with quotas set on key criteria to match the profile of the population (e.g. on age, gender, working status).

Sortition has been used in the largest, highest profile citizens' assemblies where there is a focus on participants being representative of the population. Of the main approaches identified, sortition involves making contact with the largest number of people (e.g.255,000 for the Convention on Climate Change in France, 30,000 for Climate Assembly UK). This scale of contact means that Sortition is described by the Sortition Foundation[91] as a way of *"making it fair for everyone"* as it means *"everyone should, ideally, have an equal chance of being selected".* Indeed, the draft set of standards for citizens' assemblies[92] recommends sortition as the ideal method for selecting citizens' to take part. However, the process takes time and is more resource intensive than other approaches.

2. Free-find recruitment. This has been used across a range of different methods, such as citizens' assemblies in Ireland and Scotland, citizens' juries delivered by Ipsos MORI for University of Cambridge and Citizens Advice Scotland (CAS), and public engagement workshops delivered for DEFRA. The exact approach can vary, but it is generally conducted face-to-face and involves a recruiter (employed by an independent research or fieldwork

[91] https://www.sortitionfoundation.org/what_is_sortition
[92] https://www.involve.org.uk/resources/blog/news/when-citizens-assembly-not-citizens-assembly-towards-some-standards

agency) going door-to-door or in street to invite people to participate. Screening questionnaires are used to assess key criteria, and quotas are set so that the sample matches the profile of the population.

Free-find methods offer the advantage of being able to target specific geographic areas and purposefully recruit individuals that match the desired criteria. When carried out face-to-face, the interaction with a participant means the recruiter can explain how the process works and any answer questions the participant might have. Reflecting on the approach used for Ireland's Citizens' Assembly, the commissioning body felt that face-to-face free-find recruitment was the best approach as they felt it helped ensure as much certainty as possible in terms of commitment from participants. It can, however, be time consuming and resource intensive.

3. Recruitment targeted at specific groups. For example, targeted workshops for the Big Climate Conversation were designed to encourage participation from young people and from people with limited prior engagement in conversations about climate change. These events were advertised widely and then those that registered an interest completed a short screening questionnaire online to identify participants that matched the target criteria. Targeted recruitment offers the advantage of hearing from voices that might normally be under-represented in other forms of engagement, such as the specific groups that participated in the Big Climate Conversation. However, it is not appropriate if the aim is to represent a mix of different types of people or a representative sample.

4. Open-invitation approaches. These events are advertised through various channels (e.g. social media, posters, leaflet drops) and anyone who is interested in participating is welcome to come along. This was one approach used by the Big Climate Conversation for its open audience workshops, and by East Lothian Council in its public consultation on its new climate change strategy. Open-invitation approaches are less resource-intensive than others and in principle offer everyone who is invited with the opportunity to participate. However, it can be difficult to guarantee how many people will respond meaning turnout can be lower than expected. There is also a risk that the same types of people tend to participate in open-invitation events, with harder to reach audiences being under-represented.

KEY FINDING:

The recruitment method should reflect the aims of the engagement exercise and whether the aim is for representativeness or for targeted inclusion of specific groups.

Where aiming for a group that is representative of the population, purposive random sampling should be used either using sortition or free find recruitment. For citizens' assemblies the ideal approach is sortition, though this requires time and resources.

3.4.2 Facilitation

Involvement of independent facilitators is standard practice in public engagement. Almost all the projects identified in the review used independent organisations with expertise in facilitation.

For example, Climate Assembly UK and the citizens' assemblies in Camden and Greater Cambridge were facilitated by Involve, the Oxford Citizens Assembly was facilitated by Ipsos MORI, and DEFRA's programme of public engagement was facilitated by NatCen. Depending on the size of the event, there was typically a lead facilitator plus a team of facilitators placed at individual tables leading smaller group discussions.

In the projects where participant evaluation was available, feedback on facilitation was typically very positive. For example, participant feedback forms showed high levels of satisfaction with the facilitation of the Citizens' Assembly of Scotland (which is ongoing), Oxford's Citizens Assembly, and of the citizens' jury and deliberative workshops for Citizens Advice Scotland. Each of these used independent agencies to design and facilitate the engagement activities.

The draft standards for citizens' assemblies recommends that it is essential that they are independently and impartially facilitated, and if possible run by an organisation at arms-length from the commissioning body. In its guidance on citizens' assemblies and citizens' juries on climate change, Shared Futures noted that facilitators should *"ensure the process is not dominated by a vocal few and that everyone is able to have a fair say"*[93].

Stakeholders also highlighted the importance of facilitation as a means of communicating the potentially complex topic of climate change. The Committee on Climate Change noted that climate change can be a technical topic but that facilitation that uses "simple storytelling" and "simple narratives" helps to engage people. They also noted that the topic can be made more relatable to people by describing it in ways that are relevant to their daily lives, for example the way they heat their home, the way they travel or the food that they eat. Creative Carbon Scotland felt that facilitation using art and music can help to convey the topic of climate change in more relatable and engaging ways. An example of this was a project in Aberdeen which involved mini arts festivals to engage communities on the topic of climate change, with one facilitator using traditional songs and nursery rhymes to tell the story of climate change using local, everyday language[94].

In her reflections on Ireland's Citizens' Assembly[95], its Chair stressed the importance of facilitation to the success of the engagement, but also recommended that organisers of future citizens' assemblies should explicitly reserve the right to make changes to the facilitation as required, to allow the process to be adapted in line with feedback from participants and observer.

KEY FINDINGS:

Facilitation should be carried out by experienced, impartial facilitators with experience in public engagement.

Facilitation should aim to communicate the topic of climate change in a simple and engaging way. Creative approaches to facilitation can add value to the engagement process.

Ideally feedback on facilitation should be gathered from participants, and enough time and flexibility built in to allow changes to be made to the facilitation approach.

3.4.3 Role of experts

Involvement of experts and specialists was a key feature of citizens' assemblies and citizens' juries on climate change.

For citizens' assemblies, the role of experts was to provide participants with information about the topic they were being asked to deliberate on. Often the process started with broader, more general information at first before progressing to more specific topics later. For example, at the first meeting of Climate Assembly UK, participants heard from experts on what climate change was, the effects of climate change, and why tackling it has proved difficult. On the second weekend the experts spoke about more specific aspects of climate change including energy, transport use, and food production. Citizens' assemblies on climate change have involved a large number of experts; the first session of the Citizens Convention on Climate Change in France heard evidence from 10 experts, and on day one at Oxford Citizens Assembly participants heard presentations from 10 speakers and from two panels of experts.

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[93] https://sharedfuturecic.org.uk/citizens-assemblies-citizens-juries-and-climate-change/
[94] https://www.creativecarbonscotland.com/project/adaptation-cultural-sector/arts-climate-adaptation/
[95] https://2016-2018.citizensassembly.ie/en/Manner-in-which-referenda-are-held/Final-Report-on-the-Manner-in-Which-Referenda-are-Held-and-Fixed-Term-Parliaments/Final-Report-on-Manner-in-which-Referenda-are-Held-Fixed-Term-Parliaments.pdf

Experts are also a key feature of citizens' juries. Outside experts help members of a citizens' jury in their deliberations by presenting information and then being questioned by jurors. These presentations can be framed in terms of arguments "for" and "against", or to present different solutions to a problem. For example, in the citizens' jury on energy policy for Citizens Advice Scotland, experts presented arguments for different ways in which homeowners might be encouraged to be more energy efficient. Involve recommends that the experts involved should be *"neutral' experts, stakeholders and advocates representing all sides, so that the jury can receive a balanced and complete picture of the issue"*[96].

Reflecting on their experience of public engagement activities, stakeholders recommended taking the following into account when involving experts:

- Be clear on what their role is, the type of information they should provide, and the level of detail expected of them.
- Allow plenty of time for identifying which experts are required and securing their involvement.
- Involve experts that are specialists in climate change, but that are also able to communicate complex topics in a clear and engaging way, avoiding overly technical language.
- Provide experts with a clear brief outlining their role and what is expected of them.
- Those overseeing the process (e.g. a steering group or advisory group) should ask for an outline of experts' presentations in advance, and review this to ensure it covers the type of information it should at the level expected.

KEY FINDINGS:

Involvement of experts is a key aspect of deliberative public engagement, particularly in citizens' assemblies and citizens' juries. They help to provide participants with the information needed to reach informed decisions on the issue in question.

The use of experts should be carefully planned, with sufficient time built in to identify and involve the individuals required.

The planning process should allow time for briefing experts and reviewing the content they will be presenting in advance.

Experts should strike a balance between communicating on their specialist subject with authority and doing so in a way that is clear and understandable for the public.

3.4.4 Other practical considerations

Engaging the public on climate change raises other practical considerations aside from those outlined above. These include the duration of the engagement, the number of participants involved, and the incentives offered to participants.

The table below summarises details of these practical considerations for the main types of public engagement on climate change identified in the review. Note that this is based only on the projects reviewed and that these considerations will be influenced by a range of factors including the overall aims, the timescales allowed and the resources available.

Table 2: Duration of the engagement, number of participants and incentives offered

	Duration	Number of participants	Incentives

[96] https://www.involve.org.uk/resources/methods/citizens-jury

Citizens' assemblies	Range from 1 weekend to 7 weekend sessions (with most meeting at least 2 weekends, over Saturday and Sunday.)	Range from 41 to 150 (with most having at least 50).	Between £75-100 per day (£150-£200 per weekend) plus coverage for travel, meals and accommodation
Citizens' juries	Range from 1 meeting of 7 hours, to 8 separate meetings of 2.5 hour session. Most are reconvened, meeting at least twice.	Range from 14 to 30.	Equivalent of between £50-100 per day
Deliberative workshops and public dialogues	Single meetings, ranging from 3 hours to 7 hours	Range from 14 to 50	Equivalent of £50-60 per day (though not always specified)
Open invitation events	Single meetings, lasting 2-3 hours	20-50 per event (where specified)	No incentives specified
Online engagement[97]	Varies from engagement over a set time (e.g. 2 hour session) to ongoing engagement via web forums and social media	Not specified	No incentives specified

While the design of these element will vary, learnings from these projects suggest the following factors should be taken into consideration

- **Duration**: It is important to strike a balance between having enough time to explore the issue in the detail required, without over-burdening participants. Ipsos MORI and Involve suggest that the more time allowed for learning, dialogue and deliberation within a research project, the greater the impact the process is likely to have[98]. Citizens' assemblies tend to be the longest time commitments, which may reflect their generally wider scope and their larger size. Draft standards for citizens' assemblies state that they should be at least 4 days (30 hours) and ideally up to 6 days (45 hours). However, it is worth noting that organisers of Ireland's Citizens' Assembly recommended that commitment of no longer than 6 months overall be sought, otherwise there is a risk of

[97] Note these refer to the project identified in the review where online engagement was an original aspect of the engagement approach as distinct from face-to-face engagements. It does not include those projects that had moved face-to-face engagement online as a result of coronavirus

[98] https://www.cas.org.uk/system/files/publications/meta-analysis_and_scoping_exercise_into_public_participation_in_the_regulated_industries_ipsos_mori_involve_-_2017-10-12.pdf

drop out and that certain groups may find it harder to commit then others (e.g. those that work weekends and evenings).

- **Number of participants:** The target number of participants will depend on the approach and what is trying to be achieved, and the ranges outlined in table 2 reflect the target numbers that are generally recommended for each. Involve recommend that citizens' assemblies are at least 40 people but ideally 100 or more, and that citizens' juries be around 12 to 24 people.
- **Incentive:** Incentives of some form were used in nearly all the projects reviewed and in all of the face-to-face deliberative forms of engagement. Again, there is no exact rule on how much incentive should be paid; the ranges shown in table 2 give an indication of the industry standard approaches that should be followed.

KEY FINDINGS:

The duration of engagement, number of participants involved and incentive offered will be influenced by a range of factors including the overall aims, the timescales allowed and the resources available.

When deciding on these aspects of the engagement process, reference should be made to best practice guidelines and comparison with industry-standard approaches.

3.4.5 Delivering public engagement online

Since this evidence review first started, the delivery of some public engagement projects has changed in light of the coronavirus outbreak. At the time of writing, lockdown restrictions are still in place in Scotland, preventing the delivery of most face-to-face public engagement exercises. Here we focus on lessons that can be learned from face-to-face approaches that have moved online, with a specific focus on two examples.

Climate Assembly UK was meant to meet over four weekends in Birmingham between late January and late March 2020. The first three weekends took place as planned, but the fourth meeting was moved online in response to the coronavirus outbreak. In their reflections on this move[99], Involve note that no other citizens assembly in the UK had ever taken place online. They highlight the following key lessons:

- making sure the technology allowed everyone to take part, including testing participants internet connection and doing test runs to make sure people could join in advance;
- making sessions shorter and spreading them out over periods (e.g. instead of two full day sessions over one weekend, having three half-day sessions over three weeks);
- simplifying the structure of the discussion to complement the shorter, online format; and
- ensuring additional safeguards for participants, including ensuring the security settings of the online platform are adequate, ensuring participants are able to conceal their personal contact details if required, and how to avoid having children or other family members shown on video without consent.

The sixth session of the Citizens Convention on Climate Change in France was also conducted online in light of the pandemic. In the online meeting, it shifted the focus of the discussion to the coronavirus crisis itself and the best way out of the crisis in the context of climate change. This resulted in the early sharing of 50 of its recommendations with the French government in order to help respond to the crisis.[100] Similarly, the interim briefing report from the final weekend of

[99] https://www.involve.org.uk/resources/blog/project-update/how-we-moved-climate-assembly-uk-online
[100] https://www.conventioncitoyennepourleclimat.fr/wp-content/uploads/2020/04/Press-release-Contribution-of-the-CCC-for-a-way-out-of-the-crisis.pdf

the Climate Assembly UK focussed on the impacts of COVID-19 on reaching net zero targets.[101]

As part of our own response to the coronavirus outbreak, Ipsos MORI has examined the relative merits of a range of alternatives to face-to-face engagements, including online deliberation as an alternative to citizens' assemblies or citizens' juries. Online deliberation offers a number of benefits as a way of engaging and involving the public in democratic decision making, namely:

- significant cost savings, without the need to travel, or pay out for other high costs such as venues, hotels and catering;
- an opportunity to bring people from different geographies together, in a more environmentally friendly way (i.e. less printing, reduced carbon footprint from travel);
- facilitates a wider range of experts being involved, including international contributions;
- people can be taken through the process slowly via a series of shorter sessions (e.g. 2-3 hours);
- potentially more accessible for those uncomfortable or unable to attend larger full-day events (people with mental and physical health challenges, those with caring responsibilities); and
- develops policy recommendations or interventions that can be observed by decision makers to create real buy-in.

While they offer a number of benefits, online deliberations also have a number of key considerations that should be borne in mind, namely:

- deciding the optimum number of participants, including how to manage smaller break out groups, as too many people may alienate participants, and a maximum of 50 may be most appropriate;
- choosing an online platform which works for participants, and whether the option to join by phone is necessary;
- participants may require assistance in learning how to use online platforms;
- deciding how long the learning phase should be – ideally this would be spread across multiple 2-3 hour sessions; and
- the need to adjust the approach for people with visual impairments and literacy challenges.

3.5 Impact of public engagement

This section considers the evidence available on what the impact of public engagement on climate change has been. One of the aims of the review was to examine the outcomes and evidence of impact from recent public engagement activities. However, outcomes and impacts can take a long time to be realised, often beyond the timeframe of a standalone public engagement exercise. We have therefore focussed on the shorter term instead. Firstly, we look at the *outputs* from the engagement activity – in other words the development of conclusions or recommendations relative to the issue or question that participants were asked to consider. Secondly, we look at the *outcomes* where there is evidence of this - in other words the decisions or actions that were taken as a result of the engagement process.

3.5.1 Outputs

Each of the examples of public engagement have generated outputs that link with their stated aims and objectives.

[101] https://clicca-production.s3.amazonaws.com/media/documents/COVID_19_and_recovery_FINAL_w_links_003.pdf

Citizens' assemblies on climate change have produced wide reaching recommendations that, if implemented, would have impacts on various parts of society. For example, Oxford Citizens Assembly developed a set of recommendations on how the city could achieve its net zero ambitions. Camden Citizens' Assembly, meanwhile, developed 17 actions that should be taken by residents, community groups, businesses and the council to help tackle the climate crisis.

Citizens' juries, deliberative workshops and other examples have produced outputs that respond to the specific issue they have been asked to consider. For example, the CAS citizens' jury and structured dialogue developed recommendations on how best to encourage energy efficient behaviour, while the deliberative workshops carried out for the Infrastructure Commission for Scotland set out public priorities related to infrastructure including designing for a zero-carbon future. Both these projects also delivered outcomes from a policy perspective (as detailed below).

3.5.2 Outcomes

The longer term outcomes from public engagement examples are more difficult to identify. For several projects included in this review, it is too soon to say what the outcomes will be because they are still ongoing at the time of writing (e.g. Climate Assembly UK, Scotland's Citizens' Assembly and the French Convention on Climate Change are all ongoing). However, there are some examples of policy decisions being taken as a direct result of public engagement. Following Ireland's Citizens' Assembly on climate change in October 2017, a government committee was set up to discuss its findings which directly led to the development of the Climate Action Plan. In Oxford, in direct response to the Citizens Assembly's recommendations, the Council announced that they would set a Climate Emergency Budget, hold a Zero Carbon Oxford summit, and establish a Zero Carbon Oxford Partnership and influence partners to do more.

Outcomes have also been achieved as a result of citizens' juries and deliberative workshops. Findings from the citizens' jury and workshops on energy efficiency were used by CAS in its campaigning work, were cited by MSPs in policy debates, and resulted in a change to the Scottish Governments Energy Strategy to include reference to the importance of public deliberation. Finding from deliberative workshops for the Infrastructure Commission for Scotland helped to inform a report by the Commission setting out a set of recommendations for the future of infrastructure in Scotland, including priorities for reaching net-zero carbon targets.

Reflecting on their respective citizens' assemblies, stakeholders involved in Ireland and Oxford both stressed the importance of having a direct link between the public engagement exercise and decision makers in local or national government. In the case of Ireland that link was in place from the beginning, as the citizens' assembly was established and mandated by the national government (its terms of reference were approved by both Houses of the Oireachtas, the legislature of Ireland). Other assemblies also had links to legislative bodies: the Climate Assembly UK was commissioned by the UK Parliament while the Citizens Convention on Climate Change was initiated by the President of France. In Oxford, the assembly was commissioned by the Council as part of its commitment to tackling climate change so, again, the link back to decision makers was there from the beginning. The importance of this connection was also voiced by the Green Alliance who, reflecting on the citizens' juries in Wales, recommended that future public engagement on climate change should have a requirement for a formal response built into its design.

In terms of the longer term outcomes for participants themselves, the evidence on this is fairly limited. While some projects include findings from participants' evaluation feedback forms and others have videos or blogs from participants on their website (e.g. Scotland's Citizens' Assembly), these tend to focus on views on the process itself rather than how participants' behaviour has changed. Stakeholders involved in the delivery of public engagement suggested that, if behaviour change is one of the objectives, this should be built into the design of the engagement. For example, this could be done by asking participants to keep a diary about how they use transport, energy or food, or by including a longitudinal element, whereby the same

cohort of participants are followed up at a later date to explore any changes in their behaviour. These types of approaches were not apparent in the projects reviewed.

KEY FINDINGS:

Where public engagement has contributed to policy decisions and action, this has been partly a result of government involvement in the process from the beginning. A clear link back to government or the relevant decision-making body offers the greatest chance of affecting change of this nature.

Long term outcomes for participants are difficult to measure within a one-off public engagement exercise. Where capturing this is one of the aims, it should be built into the design of the engagement approach.

3.6 Innovative approaches to public engagement

This review has mainly concentrated on the five broad types of public engagement used recently to explore the topic of climate change. However, it is also worth reflecting on some of the more innovative approaches to public engagement, including those used in other sectors, which may offer lessons for future engagement with the public on climate change.

Nesta promotes innovation across a broad range of sectors. In its seven principles for public engagement[102] it notes the range of potential benefits that digital engagement in particular offers, from an ability to target specific audiences to allowing more timely engagement on urgent questions. They note that digital tools provide the opportunity to engage with many more people than traditional public engagement initiatives and allow data to be captured and analysed in new and interesting ways. An example of innovative approaches Nesta is exploring include the use of Artificial Intelligence (AI)[103] to help empower communities to develop solutions relating to the climate crisis.

A wide range of other digital tools have been used to engage with the public on subjects outside of climate change. For example, Ipsos MORI has recently used apps[104] to capture and understand individual behaviours on topics such as healthy eating, property rental and experience of particular services. Virtual reality and augmented reality have recently been used in the transport sector, for example by Highways England[105] to encourage road safety by commercial vehicles. Recent years have also seen the emergence of gamification in public engagement. Gamification uses elements of game design to incentivise people to take part and to engage with the topic in different ways than they might through more "traditional" approaches. Ipsos MORI has used this technique for ScienceWise and the Office of National Statistics by creating a web-based game to get people to think about data science ethics in a fun and engaging way.

Not all innovative approaches to engagement are digital. In 2019, the Academy of Medical Sciences and The Liminal Space launched The Departure Lounge[106], a project to encourage the public to talk about death and dying. By creating an immersive installation, located in Lewisham shopping centre, members of the public who entered the space were encouraged to think about what a good death might look like. Ipsos MORI conducted a series of workshops in the space to explore how different individuals and communities think and talk about death and dying.

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[102] https://www.nesta.org.uk/report/seven-principles-public-engagement-research-and-innovation-policymaking/seven-principles/#content
[103] https://www.nesta.org.uk/project/how-can-ai-enhanced-collective-intelligence-enable-new-forms-community-responses-climate-crisis/
[104] https://www.ipsos.com/en/applife
[105] https://www.gov.uk/government/news/high-tech-headgear-helps-promote-safer-driving
[106] https://www.ipsos.com/en/departure-lounge-public-attitudes-death-and-dying-great-britain

Another recent project for the Academy of Medical Sciences aimed to engage the public on the benefits and harms of medicines. The Liminal Space created a pop-up fictional pharmacy that housed a series of imaginary medicines. The medicines served as conversational aids during interviews carried out by Ipsos MORI with the public and were designed to inspire interest and deepen engagement with the research questions being asked.

Finally, and as noted earlier, art, theatre and improvisation have been used as an innovative way of engaging the public on the topic of climate change, for example through initiatives by Creative Carbon Scotland who have used artist-led approaches to communicate about and facilitate discussions on climate change[107]. Where these approaches have been used on climate change this has typically been for awareness-raising purposes, rather than engaging the public in decision-making. However, they demonstrate some of the techniques that can be used to communicate climate change to the public. Nesta has also made use of theatre as a means of engaging the public on health and care data.[108]

3.7 Conclusion

Public engagement on climate change can take many different forms, reflecting the range of different purposes it is designed to serve. This review has identified five broad types of engagement, but these are not exhaustive and no single approach emerges as the "best". Choosing the most appropriate engagement method will depend on a number of factors, including: the overall aims and objectives of the engagement, the characteristics of the population of interest, the types of information or decisions that are sought from the public, and the resource and timescale available.

This review has highlighted a number of key considerations for deciding the most appropriate approach to engaging the public on climate change. These are summarised below:

- **Climate change is a complex topic, which lends itself to deliberative forms of engagement** such as citizens' assemblies, citizens' juries and deliberative workshops. These provide the opportunity for learning and deliberation to help people understand the issues and reach an informed conclusion.
- Regardless of the approach used, **it is important that the topic is framed in a clear and unambiguous way**, making clear what the public are being expected to do.
- The **method used to recruit participants should reflect the overall aims of the engagement exercise** and whether the aim is for representativeness or for targeted inclusion of specific groups.
- Facilitation of the engagement exercise should be **carried out by experienced, impartial facilitators with expertise in public engagement.** Participants should have the opportunity to provide feedback on facilitation during the process.
- Involvement of experts is a key aspect of deliberative public engagement on climate change. **The use of experts should be carefully planned, with sufficient time built in** to identify and involve the individuals required, brief them and review the content they will be presenting in advance
- **Other practical considerations include the duration of engagement, number of participants involved and the incentive offered.** These will be influenced by a range of factors including the overall aims, the timescales allowed and the resources available. When deciding on these aspects of the engagement process, reference should be made to best practice guidelines and comparison with industry-standard approaches.
- Public engagement on climate change can have real impact on policy decision making. Where this has happened, it has been partly a result of government involvement in the process from the beginning. **A clear link back to government or the relevant**

[107] https://www.creativecarbonscotland.com/
[108] https://www.nesta.org.uk/blog/data-dialogues-participatory-futures-projects-announced/

decision-making body offers the greatest chance of affecting change of this nature.

- Long term outcomes for the members of the public involved are difficult to measure within a one-off public engagement exercise. Where this is one of the aims of the exercise, **mechanisms for capturing changes to participants' perceptions or behaviour should be built into the design of the engagement approach.**

In addition to these considerations, it will be important to assess which specific method is best suited to the pubic engagement exercise. While there is no single "best" approach, each of the main methods identified in this review offer strengths and limitations, as summarised in table 3 below.

Table 3.: Strengths and limitations of the public engagement approaches

	Strengths	Limitations
Citizens' assemblies	• Can directly inform policy (including net-zero policy), especially when key decision makers are involved from the outset • High profile, so can draw attention to climate change discussions and provide impetus for policy makers to respond • Learning phase and deliberation helps participants to understand the issue and reach an informed decision • Large number of participants means they can bring out diverse perspectives • Brings decision makers face-to-face with citizens to hear perspectives first hand	• Require significant time and resources • Complex process, requiring expertise in both the subject area (climate change) and public engagement. • To be most effective need buy-in from policy makers or relevant decision makers • Requires careful selection of experts to present to the assembly
Citizens' juries	• Highly focussed, so can help establish views on very specific policy-related questions • Learning phase including use of expert witnesses can help to engage public on very complex topics • Provide clear outputs linked back to specified objectives • In-depth deliberation leads to rich and nuanced evidence	• Small number of participants and shorter timescale than a citizens' assembly, therefore less scope to tackle wide-reaching topics in detail • Requires a very clear question or output specified from the beginning • Requires careful selection of experts to present to the jury
Deliberative workshops and public dialogues	• Fairly flexible approach, which can be either exploratory or very focussed in nature • Learning phase and deliberation helps participants to understand	• Where more exploratory in nature they do not always provide clear consensus, so not always appropriate to answer very specific questions

	the issue and reach an informed decision • Can help to develop new knowledge and skills among participants	• Can be relatively small number of participants so difficult to represent diverse range of views • Where experts are not involved, high quality facilitation is particularly important
Open invitation events	• If attendance is high, can reach large number of people • Having "open invite" approach, can demonstrate openness and transparency • Can help garner publicity for a project • Can help community members to build networks	• Difficult to ensure high level of attendance/participation • Without targeted recruitment, can risk lack of representation from different types of groups who may have different viewpoints • Can risk excluding participants it not held in an accessible location and at a convenient time
Online engagement [109]	• Ability to reach wide range of people – including people in remote and rural areas • Offers flexibility for participants, where there is no set date/time for involvement • Can be more cost effective than engaging through face-to-face techniques	• Only accessible to those with internet access and/or access to the online platform being used • Participants do not have the opportunity to engage with each other face-to-face as a group

[109] Note these refer to the project identified in the review where online engagement was an original aspect of the engagement approach as distinct from face-to-face engagements. It does not include those projects that had moved face-to-face engagement online as a result of the coronavirus outbreak.

4 Implications of the study

This review suggests a number of implications for the Scottish Government as it further develops its approach to public engagement on climate change. These implications, outlined below, also have relevance for other organisations who want to engage the public on environmental issues and climate change.

These implications must of course be considered in the radically changed context brought about by Covid-19. Since this evidence review began, the Covid-19 pandemic has brought about radical and rapid changes in individual-level behaviours. Factors such as working or studying from home, avoiding public transport, using private vehicles less often, changing how we shop and pursuing different leisure activities all have implications for climate change mitigation and/or adaptation. Understanding these changes is important since, as the Committee on Climate Change has pointed out, most of the action needed to meet the target of net zero emissions by 2045 will require some behavioural or societal changes. While we deal with the Covid-19 crisis, climate change remains a serious issue for the public: 63% of Scots say that in the long term, climate change is as serious a crisis as Covid-19 is[110].

1. The review underlines that most people in Scotland recognise that climate change is happening and is real, and that public concern about this issue has risen over time. **This lends weight to the Scottish Government's focus on public behaviours and public engagement** as part of its work to tackle the climate emergency, including in its new public engagement strategy on climate change.
2. **The review highlights some evidence gaps where we do not know much about Scots' views on climate change, which could benefit from further exploration.** Chief among these is that there is little Scotland-specific data on behaviour change and public willingness to change their behaviours. Levels of reported behaviour can be higher when they are not linked explicitly to climate change, as people also undertake climate-friendly behaviours for other reasons. This is a consideration to bear in mind when designing future survey questions on this topic.
3. **Another gap is the lack of tracking surveys that would enable measurement of how Scots' behaviours are changing over time**, although the Scottish Household Survey has provided important data on how attitudes to climate change have shifted over time**.** This evidence gap is particularly important given the extent to which climate-related behaviours appear to be changing – and are likely to change in future – in the context of the Covid-19 pandemic.
4. **Similarly, there is little Scotland-specific survey research that explicitly tests policy options relating to climate change with the public.** While the data suggests that Scots are supportive of renewable energy initiatives, there was less evidence of Scottish views on policies relating to areas such as travel, diet, recycling or the circular economy. These are areas that could benefit from further exploration at a Scotland level.
5. **Levels of concern about and personal action on climate change issues vary across different demographic groups.** Young people and those from higher socio-economic groups are more likely to be concerned and to report taking action. In the design and facilitation of public engagement it is therefore worth careful consideration of the different 'starting points' that different groups may have in terms of understanding and engagement on climate change. It is also important to think carefully about group dynamics, ensuring that certain voices do not dominate the discussion and that views are encouraged from others who may be less forthcoming. As women are less likely

[110] Scottish Government, 2020. https://www.gov.scot/publications/public-attitudes-coronavirus-summary/pages/10/

than men to provide strong opinions on policy or system change, some work needs to be done to ensure that women are represented and are encouraged to contribute to these debates.

6. **Representativeness is critical in future public engagement, but so is effective inclusion. It is important that everyone has the opportunity to have their say, not just the 'usual suspects'.** To help ensure a range of voices are heard, consideration should be given to how best to use technology and other innovative approaches. Flexible opportunities for engagement, such as shorter sessions over different days and times, should also be considered. While online and digital engagement will be the most likely approach over the coming months due to the Covid-19 crisis, it should be acknowledged that these methods are more inclusive of some groups than others. This may mean there is merit in very targeted engagement with particular groups, in addition to more representative means of engagement such as the Scotland's Climate Assembly.
7. **For effective engagement, it is important to make climate change easy to understand and relatable to the public.** This will be a key consideration in the design and facilitation of future engagement. Innovative approaches, such as those highlighted in this review, can be used to help to simplify and convey the topic in a relatable way.

Appendix A – Detailed methods

ClimateXChange, on behalf of the Scottish Government, commissioned Ipsos MORI to conduct a review and synthesis of recent evidence on public attitudes on climate change and approaches used to engage the public on climate change.

The work was split into two main strands, the first exploring public attitudes on climate change and the second exploring public engagement strategies. For both strands, the main methodology was a desk-based evidence review. However, strand two was supplemented by six expert stakeholder interviews to provide a deeper understanding of the public engagement process and outcomes.

Strand one – public attitudes

The desk research for strand one followed a systematic approach and encompassed a number of stages.

Search terms and parameters

The first stage in the desk review was to establish the search terms to be used. These were developed by Ipsos MORI using the research aims and objectives and agreed in discussion with ClimateXChange and the Scottish Government. The final search terms agreed were:

'attitudes to [climate/ net zero/ energy/ transport/ recycling/ circular economy/ low carbon/ water/ reducing emissions]' AND '[Scotland/ Britain/ UK]' OR 'public AND [climate/ net zero/ energy/ water/ transport/ recycling/ circular economy/ low carbon/ reducing emissions]' AND '[Scotland/ Britain/ UK]' OR 'survey AND [climate/ net zero/ energy/ transport/ recycling/ circular economy/ low carbon/ reducing emissions] AND '[Scotland/ Britain/ UK]' OR 'behaviours AND [climate/ net zero/ energy/ transport/ recycling/ circular economy/ low carbon/ reducing emissions/water]' AND '[Scotland/ Britain/ UK]'

In addition to the search terms there were a number of other parameters that bound the review:

- surveys must be completed in September 2018 or later[111] (past trend data could be included for surveys that were conducted within this period)
- surveys must be either Scotland or UK based (EU and global studies could be included if UK data was available)
- the cut-off date for inclusion was the end of April 2020.

Data mapping

The second stage was to conduct the search and then log the results in a detailed mapping document. Before a study was logged in the mapping document a quality assessment was made to establish whether it not it should be included. At this stage surveys were excluded if there wasn't sufficient data available; if the sample was self-selected; or the sample size was in sufficient for robust analysis.

The mapping document collected a number of details about each study including:

- Study Name
- Date of publication
- Organisation responsible for study
- Methodological details
- Topic coverage
- Subgroup analyses available.

[111] There was one exception made to this – the latest wave of the British Social Attitudes Survey was published earlier in 2018 but was included due to the quality of the data available.

Once all of the data was logged, the mapping document contained 64 studies in total.

Refining the dataset

At this stage, the dataset went through a second stage of review, in discussion with ClimateXChange and the Scottish Government, and a further 22 studies were excluded. These exclusions were made on the following basis:

- Insufficient relevance to the core topic of climate change.
- Specific single issue studies for which there were no comparators.
- Studies only focused on a single location in the UK (except if the location was Scotland).

This meant that in total 42 documents were included in the final analysis.

Analysing the data

Analysis was split across six main themes:

- Awareness of climate change
- Level of concern/level of importance of climate change
- Impacts of climate change (including weather impacts and wildlife impacts)
- Climate change and individual behaviour change (e.g. eating habits, types of travel, recycling etc.)
- Climate change and system change (e.g. low carbon policies, national travel policies, energy policies etc.)

For each theme, the relevant studies were reviewed in detail and the findings collated to form an overall narrative across the literature. This covered the overall key findings, and where appropriate subgroup and geographic differences.

Strand two – public engagement

The process for strand two broadly followed the same procedure as strand one, with the addition of six stakeholder interviews.

Search terms and parameters

The final agreed search terms for the second strand were:

'public engagement' AND '[climate/ net zero/ low carbon/ reducing emissions]' OR 'community engagement' AND '[climate/ net zero/ low carbon/ reducing emissions]' OR 'public participation' AND '[climate/ net zero/ low carbon/ reducing emissions]' OR 'Citizens' Assembly' AND '[climate/ net zero/ low carbon/ reducing emissions]' OR 'Citizens' Jury' AND '[climate/ net zero/ low carbon/ reducing emissions]' OR 'Citizens' Convention' AND '[climate/ net zero/ low carbon/ reducing emissions]' OR '[deliberative/ deliberation]' AND [climate/ net zero/ low carbon/ reducing emissions]'.

The additional parameters included were that:

- studies must be completed in the last 5 years[112]
- studies could be based on Scotland, the UK or internationally.

Data mapping

Again, the data was again assessed for quality and then inputted into the mapping document, broadly in line with the strand one procedure. However, as strand two was focused on the assessing the different approaches to public engagement rather than the results of the studies, a number of additional fields were included in the mapping document:

[112] This was later amended to include those still in progress if enough information was available about the planned methods.

- whether the studies included an evaluative component – for example, if participant feedback was gathered.
- the type, and definition, of public engagement used.

Refining the dataset

At the end of the data mapping stage, there was a total of 39 studies included in the public engagement strand. In discussion with ClimateXChange and the Scottish Government, it was decided that 7 studies would be excluded on the basis that they were either on a subject outwith the remit of the study or not enough data was available to evaluate the project.

In total, 32 studies were included in the final analysis.

Stakeholder interviews

As noted earlier, the strand two desk review was supplemented by a series of stakeholder interviews. The aim of these was to add further depth to our analysis of the how well different approaches to public engagement generate practical change and support decision-making, particularly as the evaluative information available from the desk review was limited. A long list of nine stakeholders was drawn up in agreement with ClimateXChange and the Scottish Government, with the aim of achieving six interviews.

1	Involve – to give perspectives on what works best/lessons learned from range of projects, particularly Climate Assembly UK.
2	Ipsos MORI colleagues – to discuss further details about the Oxford Citizens Assembly on Climate Change (and the upcoming Brighton and Hove Climate Assembly).
3	Representative from team who delivered Ireland's Citizens' Assembly.
4	Representative from team delivering the Citizens Convention on Climate Change (France).
5	Committee for Climate Change – to draw on their experience of engagement projects plus how they translate that into advice for government.
6	Representative from Defra – to discuss further details on their Citizen engagement on the Environment
7	Nesta – to get a sense of the novel approaches to engagement being carried out
8	Representative from the Green Alliance – to further explore their Citizens' Juries on attitudes to Climate Change
9	CAST or Climate Outreach – to discuss current thinking on public engagement methods.
10	Creative Carbon Scotland to discuss innovative engagement approaches

Stakeholders were sent an email informing them of the research and were then called by one of the research team. The interviews explored how well the methods they had used worked from their perspective, particularly as a way of engaging the public on climate change and in terms of what impact it had on participants, on decision making and on policy. Each lasted approximately 45-60 minutes.

Six interviews were completed with: the Committee on Climate Change; representatives from organisations involved in delivering Oxford's Citizens Assembly, Ireland's Citizens' Assembly, DEFRA's programme of public engagement on the environment, and the Green Alliance's citizens' juries; and Creative Carbon Scotland.

Appendix B – Public engagement frameworks

A number of existing frameworks and models provide guidance and promote good practice in public engagement. These range from key question sets or considerations that may be helpful in establishing the parameters of an engagement exercise, to more detailed practical guidance covering all stages of the process. The two main models and frameworks drawn upon for strand two of this review are outlined below

Involve's nine-step guidance for public engagement

Involve's nine-step guide for planning public engagement activities[113]; aims to help organisations establish whether engagement is appropriate and feasible and, if so, to make early decisions around design, implementation and analysis. The nine steps have been effectively summarised elsewhere[114] as follows:

- **Defining the scope**: In this initial stage important questions to ask include: How much can really change? Is participation appropriate at all? What are the risks? What level of participation is being sought?
- **Defining the purpose**: INVOLVE suggest that this is a crucial step since: "Establishing a clear purpose and getting agreement on it within the commissioning body is the single most important stage of any engagement process […] A measure of a good purpose is its ability to create a commonly shared understanding of the potential impact of the project. […] a purpose must be easy to understand and an accurate reflection of what is going to happen".
- **Deciding who to involve**: Important questions to ask at this stage include: Who is directly responsible for the decisions on the issues? Who is influential in the area, community and/or organisation? Who will be affected by any decisions on the issue (individuals and organisations)? Who runs organisations with relevant interests? Who is influential on this issue? Who can obstruct a decision if not involved? Who has been involved in this issue in the past? Who has not been involved, but should have been?
- **Deciding what the outputs will be**: INVOLVE suggest that in the preparation stage it is important to determine what the outputs of the exercise are expected to be as "Outputs can be seen as the building blocks that help to create the desired outcomes".
- **Deciding what outcomes you expect**: In the preparation stage it is also important to decide what is expected in terms of outcomes: "Outcomes are the fundamental difference that a process makes. Its overall results and impacts. Outcomes are more specific than 'purpose' and are the clear statement of exactly what is sought from the process."
- **Considering the context**: In the preparation stage it is important to consider the wider context (such any previous engagement the community has taken part in, and the characteristics and capabilities of participants) in order to ensure that the exercise links with other relevant activities going on at the same time; builds on previous experience and learns lessons from the past; and does not duplicate other activities.
- **Final design of the process**: The last element of the preparation stage is coming up with the final design: when all the key issues have been broadly considered a detailed design will be needed for the whole participatory process. "It is at this stage that the decisions about timing, numbers, costs, techniques, use of results etc. will finally be made".

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[113] INVOLVE (2005) People and Participation: How to put citizens at the heart of decision-making. http://www.sharedpractice.org.uk/Downloads/involve_publication.pdf

[114] Scottish Health Informatics Programme (2010), *Public Engagement: Why, What and How and Implications for SHIP*. (University of Edinburgh paper)

- **Institutional response**: "An institutional response can be the most significant change that occurs following a participation process. It might be a policy change […] or a reaction" INVOLVE maintain that it is important to determine early on what the scope for institutional response is and how this might occur as this "requires agreement to change from the institution itself and preparation within the institution. It is essential that explicit links are made between the participatory process and the location of the decision that will affect future action".
- **Review:** Finally, given that "Participation is an emerging field, evaluation and review of practice is very important". INVOLVE suggest that the review of the public engagement process should be planned for from an early stage.

Sciencewise principles for public dialogue

The Sciencewise programme is managed and funded by the UK government's Department for Business, Energy & Industrial Strategy, and provides assistance to policy makers to carry out public dialogue, to inform their decision-making on science and technology issues. The Sciencewise principles are based on theoretical understandings and practical experience, and cover five key dimensions of engagement

- **Context:** the conditions leading to the dialogue process are conducive to the best outcomes
- **Scope***:* the range of issues and policy opinions covered in the dialogue reflects the participants' interests
- **Delivery***:* the dialogue process itself represents best practice in design and execution
- **Impact:** the dialogue can deliver the desired outcomes
- **Evaluation:** the process is shown to be robust and contributes to learning

These principles provide a useful source for deciding future public engagement activities and have been drawn on when assessing the strengths and weaknesses of recent approaches to engaging the public on climate change. Other resources have also been used to help review recent approaches, including guidance on the use of specific public engagement techniques, for example Involve's draft standards for citizens' assemblies[115] which included contributions from a range of organisations specialising in public engagement.

[115] https://www.involve.org.uk/resources/knowledge-base/how-do-i-setup-citizens-assembly/standards-citizens-assemblies

Appendix C – Glossary of public engagement methods

Listed below are the main public engagement approaches identified in this review. Descriptions are adapted from individual projects identified in the review as well as online resources providing guidance on public engagement methods, particularly Involve's guide to individual engagement methods[116]. For further details of the application of each method, reference should be made to the reports and/or online resources on the specific projects included in the review.

Citizens' assemblies

A citizens' assembly involves bringing together a fairly large group of citizens', selected to be broadly representative of the demographics of an area, to deliberate on an issue.

A central feature is the learning component, helping participants to develop an understanding of the issue based on unbiased information. Information is usually presented through a combination of presentations from experts, written information and facilitated discussions.

Following the learning phase, participants then engage in dialogue about a topic (usually in small groups with the help of facilitators). This encourages participants to explore their own opinions on what they have heard and develop a wider understanding of the opinions of others. Experts will often be on hand during this phase to provide additional information and clarification, but not opinions.

The deliberation phase of the assembly involves participants coming to some conclusions on what they have learnt through the assembly process.

Citizens' juries

Similarly to a judicial jury, a citizens' jury brings a small representative group of citizens together to hear evidence, deliberate among themselves and reach a conclusion. Citizens' juries tend to work best when they are convened around a clearly framed question or set of choices.

'Experts' are invited to present 'evidence' to the jury, but are not part of the deliberative process. In most cases, the jury will also be given time to interact with the experts to ask questions, seek clarification and request further information before their deliberations begin. In the next stage of the process, the focus is on exploring the topic in question through dialogue with their peers, in ways that encourage an understanding of different views and perspectives.

Jurors deliberations are explicitly focused on reaching consensus (i.e. an agreed preference or recommendations) or, in the cases where consensus is not achievable, establishing an agreed understanding of points of common ground and conflict.

Deliberative workshops

Deliberative workshops are a form of facilitated group discussions that provide participants with the opportunity to consider an issue in depth, challenge each other's opinions and develop their views/arguments to reach an informed position. A defining feature is that the facilitation will support participants to communicate in productively and respectful ways. They are usually structured around three main stages:

- Information sharing - drawn from the experiences and views of participants themselves, information about the issue and/or expert perspectives on different sides of an argument.
- Dialogue to develop understanding - facilitated discussion support participants to communicate in productively and respectful ways and ensure that that minority views are

[116] https://www.involve.org.uk/resources/methods

not excluded and the discussions are not dominated by any particular faction or individual.

- Public reasoning and deliberation – resulting in a considered view, which may (or may not) be different from participants' original view, and which has been arrived at through careful exploration of the issues at hand in response to a clear task or purpose.

Structured dialogues

A structured dialogue is a specific type of deliberative workshop (see above). The distinctive feature of structured dialogues is that the activities and techniques used to facilitate the workshop are very strongly structured and designed to deliver clear outputs at each stage. This means they can be repeated, and the results analysed cumulatively, as part of a single engagement process.

They also tend to focus explicitly on creating a forum for dialogue among a diverse group of people in order to gain a better understanding of participants' different views and perspectives.

Distributed dialogues

This kind of group discussion is self-organised by groups of participants, with the aim of engaging a wide range of communities, different stakeholders, and the general public in the discussions. While the overarching policy questions are the same, the groups or individuals organising dialogues have autonomy over who is involved. The commissioning body has limited control over the quality of the discussion, the mix of people involved or the neutrality of the organisers/facilitators

Narrative workshops

Narrative Workshops are a type discussion group methodology developed by Climate Outreach There are structured in three main sections. The first section is an exploration of values held in common by the participants, to provide a basis for subsequent discussions. In the second part the discussion moves on to carefully tailored prompts to explore their views on the specific themes of the workshop (e.g. climate change and net zero). In the final section of the workshop participants review and discuss a number of "narratives" that have been developed on the topic being discussed, to identify the types of messaging that work best for future communication on the topic.

Open consultation events

Public events designed to consult or engage with members of a geographic community on a particular issue. They are "open invitation" meaning any member of the community can attend. They are also sometime referred to as "public meetings" or "area forums."

References

Strand one

Bright Blue, 2019. *Emission Impossible: Air pollution, national governance and the transport sector.* [online] Available at: <http://brightblue.org.uk/wp-content/uploads/2019/08/Emission_Impossible_Final.pdf> [Accessed 20 May 2020].

Carbon Connect, 2019. *Uncomfortable Home Truths: Why Britain urgently needs a low carbon heat strategy.* [online] Available at: https://www.policyconnect.org.uk/cc/sites/site_cc/files/supporting_materials_2-_polling_data_0.pd f> [Accessed 24 May 2020].

Cardiff University and Climate Outreach, 2020: *British Public Perceptions of Climate Risk, Adaptation Options and Resilience (RESiL RISK)*. [online] Available at: <http://orca.cf.ac.uk/129452/1/resilrisk-FINAL-ONLINE.pdf > [Accessed 24 May 2020].

Centre for Climate Change and Social Transformations, 2020. *Public opinion in a time of climate emergency.* [online] Available at: <https://cast.ac.uk/wp-content/uploads/2020/01/CAST-Briefing-paper-02-Pubic-opinion-in-a-time-of-climate-emergency-min.pdf> [Accessed 25 May 2020].

ComRes, 2019. *ComRes Climate Poll – April 2019.* [online] Available at : <https://www.comresglobal.com/wp-content/uploads/2019/05/Climate-Change-ComRes-Poll-April-2019.pdf> [Accessed 24 May 2020].

ComRes, 2020. *BBC Newsround – Climate Change Poll – 30th October 2019.* [online] Available at : <https://www.comresglobal.com/wp-content/uploads/2020/03/Final-Newsround-Climate-Change-Poll-301019-0203.pdf> [Accessed 20 May 2020].

Department for Business, Energy & Industrial Strategy, 2020. *BEIS Public Attitudes Tracker (March 2020, Wave 33, UK).* [online] Available at: <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/884028/BEIS_PAT_W33_-_Key_findings_Final_.pdf> [Accessed 25 May 2020].

Eating Better Alliance, 2019. Teenage Brits' attitudes to climate change. [online] Available at: https://www.eating-better.org/blog/climate-change-top-concern-for-british-teenagers . [Accessed 26 May 2020].

EIB, 2019. *Climate Survey.* [online] Available at: https://www.eib.org/en/surveys/2nd-citizen-survey/index.htm . [Accessed 26 May 2020].

Ipsos MORI, 2019. *Concern about climate change reaches record levels with half now 'very concerned'.* [online] Available at: <https://www.ipsos.com/ipsos-mori/en-uk/concern-about-climate-change-reaches-record-levels-half-now-very-concerned> [Accessed 25 May 2020].

Ipsos MORI and Kings College London, 2019. *Misperceptions about climate change and the natural environment.* [online] Available at: < https://drive.google.com/file/d/1-9o7FIdqtXe-7g_RAWPwTd7JvMy8hPsG/view > [Accessed 25 May 2020].

Ipsos MORI, 2020. *Public and MSPs' attitudes to the climate emergency.* [online] Available at: <https://www.ipsos.com/sites/default/files/ct/news/documents/2020-01/scotland-climate-change-charts-2020.pdf> [Accessed 20 May 2020].

Ipsos MORI, 2020. *Public Perception of Environmental Impact.* [online] Available at: <https://www.ipsos.com/sites/default/files/ct/news/documents/2020-02/ipsos-omnibus-environmental-impact-poll-feb-2020.pdf> [Accessed 27 May 2020].

Nats Aviation Future Airspace Tracker, 2019. [online] Available at: https://www.comresglobal.com/wp-content/uploads/2020/01/comuk20037_natrep_tabs_02012020.pdf > [Accessed 27 May 2020].

Scottish Government, 2019. *Scottish household survey 2018: annual report.* [online] Available at: <https://www.gov.scot/publications/scotlands-people-annual-report-results-2018-scottish-household-survey/> [Accessed 20 May 2020].

Scottish Government, 2020. *Public attitudes to coronavirus.* [online] Available at: < https://www.gov.scot/publications/public-attitudes-coronavirus-summary/pages/10/> [Accessed 17 June 2020].

Survation, 2018. Renewable energy poll: Prepared on behalf of Scottish Renewables. [online] Available at : < https://www.survation.com/wp-content/uploads/2018/10/Final-Tables-Scottish-Renewables.pd f> [Accessed 27 May 2020].

Survation, 2019. *Environment Poll : Prepared on behalf of Scottish Environment LINK.* [online] Available at : <https://www.fightforscotlandsnature.scot/wp/wp-content/uploads/2019/09/Scot-Link-final-tables-pdf.pdf> [Accessed 27 May 2020].

*Survation, 2019. Environment Poll : Prepared by Survation. [*online] Available at : < https://www.survation.com/british-public-supportive-of-efforts-to-reduce-greenhouse-gas-emissions-new-survey-reveals/ > [Accessed 27 May 2020].

The Policy Institute, 2019. *Misperceptions about climate change and the natural environment.* [online] Available at: <https://drive.google.com/file/d/1-9o7FIdqtXe-7g_RAWPwTd7JvMy8hPsG/view> [Accessed 27 May 2020].

Transport Environment, 2020. The future of Uber in Europe: electric and shared? [online] Available at: <https://www.transportenvironment.org/sites/te/files/The%20future%20of%20Uber%20in%20Europe_electric%20and%20shared%20%281%29.pdf > [Accessed 27 May 2020].

Understanding Risk Research Group, 2020. *British Public Perceptions of Climate Risk, Adaptation Options and Resilience (RESiL RISK).* [online] Available at: <http://orca.cf.ac.uk/129452/1/resilrisk-FINAL-ONLINE.pdf> [Accessed 25 May 2020].

YouGov, 2018. *10:10 Survey Results.* [online] Available at: https://d25d2506sfb94s.cloudfront.net/cumulus_uploads/document/ein4q4otuf/1010_181016_SolarPanels.pd f>[Accessed 26 May 2020].

YouGov, 2018. *How concerned, if at all, are you about climate change?* [online] Available at: https://yougov.co.uk/topics/politics/survey-results/daily/2018/10/08/d7f9f/1 [Accessed 26 May 2020].

YouGov, 2018. *Deisel car ban.* [online] Available at: <https://yougov.co.uk/topics/transport/survey-results/daily/2018/10/19/a9db6/1> [Accessed 26 May 2020].

YouGov, 2019. *YouGov – Climate change heatwave*. [online] Available at: <https://d25d2506sfb94s.cloudfront.net/cumulus_uploads/document/krbb8nlpmr/YouGov%20-%20climate%20change%20heatwave%20190726.pdf> [Accessed 25 May 2020].

YouGov, 2019. *YouGov – International Climate Change Survey.* [online] <https://d25d2506sfb94s.cloudfront.net/cumulus_uploads/document/epjj0nusce/YouGov%20-%20International%20climate%20change%20survey.pdf> [Accessed 26 May 2020].

YouGov, 2019. *YouGov/Oxfam Survey Results.* [online] Available at: <https://d25d2506sfb94s.cloudfront.net/cumulus_uploads/document/wy50gwmvie/OxfamResults_191223_ClimateChange.pdf> [Accessed 27 May 2020].

YouGov, 2019. *Why is the UK's electric car adoption so sluggish?* [online] Available at: <https://yougov.co.uk/topics/transport/articles-reports/2019/01/16/why-uks-electric-car-adoption-so-sluggish > [Accessed 27 May 2020].

YouGov, 2019. *How likely is it the next car you buy will be electric?* [online] Available at: https://yougov.co.uk/topics/transport/survey-results/daily/2019/06/18/0a5d3/2 > [Accessed 27 May 2020].

YouGov, 2019. *Climate Engineering.* [online] Available at: https://d25d2506sfb94s.cloudfront.net/cumulus_uploads/document/exm23j2dpp/YouGov%20Climate%20Engineering.pdf > [Accessed 27 May 2020].

YouGov, 2019. *Stop Climate Chaos Scotland: Survey Results.* [online] Available at: https://d25d2506sfb94s.cloudfront.net/cumulus_uploads/document/sfjpv6qc2w/StopClimateChaosResults_190325_Scotland_W.pdf > [Accessed 27 May 2020].

YouGov, 2019. *Net zero survey results.* [online] Available at: https://yougov.co.uk/topics/politics/survey-results/daily/2019/06/12/b8f46/1 [Accessed 27 May 2020].

YouGov, 2019. *Airline carbon offsetting payments.* [online] Available at: https://yougov.co.uk/topics/science/survey-results/daily/2019/07/22/d3c0f/2 [Accessed 20 May 2020].

YouGov, 2020. *Do you think the recent floods in the UK are linked to climate change, or not?* [online] Available at: <https://yougov.co.uk/topics/science/survey-results/daily/2020/03/02/47838/2> [Accessed 20 May 2020].

Strand two

Brighton & Hove City Council, 2020. *Brighton and Hove Climate Assembly* [online] Available at: <https://new.brighton-hove.gov.uk/climate-change/brighton-hove-climate-assembly> [Accessed 20 May 2020]

Citizens' Assembly of Scotland, 2020. *Citizens' Assembly of Scotland website* [online] Available at: <https://www.citizensassembly.scot/. [Accessed 27 May 2020]

Citizens' Assembly of Ireland, 2018. *Third report and recommendations of the Citizens' Assembly: How the state can make Ireland a leader in tackling climate change.* [online] Available at: <https://www.citizensassembly.ie/en/how-the-state-can-make-ireland-a-leader-in-tackling-climate-change/final-report-on-how-the-state-can-make-ireland-a-leader-in-tackling-climate-change/climate-change-report-final.pdf> [Accessed 27 May 2020]

Climate Assembly UK, 2020. *Climate Assembly UK: The path to net zero website.* [online] Available at: <https://www.climateassembly.uk/> [Accessed 27 May 2020]

Climate Outreach, 2018. *Are the public ready for Net Zero? Recommendations for building positive public discourse.* [online] Available at: <https://static1.squarespace.com/static/58b40fe1be65940cc4889d33/t/5c950077652dea60a001d6fd/1553268859968/Are+the+Public+Ready+for+Net+Zero_+Recommendations+for+building+a+positive+public+discourse++%281%29.pdf> [Accessed 27 May 2020]

Convention Citoyenne pour le Climat, 2020. *Convention Citoyenne pout le Climat website* [online] Available at: <https://www.conventioncitoyennepourleclimat.fr/en/> [Accessed 27 May 2020]

East Lothian Council, 2018. *Consultation and Engagement: East Lothian Council's Climate Change Strategy 2020-2025* [online] Available at: <file:///C:/Users/Ciaran.Mulholland/Downloads/Supporting_Document_1___Consultation_and_Engagement___ELC_Climate_Change_Strategy%20(2).pdf> [Accessed 27 May 2020]

Escobar, O. and Roberts, J, 2015. *Involving communities in deliberation: A study of three citizens' juries on onshore windfarms in Scotland*. [online] Available at: <https://www.climatexchange.org.uk/media/1444/citizens_juries_report_exec_summary.pdf> [Accessed 27 May 2020]

Exeter City Council, 2019. *Minutes from Customer Focus Scrutiny Committee, 5 December 2019* [online] Available at: <http://committees.exeter.gov.uk/documents/b15766/Climate%20Emergency%20-%20Design%20of%20Citzens%20Assembly%2005th-Dec-2019%2017.30%20Customer%20Focus%20Scrutiny%20Commit.pdf?T=9 >[Accessed 27 May 2020]

Gerwin, M, 2018. *Citizens' Assemblies: Guide to democracy that works.* [online] Available at: <https://citizensassemblies.org/wp-content/uploads/2018/10/Citizens-Assemblies_EN_web.pdf> [Accessed 20 May 2020]

Green Alliance, 2019. *Power to the People: Shaping UK climate policy through deliberative democracy*. [online] Available at: <https://www.green-alliance.org.uk/resources/power_to_the_people.pdf> [Accessed 27 May 2020]

Involve, 2019. *Camden Citizens' Assembly on the Climate Crisis: Recommendations for tackling the climate crisis in Camden.* [online] Available at: <https://www.camden.gov.uk/documents/20142/0/Camden+Citizens%27+Assembly+on+the+Climate+Crisis+-+Report.pdf/947eb4e5-5623-17a1-9964-46f351446548> [Accessed 27 May 2020]

Involve, 2019. *Greater Cambridge Citizens' Assembly on Congestion, Air Quality and Public Transport.* [online] Available at: <https://www.involve.org.uk/sites/default/files/field/attachemnt/GCCA%20on%20Congestion%20Air%20Quality%20and%20Public%20Transport%20-%20Full%20Report%20.pdf> [Accessed 27 May 2020]

Involve and Ipsos MORI, 2016.*Meta-analysis and scoping exercise into public participation in the regulated industries.* [online] Available at: <https://www.cas.org.uk/system/files/publications/meta-analysis_and_scoping_exercise_into_public_participation_in_the_regulated_industries_ipsos_mori_involve_-_2017-10-12.pdf> [Accessed 27 May 2020]

Ipsos MORI and Involve, 2017. *Consumer participation in energy policy.* [online] Available at: <https://www.cas.org.uk/system/files/publications/consumer_participation_in_energy_policy_-_ipsos_mori-involve_technical_report.pdf> [Accessed 27 May 2020]

Ipsos MORI and Involve, 2017. *Consumer participation in water policy.* [online] Available at: < https://www.cas.org.uk/system/files/publications/17-007524-01_cfu_water_report_final_internal_and_client_use_only_090617_amended_figure_2.7.pdf> [Accessed 27 May 2020]

Ipsos MORI, 2019. *Infrastructure Commission for Scotland: Public engagement research.* [online] Available at: <https://infrastructurecommission.scot/storage/232/Appendix_I.pdf [>Accessed 27 May 2020]

Ipsos MORI, 2018. *National Infrastructure Commission. Phase 2: public research.* [online] Available at: <https://www.nic.org.uk/wp-content/uploads/Ipsos-MORI-Phase-2-of-social-research-Final-report.pdf> [Accessed 27 May 2020]

Ipsos MORI, 2019. *Oxford's Citizens Assembly on Climate Change: A summary report for Oxford City Council.* [online] Available at: <https://www.oxford.gov.uk/downloads/file/6871/oxford_citizens_assembly_on_climate_change_report_-_november_2019> [Accessed 27 May 2020]

NatCen, 2020. *Citizen Engagement on the Environment (for Defra).* [online] Available at: <http://natcen.ac.uk/our-research/research/citizen-engagement-on-the-environment/> [Accessed 27 May 2020]

Ostfeld, R. and Reiner, D. 2019. *Exploring public support for climate action and renewables in resource-rich economies: The case of Scotland.* [online] Available at:

<https://www.eprg.group.cam.ac.uk/wp-content/uploads/2019/10/1934-Text.pdf> [Accessed 27 May 2020]

Shared Future, 2019. *The Leeds Climate Change Citizens Jury.* [online] Available at: <https://www.leedsclimate.org.uk/sites/default/files/REPORT%20V1.1%20FINAL_0.pdf> [Accessed 20 May 2020]

Shared Future, 2019. *Citizens' Assemblies, Citizens' Juries and Climate Change.* [online] Available at: <https://sharedfuturecic.org.uk/citizens-assemblies-citizens-juries-and-climate-change/> [Accessed 20 May 2020]

The Centre for Climate Change and Social Transformations (CAST), 2020. *Briefing Paper: Climate Change Citizens Assemblies.* [online] Available at: <https://cast.ac.uk/wp-content/uploads/2020/03/CAST-Briefing-03-Climate-Change-Citizens-Assemblies.pdf> [Accessed 20 May 2020]

The Scottish Government, 2020. *The Big Climate Conversation: Findings from a programme of public engagement on climate change.* [online] Available at: <https://www.gov.scot/publications/report-findings-big-climate-conversation/pages/2/> [Accessed 27 May 2020]

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