

Communicating on climate change after COVID-19

▶ Matt Howick, Calum Morton, Mark Cuthbert, Louise Fraser, John Pinkard, JRS

December, 2020

DOI: <http://dx.doi.org/10.7488/era/795>

Executive summary

This research was commissioned by ClimateXChange, on behalf of the Scottish Government, as part of a range of work to further develop Scottish Government public engagement activity under the Climate Change (Emissions Reduction Targets) (Scotland) Act (2019)¹ and the Climate Change Plan (Scottish Government 2020).²

The aim of the work was to:

- Study the potential impact of the response to the COVID-19 pandemic on how the Scottish public understand and respond to climate change messaging and narratives; and
- Assess how this learning can be applied to successfully facilitate support for a green recovery from the pandemic by using language and framing that speaks to people's values, generates a positive impact on key audiences, and encourages the action needed.

This report sets out the findings from this research which was conducted during the COVID-19 pandemic between July and September 2020.

The work was split into three sequential phases which involved:

1. A brief desk review of existing and emerging climate change and COVID-19 related communications; to inform the following qualitative research phase.
2. A qualitative discussion phase with a cross-section of the Scottish public to explore responses to different narratives identified and created in light of the desk review and identify the most compelling language, framing and messaging for climate change moving forward.
3. An online survey to quantitatively test the qualitative findings from phase 2 with a large, representative sample of the Scottish public.

The desk review highlighted:

- A common view and presentation that climate change remains an important issue and requires urgent/immediate action from everyone

¹ <https://www.legislation.gov.uk/asp/2019/15/enacted>

² <https://www.gov.scot/publications/scottish-governments-climate-change-plan-third-report-proposals-policies-2018/>

- That while most/all of the reviewed literature effectively includes a collective call to action, there is often ambiguity about how this translates into actions for each of the constituent parties.
- A vast array of climate change related terminology is being presented – newer terms such as net zero are unfamiliar to the public
- A number of prominent narratives to investigate further including:
 - Emphasising urgency and immediacy.
 - Drawing on past successes or achievements on climate issues.
 - The recovery from COVID-19 could present some potential opportunities for change to climate policy and action.
 - The need for collective action by individuals, organisations and governments.

Drawing on the desk review **the qualitative phase** explored in more depth selected terminology, narratives and tone. The key highlights were that:

- COVID-19 has had an impact on the way people view the environment and climate change - people are still engaged with the topic of climate change and recognise its importance, but it is not top of mind and its significance is relative to the pandemic.
- The term 'green recovery' was associated more as the recovery from climate change rather than recovery from COVID-19.
- Although there is recognition that there is a climate change emergency/crisis, this was widely seen as an issue which has been present for some time and is likely to remain for a long time to come in comparison with the pandemic.
- For many participants, efforts to tackle the pandemic have demonstrated that it is possible for society to come together both nationally and globally in an emergency to tackle issues including climate change.
- Participants, in the most part, do not have a wide vocabulary around climate change, and are not familiar with many of the key terms discussed in the groups.
- Language used by people around climate change appears to extend broadly to the wide range of environmental issues, with little distinction between climate change and wider environmental issues. Language used often appeared to relate to personal actions rather than to climate change as a global issue.
- People are looking for a strong, urgent tone, with clear targets and path to follow.

The subsequent **quantitative phase of research** looked to: test awareness and understanding of key climate change terms; measure interest levels and perceived personal relevance of key terms; and explore the tone and appeal of broad messages around climate change. The findings highlighted that:

- Just over half (51%) of participants claimed to have high levels of concern about climate change, whereas only a quarter (27%) claimed to be knowledgeable about the subject
- Participants were more familiar with longer established climate change terminology such as Carbon Neutral, Energy Efficiency and Sustainable Travel. Whereas newer/less established terms, such as Just Transition, Wellbeing Economy, Planetary Health and Green Finance have low awareness, even among those who reported high levels of knowledge about climate change.
- Explanation and qualification of terminology can improve clarity of understanding. However, clarity of understanding terms does not in itself directly lead to interest or perceived personal relevance.
- Having a clear and concise climate change vision, targets and a route map to achieving them could help people understand what needs to and can be done.

Conclusions

- The impact of COVID-19 has widened the narrative around climate change to highlight that: collective action and change are possible, and in recovering from the pandemic, there is the opportunity to introduce further measures to tackle climate change.
- Although people care about climate change it is not top of mind for most - participants were still engaged with the topic of climate change and recognise its importance but its significance was relative to the pandemic.
- A large array of climate change and environment related terminology is in circulation but vocabulary and understanding are limited. See Table 2. Key word/terms observations on page 37 for more detail.
- The idea of a green recovery is relevant and important to people in Scotland but as a term it needs to be clearly explained.
- It is not always clear what the different climate responsibilities are and where they lie.
- People are looking for a strong, urgent tone, with clear targets and path to follow.

Recommendations

In light of the findings and conclusions from this study, in order to develop further Scottish Government public engagement activity on climate change and to help facilitate support for a 'green recovery' from the pandemic, the key considerations/recommendations are as follows:

- Educate and build knowledge around climate change by explaining key terms. To improve clarity of understanding and personal relevance, frame these and illustrate arguments in ways that are relevant to the lives of the different audience groups. Specifically:
 - **Climate Emergency** – Can be used in all communications
 - **Net Zero** - Explain the term as it becomes more widely used by government and in public discourse. Frame it as a target end goal alongside communications that will bring more of an emotional connection to the end goal
 - **Green recovery** - Explain and make clear it specifically aims to benefit the economic recovery from COVID-19
 - **Just transition** – For the public audience, as this term lacks meaning, establish the idea of the concept rather than focusing too much on establishing the term at this present time.
 - **Planetary Health, Wellbeing Economy** – As these are not widely understood terms, use sparingly with the general public, alongside other terms that more clearly show what we are working towards
- To help create a sense of optimism to motivate action and demonstrate leadership, it is important to present:
 - A clear and concise vision, to help the public understand where everyone needs to get to – the end goal.
 - An accompanying routemap with clear targets, to help people in Scotland better understand the required journey and actions to reach the end goal. Emphasise key targets and how these can be achieved
 - A sense of being “all in this together” and all having a role to play at several levels (including global, Scotland, business, community, personal)

- The progress made on both climate change and COVID-19 due to collective action

In addition, it will be important to:

- Remind people that there is still time to act and as such there is still hope that we can turn things around. An optimistic message is required in government communications to ensure that there is a clear call to business, communities and individuals that we all have a role to play in tackling the climate crisis.
 - Emphasise that small actions can make a big difference
 - Deal with the barriers to optimism, such as a sense that the big international 'players' are not pulling their weight.
- Clearly communicate the urgency of tackling climate change, but balanced with presenting climate change as a challenge that can be solved. There is strong support for action at all levels of society and a clear indication that a strong 'must do' tone is most appropriate for the topic of climate change.
 - Ensure the source is credible and reputable, but keep language accessible - while it is important that messages originate from a source the audience considers trustworthy, avoiding excessive use of climate-related jargon or other technical language is also required to maximise appeal and understanding.

Contents

Executive summary	1
Recommendations	3
1 Introduction and approach.....	6
1.1 Introduction	6
1.2 Approach.....	6
2 Desk review.....	7
2.1 How climate change is being presented and discussed	7
2.2 Emerging evidence on changing public attitudes & values in light of the COVID-19 pandemic	13
2.3 Learnings and best practice available for improving climate change communications, engagement and discussion.....	15
2.4 Key insights and conclusions to take forward to the qualitative phase	16
3 Formative qualitative findings and analysis	17
3.1 Spontaneous engagement with and views on climate change in the era of COVID-19	17
3.2 Language	19
3.3 The tone that should be used in communications around Climate Change.....	24
3.4 The use of targets and timings within communications	25
3.5 Responsibility for climate change	26
3.6 Sources of information.....	27
3.7 Narrative themes	28
3.8 Discussion of potential URLs.....	29
3.9 Key insights and conclusions to take forward to the quantitative phase	30
4 Quantitative findings and analysis	31
4.1 Levels of knowledge and concern about climate change in general.....	31
4.2 Awareness of climate change terms	32
4.3 Key terms	33
4.4 Scottish Government targets	38
4.5 Climate change action	39
4.6 Future statements	40
4.7 Summary and key conclusions	42
5 Conclusions and recommendations.....	44
5.1 Conclusions.....	44
5.2 Recommendations	47
Appendix A – Methodology	48
Appendix B - Learnings and best practice available for improving climate change communications, engagement and discussion	52
Appendix C - Selected terms/terminology prevalent across the different desk review sources	54
Appendix D - Differences in awareness by term	55
Appendix E – Quantitative online survey.....	56
References	63

1 Introduction and approach

1.1 Introduction

Following the First Minister's declaration of a global climate emergency in April 2019 (Scottish Government 2019), research commissioned by the Scottish Government found that the public supported the use of relatively strong 'emergency' language in the government's framing of climate change (Munyama et al 2020).

This year, governments, businesses, and citizens around the world have had to respond rapidly and radically to the more immediate global emergency of COVID-19. As the world begins to recover from this emotionally and economically devastating pandemic, questions are arising about how societal views and values may have changed in light of this experience, and what this might mean for how we think and talk about the global climate emergency.

As such, ClimateXChange, on behalf of the Scottish Government, commissioned research to:

- Study the potential impact of the response to the COVID-19 pandemic on how the Scottish public understand and respond to climate change messaging and narratives; and
- How this learning can be applied to successfully facilitate support for a green recovery from the pandemic by using language and framing that speaks to people's values, generates a positive impact on key audiences and encourages the action needed.

Findings from this research will be used to further develop Scottish Government public engagement activity under the Climate Change (Emissions Reduction Targets) (Scotland) Act (2019) and the Climate Change Plan (Scottish Government 2020).

This report sets out the findings from this research which was conducted during the COVID-19 pandemic between July and September 2020.

1.2 Approach

ClimateXChange commissioned JRS to undertake this research. The work was split into three sequential phases:

1. Carry out a brief desk review of existing and emerging climate change and COVID-19 related communications; to inform the following qualitative research phase.
2. A qualitative phase of focus group discussions with a cross-section of the Scottish public to explore responses to different narratives identified and created in light of the desk review and identify the most compelling language, framing and messaging for climate change moving forward.
3. Administer an online survey to quantitatively test qualitative findings from phase 2 with a large, representative sample of the Scottish public.

For full details of the methodology please see Appendix A.

2 Desk review

This section sets out the findings from the first element of the research – a brief desk-based review of existing and emerging evidence relating to climate change and COVID-19 to identify and explore:

- How climate change is being presented and discussed
- Emerging evidence on changing public attitudes and values in light of the COVID-19 pandemic
- Learnings and best practice available for improving climate change communications, engagement and discussion

The resources were drawn from current and recent (mostly from 2018 onwards) Scottish Government publications and communications, stories in the media, communications from third sector organisations, and academia.

2.1 How climate change is being presented and discussed

This section outlines how various stakeholders (the Scottish Government, media, third sector organisations, and academia) have chosen to present climate change issues in their communications, and summarises the key narratives, framing and tone.

The Scottish Government

Analysis of Scottish Government communications around climate change before and after the COVID-19 pandemic indicates that they are looking to create a sense of continuity around Scotland's performance on climate issues while also positioning the enforced changes in policy caused by the pandemic as an opportunity for the country to make changes which will tackle global climate change.

Pre-COVID-19, Scotland was often positioned as a nation with a strong record of action on climate change by the Scottish Government. Communications such as those around the new "Green Budget" (Scottish Government 2020a) indicate that the government's commitment to addressing climate issues remains despite the public health challenges they are also facing at present. One significant message to arise from COVID-19 is that Scotland's plan for economic recovery after the pandemic will look for opportunities to bring about change which can help reduce the country's greenhouse gas emissions (Scottish Government 2020b).

Media

Comparisons between COVID-19 and climate change are prevalent in the media, usually to emphasise urgency (Taylor 2020) and the need for collective action. Articles also often put forward the argument that recovery from the pandemic should focus on how we can change for the better and introduce more environmentally friendly policies.

In 2019, The Guardian published an outline of a change in terminology that they adopted in order to ensure the climate crisis was accurately reflected in their reporting (Zeldin-O'Neill 2019). Their six key terms now use stronger language to describe the climate crisis as part of efforts to convince people that action is needed now:

- Using "climate emergency" or "climate crisis" instead of "climate change" to emphasise the seriousness and urgency of the situation
- Using "climate science denier" or "climate denier" instead of "climate skeptic" to reflect the overwhelming scientific consensus that the earth's climate is affected by human behaviour

- Using “global heating” not “global warming”, which is a more accurate way to describe how gases trap heat from the sun
- Using “Greenhouse gas emissions” in place of “carbon emissions” or “carbon dioxide emissions” as this term includes other harmful insulating gases e.g. CFCs
- Using “wildlife” instead of “biodiversity” as this term is more accessible and emotive
- Using “fish populations” instead of “fish stocks” to emphasise that fish are not just a food resource, but a key part of the ocean’s ecosystem

Third Sector

Some third sector organisations highlight parallels between COVID-19 and the climate crisis as major issues which can only be solved by fundamentally changing many of our habits. They also highlight that the global nature of the pandemic emphasises the importance of governments working together to solve the climate crisis.

It is also presented that some of the new ways of working adopted to protect us from the coronavirus have environmental benefits, and after the pandemic passes there will be an opportunity to bring in new policies which reduce environmental harm, rather than resume behaviours that cause additional damage (Stop Climate Chaos Scotland 2020).

Academia

The selected academic sources often made the case for stronger measures and commitments at a policy level to reduce climate change. Some also identified opportunities created by measures adopted during the pandemic which could enable climate-friendly policies to be adopted. Academic sources also discussed which messages and frames were most persuasive to the general public.

2.1.1 Narratives

The prevalent messages/narratives to emerge from the review are summarised as follows:

Climate change is an urgent/immediate threat and should be prioritised

A key narrative in Scottish Government policy and budget announcements was that, despite its focus on dealing with the pandemic, the Scottish Government remains committed to tackling climate change. Climate change is typically positioned as being equal in importance to other issues the Scottish Government is focused on, such as poverty and health (Scottish Government 2020).

Climate change is typically portrayed in media as being an urgent, significant threat which requires action to be taken in the short term. While COVID-19 has also received a large amount of coverage as a pressing issue, many media outlets are also positioning climate change as a threat of similar magnitude.

COVID-19 as an opportunity for positive steps on climate change

Discussion of post-COVID-19 economic recovery by the Scottish Government frequently portrays it as an opportunity to adopt new measures to fight climate change. In practice, this would mean rebuilding Scotland in the wake of the COVID-19 pandemic in a way that prioritises sustainability and green practices across all of society (Scottish Government 2020c).

A key feature of the COVID-19 pandemic has been an enforced change of lifestyle, and some of the new behaviours have positive environmental impacts. For example, the mass switch to home working during the national lockdown in early 2020 reduced

pollution from commuters. Some third sector organisations have called for the pandemic to be used as an opportunity to take stock of how our pre-COVID habits may have been environmentally unsound, and to adopt more climate-friendly behaviours instead of going “back to normal” once restrictions are lifted (Boss 2020).

Several media sources also argued that the disruption to both industry practice and the habits of individuals as a result of COVID present an opportunity to adopt new practices, policies and behaviours which are more environmentally friendly (Maslin 2020).

Some of the reviewed academic sources argued that the restrictions placed on certain industry practices and individual behaviours should be viewed as an opportunity to switch to more climate-friendly alternatives (Evanson 2020).

There is much to be done to tackle climate change despite achievements to date
Although often described as a success story in Scottish Government communications, there is also a strong narrative that there is much more to be done. Further developments, such as setting more ambitious targets for emissions reduction, are often linked to previous achievements to create a sense of progress while acknowledging that the climate crisis is still far from being solved (Scottish Government 2019a).

While third sector organisations are keen to draw attention to areas where their lobbying and activism has begun to make a difference, they tend to stress that the climate crisis will require much more action before the damage can truly be arrested.

This narrative is also prevalent in the reviewed academic sources. These often note that current global emissions levels must be drastically reduced to prevent a large rise in temperature. While various national and international pledges and treaties have set targets for emissions reduction, there is a significant gap between the projected effect of the promised changes (if these are indeed implemented) and the reduction needed to maintain a safe temperature worldwide (Bushell et al 2016).

COVID-19 has caused climate change issues to be deprioritised

Some of the reviewed academic sources expressed concern that the immediacy of the COVID-19 pandemic resulted in climate issues being regarded as a lower priority for both authorities and the public (Ecker et al 2020). This tended to reduce the demand for action on the climate. This narrative was presented as a negative development which had to be countered, often by linking COVID-19 recovery to environmental action.

A collective, nationwide effort is needed to reverse climate change

There is a clear effort to show that collective action by individuals across Scotland will be just as important as policy decisions in reducing Scotland’s environmental impact. (Scottish Government 2019b). Linking climate issues to social issues such as social justice or poverty and emphasising any opportunities for consultation and co-production is intended to show that the Scottish Government wants to be perceived as working with its citizens on climate change, rather than simply dictating new rules.

While third sector organisations often focus on encouraging change at an organisational, community or individual level, there is a clear narrative that a whole systems approach to the Earth’s climate will be necessary to achieve meaningful results (Keep Scotland Beautiful 2020).

A related narrative which appeared in media stories was that the establishment, in the form of governments, media and large organisations, has not treated climate change as

a priority (Monbiot 2020). This lends itself to criticism of groups who are perceived as focusing on profit or other goals at the expense of the environment.

Often linked to discussion of the seriousness of climate change as a problem, the media also presents a collective effort from our society as a whole as the only way to enact change at the scale required to prevent further environmental damage and begin to reverse what has already been done (Burns 2020).

Scotland is playing a part in the global climate conversation

Often linked to the COP26 conference in Glasgow, this narrative focuses on collective action by governments worldwide rather than individuals (Scottish Government 2019c). This is also typically linked to Scotland being portrayed as a global leader on environmental issues, as well as with a broader desire to position Scotland as outward-looking on the international stage.

Public pressure on governments and large organisations is needed

Many third sector organisations have identified that large-scale public pressure will play a key role in motivating governments or large organisations to commit to changes in environmental policy, and a further role in holding them to account to ensure promises are honoured. This may take a range of forms (e.g. demonstrations, strikes, petitions) but the primary takeaway is that a strong demonstration of public support can result in positive change (Church of Scotland 2020).

Climate change is affecting people's health

In addition to environmental impacts, some articles also highlighted the damage to human health caused by environmentally harmful practices, such as respiratory problems from air pollution (Messenger 2020).

2.1.2 How the messaging/narratives are being positioned/framed

The review highlighted a number of different contexts and approaches that have been used to frame or position the climate change messages/narratives in order to better engage with audiences. These include:

Presenting Scotland as a global leader on climate change

This frame looks to evoke feelings of national pride and accomplishment as well as establishing the Scottish Government as a credible voice domestically on climate issues (Scottish Government 2020d). This was frequently linked to a “we’re all playing our part” framing, which focuses on success stories to create a sense of positive momentum and encourage further buy-in from the audience.

Some messages from the third sector appealed to national pride, highlighting Scotland’s environmental track record as something to celebrate in order to encourage further action. However, there were others who highlighted the Scottish Government’s climate commitments and suggested that a stricter approach would be required in order to hit the targets. It is likely that these contrasting ways to frame Scottish Government climate action would resonate with different political groups within Scotland (Corner et al 2018).

Scotland is also characterised in some domestic Scottish media (such as national newspapers) as being a world leader in environmental policy.

A green revolution is required to secure jobs and protect our climate

Calls for a green revolution frame climate change and the pandemic-related financial crisis as two issues which can be solved simultaneously through large-scale investment

in sustainable industries and practices. Proponents of this frame, often campaigning organisations or think tanks such as the Climate Emergency Response Group (CERG) or Scotland's Futures Forum, argue that a green revolution for Scotland would create secure jobs as well as reducing the nation's impact on the climate (Bol 2020).

Government communications which applied this frame typically sought to present it as an empowering idea and a reason to be optimistic (Munyama et al 2020). It was often tied into the idea that Scotland's strong track record on the climate demonstrates its potential to effect a green revolution.

Green revolution framing has also been used in some media sources in conjunction with narratives around COVID-19 as an opportunity for change, suggesting that we should use the post-pandemic recovery to adopt new technology and ideas which can prevent further environmental damage (Monbiot 2020).

COVID-19 as an opportunity on climate change

Scotland's COVID-19 recovery is often framed as an opportunity to introduce further measures to tackle climate change. With many industries requiring considerable support to deal with the challenges posed by pandemic restrictions, the Scottish Government aims to provide this support while also incentivising changes to policy and practice which lessen the environmental impact of Scotland's economy as it recovers.

The backdrop of COVID-19 was also used as a framing device in some reviewed third sector communications, as it provided an example of a recent situation where a significant threat required immediate action at all levels of society.

The media sources also place the issue of climate change in a familiar context for their audience with comparisons to the COVID-19 response by emphasising tangible consequences of unchecked climate change, or by demonstrating how the climate has changed over time.

Proponents of this frame, including media, third sector and Scottish Government sources, also tended to acknowledge that COVID-19 has created an unprecedented and challenging economic situation. Recognising the impact of the pandemic is an important element of this frame, as too much focus on "opportunities" could risk alienating those who have been negatively affected.

Human health as a frame

Human health is used as a framing device by some journalistic sources, focusing on the negative impact on people's wellbeing in the present in order to generate a sense of empathy and the need for urgent action (Messenger 2020). This frame also facilitates comparisons with the pandemic, another urgent issue which requires immediate action.

Generational legacy

Some climate articles frame action on climate change as part of our generation's duty of care to the planet, evoking the idea that protecting the environment for future humans can be part of our legacy (Sturgeon 2020). This frame projects a sense of optimism and often emphasises the need for large-scale collective effort.

Scientific consensus

Scientific research is often used as a framing device in the media, in order to add credibility to a narrative or introduce new information to the debate (Watts and Redfearn

2020). This frame also reinforces the message that there is scientific consensus that global warming is a result of human behaviour and change is needed.

Past and future framing

Past and future framing is employed in media articles to draw the reader's attention to changes over time. This helps to establish a sense of urgency, particularly when past climate trends are compared to future projections, which often shows that the rate of change is increasing (Watts & Redfearn 2020).

There were a number of academic papers that made useful reflections on the efficacy of different types of framing:

- Social or political framing of climate change arguments is more effective than scientific framing.
- Using scientific framing can lead to climate issues being perceived as too complex and distant from ordinary people's influence. If a social or political framing is employed instead, this tends to resonate more with an audience who lack deeper understanding of climate science (Bushell et al 2016).
- Constructive dialogue is key to developing effective climate change messages and strategies.
- When climate change is presented as a controversial issue or reporting on the environment focuses on conflict, this can reduce receptiveness to environmental messages. Adopting a collaborative approach to solving climate issues, where a wide range of stakeholders have input, can help present a unified front increasing the likelihood of messages being received as credible and persuasive (ibid).
- Cognitive dissonance, othering, and their impact on message receptiveness
 - Cognitive dissonance can affect the receptiveness of environmental messages. The inherent hypocrisy of many modern attitudes around climate change (for example, knowing that air travel causes pollution but wishing to take a flight for a holiday) causes feelings of mental discomfort. Dissonance can be reduced by changing behaviours, but some may also seek information which contradicts the reality of climate change in order to feel justified in their behaviour (ibid).
 - Another mechanism which some employ to reduce feelings of dissonance is "othering" whereby the issue of climate change is characterised as someone else's problem. Othering in this context may project responsibility onto a range of others, such as peers, foreign governments, or industry leaders. Feelings of low self-efficacy can play into this, as those who feel they do not understand climate change can place responsibility for solving the issue on those who do understand, such as the scientific community (ibid).

2.1.3 Tone

The overall tone adopted by all parties is the '**urgency**' of the climate situation and the need for action. This is reinforced by expressions of concern about inaction but, for some, balanced with cautious optimism.

We found that the tone adopted by the Scottish Government was typically one of urgency. However, there was also often an element of optimism to this, suggesting that climate challenges may be overcome if a coordinated and committed effort is made.

Third sector sources tended to adopt a tone which warns of the potential severe consequences of inaction on climate change. These sources frequently call for immediate action or look to point out where current commitments from government or

industry were below what they considered to be adequate to prevent permanent ecological damage.

Urgency also dominates the tone of much of the media coverage. Many articles portray climate change as a crisis of a similar magnitude to the COVID-19 pandemic, with the implication that action on a similar scale is needed. Further parallels to COVID-19 coverage can be found in articles which adopt a tone critical of government's actions to date on the climate. A similar critical tone is often also applied to industry, where large businesses are seen as putting their commercial goals ahead of the environment.

Some media coverage aims to adopt a neutral, factual tone. This allows an argument to be set out in a less emotionally charged context, giving it a more rational, credible feel. This approach is often used in more in-depth articles which argue in favour of a particular policy, and tend to assume a more informed audience.

Optimistic language is adopted in some media articles, typically those which look to encourage people to act by drawing on past successes. Adopting this tone helps to counteract the sense that climate change is an overwhelming issue which it may be too late to solve, by building a narrative of progress and constant improvement.

The tone used in the reviewed academic literature around climate change tends to be less emotive than that employed in journalistic media. However, it nonetheless conveys a sense of urgency and the need for swift and far-reaching action. Desirable actions (such as a green recovery) are described in optimistic terms in order to position them as the preferred solution to climate change.

2.2 Emerging evidence on changing public attitudes & values in light of the COVID-19 pandemic

Many of the themes which emerged from research conducted prior to the pandemic appear to still be relevant at present. For example, narratives appealing to national pride in Scotland's environmental performance were found to still resonate with audiences (Scottish Government 2020f).

Many of the new themes identified in research that was conducted during the pandemic specifically concern how COVID-19 and climate change are viewed relative to one another. The emergence of another global crisis in the form of a pandemic has created a situation where the public have another "big issue" to compare with climate change, which for some may be perceived as a more immediate threat. There are also narratives which merge the two issues by advocating for a climate-friendly COVID-19 response, with initial research suggesting that the public are likely to be receptive to this idea.

2.2.1 Themes from pre-COVID research

The following themes were prevalent in research which was conducted before the global pandemic was declared:

Climate change is urgent and will affect Scotland

The 2019 Scottish Household Survey found that a majority of Scottish adults across all age groups saw climate change as an urgent and immediate threat (Scottish Household Survey 2019).

For some, there is a sense that there has been little progress made

Climate change has been an issue discussed in the media for a long period of time, and many of the most widely reported stories on the topic are received as “bad news”. This can lead some people to adopt the attitude that environmental issues are insurmountable, or “the damage is already done” (Munyama et al 2020).

People who are better informed tend to be more hopeful and more confident discussing climate change

People in Scotland who were well informed on climate change tended to feel more empowered to discuss the issue with others. In addition, they tended to have a more optimistic outlook towards climate change and were more likely to see it as a threat which could be countered going forward (Scottish Government 2020f).

2.2.2 Evidence which accounts for COVID-19’s effect on public opinion

Research conducted after the declaration of a worldwide pandemic is able to take account of how COVID-19 has impacted public attitudes around climate change. This section highlights themes which encompass both COVID-19 and climate change, and themes which exclusively concern climate change, but have been established by research conducted during the pandemic.

Climate change is not top of mind for most Scots but is an issue they care about

Most Scots don’t see climate change as a major priority in their own lives, focusing on other goals such as career milestones, education or spending time with family. However, the environment is generally regarded as important, but it is easier to prioritise other “life goals” as they tend to have more obvious solutions and a greater sense of tangible reward (Munyama et al 2020).

Media clutter means few actively search for climate information

With major climate crisis events (e.g. the Australian bushfires) receiving much coverage in the media, few people feel the need to search for additional information themselves. Many also hold the view that they have a good understanding of climate issues due to this extensive media coverage. However, this attitude can lead to misconceptions being internalised or reinforced, as people are not exposed to the nuances of the issue (ibid).

Little specific knowledge of Net Zero strategy

Scots tend to have a low level of understanding around net zero. While broadly aware that the Scottish Government has set an ambitious target, most had little awareness of the underlying strategy, or the specifics of how the Government intends to meet this goal. Many of the participants in Munyama et al’s study indicated that they would welcome a clearer outline of how individual actions fit into the wider issue of climate change (ibid).

Perception that individuals bear most of the burden

There is a feeling among some in Scotland that much of the responsibility to act on climate change has been placed on individuals rather than organisations. This is in part linked to a lack of clarity around who is responsible for reducing carbon emissions, and better contextual understanding of the roles played by individuals and organisations in the wider climate strategy would be beneficial (ibid).

Climate issues are highly morally/emotionally charged

Climate change is seen as a highly emotive issue by many Scots. This can lead to a reluctance to discuss the issue with others, as there is a perception that there is a “moral high ground” and with it a risk of being judged by others. People are very aware of other

people's behaviours and motivations around climate change, with any perceived hypocrisy likely to be seized upon (ibid).

Celebrity influencers have an impact on awareness and attitudes

Celebrities who campaign for climate action are frequently cited as having an influence on the Scottish public's awareness and attitudes around climate change. The most successful examples (e.g. Greta Thunberg, Sir David Attenborough) are credited with raising the profile of climate issues as well as helping to mobilise people to act. Again, a key part of the credibility of any would-be influencer is the public perception that they are free from any hypocrisy. The appeal of celebrity influencers was found to vary; for example young activists (e.g. Greta Thunberg) were felt to be more influential among younger people, and business leaders (e.g. Elon Musk) were perceived as influential on their respective industries, but less relatable to the general public (ibid).

There is a sense of pride in Scotland's environmental performance to date

The message that Scotland is a prominent global leader in environmental policy generally resonates well with the Scottish public. While there are some who feel that new climate targets may be a platitude or empty promise, the narrative that Scotland has already made important steps towards lowering emissions was mostly seen as encouraging (Scottish Government 2020f).

Action on climate change is seen as a priority for government

There is a perception that acting to prevent climate change should be a priority for the Government. As part of this, there is support for a green recovery from COVID-19 – the Government would be seen as having failed by some members of the public if they do not prioritise the environment when planning for recovery. While most respondents expected the Government to act on climate change, the majority were no more willing to change their own behaviours than in 2014 (Gray and Jackson 2020).

Framing climate change around 'Coming together' may be impactful post-COVID

Globally, there is evidence that people are likely to be receptive to climate change narratives focusing on the idea of coming together after the pandemic and working collaboratively to solve the next major threat (Long et al 2020).

Many feel that climate change is just as significant as COVID-19

While COVID-19 was perceived as a significant threat, and despite the extensive media coverage, overall there is a sense among the public that the climate crisis presents a threat of equal magnitude in the long term.

2.3 Learnings and best practice available for improving climate change communications, engagement and discussion

A number of resources regarding how best to promote climate change messaging were identified – the full details of which are in Appendix A. The following themes were prevalent throughout all of the guidance we identified - these can be regarded as the key points to be followed when creating messages to encourage awareness and action on environmental issues. This core guidance is summarised below:

Clearly communicate the urgency of climate issues

Emphasising the pressing need for immediate action, by employing language which portrays environmental issues as a "crisis" or similar, using metaphors to evoke other

life-or-death situations is recommended. But, there needs to be a balance between communicating urgency and presenting climate change as a solvable problem.

Frame arguments in a way that is relevant to the audience

It is important that action on climate change is positioned as something which is compatible with the audience's identity. Rather than a "one size fits all" approach, environmental messaging should be framed in a way that resonates with a particular segment of the public. This can be achieved by positioning environmental goals as in line with their political identity, religious beliefs, or another aspect of their identity. Breaking down climate related goals is more manageable and digestible for audiences.

Illustrate the argument

Rather than rely solely on factual arguments, communications can use a variety of other techniques to elicit sympathy. Examples include focusing on real-world consequences, telling a compelling human interest story, or employing visual aids. One paper recommended using metaphors relating the climate crisis to medical problems requiring treatment as this was a situation likely to encourage sympathy from the audience.

Ensure the source is credible, but keep language accessible

While it is important that messages originate from a source the audience considers trustworthy, avoiding excessive use of climate-related jargon or other technical language is also required to maximise the appeal to a general audience. Ensure messaging delivers proof that actions have a positive impact on climate change.

2.4 Key insights and conclusions to take forward to the qualitative phase

Climate change remains an important and urgent issue

The reviewed literature highlights a common view and presentation that climate change remains an important issue and requires urgent/immediate action from everyone. Although the impact of the pandemic may have diverted people's attention and immediate concerns away from climate change, it has illustrated (and reflected in the narratives being used) that collective action (national and global) and change are possible and can have a positive impact.

It is not always clear what the different climate responsibilities are and where they lie

So, while most/all of the reviewed literature effectively includes a collective call to action, there is often ambiguity about how this translates into actions for each of the constituent parties. For public-facing messaging, this ambiguity may well lead to the phenomena mentioned in the text of othering, whereby people may assume the ambiguity means someone else will take the necessary action. This contrasts with how communication about the pandemic is being framed which in Scotland has been very direct and personal in how it is communicated and targeted.

Drawing on this and from the other insights, the following elements were highlighted for further, more in-depth investigation:

- Selected terms/terminology prevalent across the different sources (Appendix C) in particular unfamiliar terminology such as Net Zero
- Narratives with a particular focus on:
 - Emphasising urgency and immediacy
 - Drawing on past successes or achievements on climate issues

- The recovery from COVID-19 could present some potential opportunities for change to climate policy and action.
- The need for collective action by individuals, organisations and governments
- A strong and urgent tone to reflect perceptions of climate change as a pressing issue.

3 Formative qualitative findings and analysis

This section sets out the findings of the qualitative phase of research, which drawing on the key conclusions from the desk review, aimed to:

- Understand how the COVID-19 pandemic has impacted on participants' views about climate change
- Identify and determine the level of understanding of and attitudes towards climate change-associated terminology and language
- Gain a better understanding of the required tone for meaningful communications about Climate Change post COVID-19
- Determine the most effective presentation of timings and targets for work to be done to tackle Climate Change
- Gain an understanding of the perceived responsibilities for action on climate change and the expected and trusted sources of communications
- Review the response to a range of potential narratives around post-COVID-19 Climate Change Communications
- Test attitudes towards potential URLs for a website focusing on Climate Change action.

Sample

A total of 6 online group discussions took place, attended by 28 participants. Online groups offered an ideal platform to facilitate an open debate and discussion around climate change in the context of COVID-19. The sample was recruited to provide representation from across the Scottish population in terms of age, geographic location, gender, and current level of engagement with climate change as an issue. A full breakdown of the sample, including the composition of each group, can be found in the appendices.

3.1 Spontaneous engagement with and views on climate change in the era of COVID-19

- People are still engaged with the topic of climate change but its significance is now relatively less important, at this time, to the pandemic
- The impact of Covid-19 has highlighted the influence that behaviours have on the environment and climate change
- Different perspectives on climate change remain across some population sub groups

People are still engaged with the topic of climate change but its significance is now relatively less important, at this time, to the pandemic

“Covid is more of an emergency...it’s on our doorstep...climate change doesn’t feel like it’s happening here and now - it’s a long term problem” (Female, 18-35yrs, mid-low concern)

Although the sample was recruited to include a mix of respondents based on reported levels of interest in climate change, it was clear from spontaneous responses that most respondents were widely engaged with the topic in general. There was no sense of cynicism or doubt around the existence of climate change and overall respondents acknowledged that it was an issue of importance. The most significant differences between those who were recruited as having “high” and “low” concern were their levels of historic interest in the issue and their relative concern about other issues (including COVID-19). The significance of climate change relative to the pandemic was key to this, with a strong sense that right now, COVID-19 takes precedence for many. For most respondents, their main priorities centred around restoring a semblance of normality, often through returning to previous study or work routines. This has led to an expectation that recovery from the pandemic, in health and economic terms, will be the primary focus of society at present. In contrast, climate change was widely understood to be an issue which has been present for some time, and one likely to remain for a long time to come.

The impact of Covid-19 has highlighted the influence that behaviours have on the environment and climate change

“It’s amazing to see the difference in the world as a result of lockdown” (Female, Semi Rural, 56-75yrs, mid-high concern)

“I thought wow – if this is what a few weeks does, maybe we should make a bigger effort.” (Female, 36-45 Edinburgh, 5 kids and grandchild)

For many across the sample, some aspects of the COVID-19 pandemic served to put a spotlight on climate change. The sense of things “slowing down” and the positive impact on the immediate environment (through a reduction in litter, air pollution etc) was highlighted by some. In addition, the pandemic control measures highlighted the potential impact of large-scale changes in behaviour, which refocused some participants on the possibilities of following similar action to address climate change.

There was a sense among many participants that lockdown in particular had drawn their attention to the impact of normal society on our world. References were often made to reduced air and road traffic, less noise in urban areas, cleaner air and rivers, and a perceived improvement in local biodiversity (although this term was not explicitly mentioned in any of the groups). Overall these were seen as positive effects of the restrictions aimed at stopping the transmission of COVID-19. Some participants made a connection between the effect of normal human behaviours and climate phenomena they had been aware of lately, including both in erratic weather in Scotland and more extreme cases worldwide.

COVID-19 had given many participants an appreciation of what a “real” global crisis situation felt like. This included an understanding that in emergencies, the public may have to accept being told what to do or having their behaviour restricted by governments. Beyond this, participants’ experiences of COVID-19 revealed that outlining a clear, staged plan with an easily understood goal when addressing urgent issues is highly beneficial in times of crisis.

A few participants noted some negative consequences of COVID-19 for climate change. In general, it was recognised that the pandemic had become the priority for the Scottish Government at the expense of climate change. The focus on the virus also meant that less time was spent on areas of positive progress, with respondents giving the example of electric vehicles as something which had been a high-profile issue in 2019, but now

had a greatly reduced profile. In practical terms, some observed that new hygiene rules had created additional waste from disposable masks and other protective equipment, and the advice to avoid public transport was likely to result in increased use of private cars.

Different perspectives on climate change remain across some population sub groups

I am worried about it, but I don't think it'll affect us much. I think it's future generations.
(Male, 53 years – married with 3 kids, rural)

While respondents' levels of concern around climate change varied, the themes which arose from the group discussions tended to be consistent across the sample as a whole. That said, some differences in attitudes were observed between sub-groups, particularly concerning age, urban/rural environments lived in, affluence, and the type of work respondents did.

Older respondents typically expressed a different perspective on climate change to younger respondents. Older respondents were often more receptive to the idea of preserving the planet for future generations as a motivator. Barriers to engaging positively with climate change initiatives were also an area of difference between age groups, with older participants reporting more feelings of fatalism and less optimism around climate change. Barriers in general tended to be more impactful for older participants. For example, older participants focused more on the actions of other state actors who were seen as both having a negative impact on the climate and being unwilling to change, such as Russia, China or the USA.

The main point of difference between respondents from rural and urban areas was inclusiveness. There was a sense that in order to be fully inclusive, initiatives to deal with climate change have to take practical needs from a rural perspective into account. For example, to allow rural areas to use their cars less there needs to be adequate public transport networks, or to allow more working from home there needs to be workable internet broad band across rural communities. This also applied in terms of affluence where climate change interventions were felt to need to be accessible to all regardless of income. For example, to ensure that less affluent members of society move towards buying and using ultra low emission cars and vehicles (ULEV), electric cars need to be more affordable.

Respondents' occupations had a notable bearing on their understanding of climate change issues, as well as their knowledge of climate change terminology. Respondents working in oil and gas, agriculture, car manufacturing, and construction tended to be more aware of issues and terms relating to climate change as this was a requirement for their respective fields.

The gender and ethnicity of respondents had no noticeable impact on their attitudes towards climate change.

3.2 Language

Respondent use of and attitudes towards climate change language was explored within three key parts of the focus groups: spontaneously recalled language used by respondents to discuss climate change; understanding and resonance of a range of climate change terms and terminology; and probing around the understanding and

meanings associated with key terms that were flagged by the Scottish Government and CXC clients as important.

3.2.1 Spontaneously recalled language used by respondents to discuss climate change

The spontaneous discussion revealed that respondents tended to use language related to climate change to refer to environmental issues in general, with most respondents not making a clear distinction between climate change and other negative environmental impacts. Nevertheless, a wide range of language themes came through from this spontaneous discussion, which indicated that there was a sense of complexity around the issue of climate change. The broad range of terms spontaneously used (Table 1.) and the lack of distinction between environmental issues suggested that there is not presently any consistent, unifying vocabulary which the people of Scotland are getting behind.

Another theme to emerge from the spontaneous discussion was that the language employed by participants tended to relate to personal actions around climate change, rather than the global issue. This language often centred around the tasks or jobs they had been encouraged to focus on, such as ‘recycling’, without a connection to a clear and unifying goal.

Table 1. Associated climate change language/terms

<p>Overall the spontaneous discussion highlighted:</p> <ul style="list-style-type: none"> • A vague understanding of climate change <ul style="list-style-type: none"> ○ Most in the general population target audience don't distinguish clearly between climate change and other environmental issues ○ Language used around climate change appears to extend broadly to the wide range of environmental issues ○ A fairly wide range of language themes were used during spontaneous discussion indicating a relative sense of complexity around the issue of climate change • A tendency to focus on personal roles • Most spontaneously used language that focused on the negative impact of climate change at the bigger picture level • Little clear perspective of the “big picture” goal at a positive level • There was reference to climate emergency but primarily amongst those with a mid or high level of engagement in climate change issues 			
<p>Language/terms associated with</p>			
<p>Personal responsibility:</p> <ul style="list-style-type: none"> • Biodegradable • Reduce, Reuse, Recycle • Eco Friendly 	<p>“Bigger picture” initiatives:</p> <ul style="list-style-type: none"> • Wind farms • Sustainability • Green movement 	<p>“Bigger picture” impacts:</p> <ul style="list-style-type: none"> • Deforestation • Ozone layer • CO2 • Greenhouse effect • Rising temperatures • Weather/Extreme weather • Global warming 	<p>Specific vocations: Those working in a job that has a connection to environmental impact, such as the car industry or oil and gas, tended to use a wider range of terms:</p> <ul style="list-style-type: none"> • Car emissions • Zero emissions • Carbon neutral • Low carbon
<p>Language/terms not used in spontaneous discussion included:</p>			

- Net zero
- Green recovery
- Planetary health (or any language about the bigger picture positive end goal or in relation to the positive journey)
- Biodiversity

3.2.2 Understanding and resonance of a range of climate change terms and terminology

Participants were presented with a range of climate change related terms (Appendix C) in order to gauge their understanding of and levels of resonance with them.

Again, there was a tendency for many respondents to gravitate towards the more familiar terms. Respondents often picked out global warming in particular as a familiar phrase. Terms under the “specific areas of action” heading also tended to stand out to participants, as these actions were often recognised by respondents as things which they had been asked to do, or felt that they personally should focus on.

Key terms from the research brief were frequently singled out. That said, this was most often because respondents didn't understand or were unfamiliar with them. These terms included: just transition, planetary health, green recovery, wellbeing economy and net zero. However, as an exception, climate emergency was often mentioned as an impactful phrase which was understood.

Some respondents were curious about the use of the word 'inclusive' as they didn't immediately associate this with climate issues.

The term 'irreversible environmental damage' was seen as being particularly negative, scary and potentially demotivating, but also without clearer context it was difficult for many participants to understand its full meaning.

3.2.3 Understanding and meanings associated with key selected terms

Just Transition

That doesn't mean anything to me (Male, 18-35yrs, mid-low concern)

This term jumped out in most groups as one which was simply not understood. That said, most respondents felt this term was a valid enough term after it was explained. The logic of ensuring that moves towards a sustainable Scotland should also seek to ensure all are included made sense to most. However, the overall concept of “just transition” was typically seen as a minor issue compared to COVID-19 and then climate change in a general sense. Overall, there was a sense that the idea of a non-inclusive transition (for example, adopting policies which overlook rural communities or people on low incomes) would be seen as a barrier, but ensuring an inclusive transition was not a strong motivator.

Green Recovery

"It can't be a vanity project to score a few points." (Male, 53 – married with 3 kids)

This was another term which was unfamiliar to most respondents. There was a fair degree of curiosity about what this might mean, with the word 'green' meaning many made the connection to climate issues without necessarily understanding fully. Overall, green in this context was received positively as an established term rather than seen as

outdated. Historically, green may have been seen as linked to climate activism in particular but in the groups, there was an overall sense that climate change is now seen as an issue important to everyone.

In the context of recovering from the pandemic, the impact of this term was lessened, as green recovery was not immediately associated with recovery from COVID-19. Instead, respondents indicated that they would assume this term referred to efforts to ensure the climate recovered from the damage being caused. This tied in with a wider sense that there is still weak or no association between COVID-19 recovery and climate change issues for many participants. While both issues were regarded as important, there was a potential risk that too much emphasis on a green recovery (as it relates to COVID-19) could result in worries over slowing the recovery from COVID-19. With the pandemic still perceived as a more urgent and pressing problem, the idea that climate issues may slow the economic recovery process could be an issue for some. Beyond this, it was clear from the discussions around the term green recovery that many respondents were looking for language that encapsulated what the end goal is. For many respondents there was a sense that green recovery could take this important role.

Planetary Health

“Planetary Health...it’s just not personal enough.” (Female, 56-75yrs, mid-high concern)

This term was familiar for some respondents across different parts of the sample, and was also recognised by some as a phrase used by Sir David Attenborough. However, for many this was not a recognised term.

Some respondents felt that it sounded jargonistic to them. Another potential issue here is that this term doesn’t give a sense of a defined goal in relation to what climate change activities will positively result in.

Wellbeing Economy

Again, Wellbeing Economy was not a term that respondents were familiar with. Spontaneous reactions indicated that it did not sit comfortably for most. It was often viewed as a “term for terms sake” and sounded like political jargon – something which tended to be met with cynicism from many respondents.

Climate Emergency

“The word emergency gives a sense of urgency...it says we need to act now, not tomorrow” (Female, 18-35yrs, mid-low concern)

“I suppose it is an emergency but are there too many emergencies now with Covid and everything?” (Female, 56-75yrs, mid-high concern)

This term was met with spontaneous recognition from most respondents, some of whom associated it with the First Minister’s announcement in 2019. This term had the added advantage of being easily understood by those who were not already familiar with it. Use of “emergency” communicates a sense of immediacy or urgency, something respondents felt was necessary if climate change messaging was to be effective.

The term prompted some respondents to consider whether the threat posed by climate change was being underestimated by society, especially with COVID-19 providing a clear example of what an emergency being taken seriously looks like. Presenting the issue of climate change as an issue of importance now had universal credibility. Respondents pointed to what they saw as the increasingly extreme consequences of

climate change, including the ‘Great Storm’; the Stonehaven train derailing; ice caps melting; and other extreme weather and related issues worldwide such as floods or wildfires.

Some respondents felt that climate crisis was an interchangeable term that gives a sense of real immediacy. For some, the word crisis felt even more pertinent to the current situation than emergency.

One potential drawback of this term was the potential for emergency as a descriptor to feel over-used in the current context of the pandemic.

Net Zero

“If asked to describe what net zero is I would struggle...and I’m really in the dark about what it means I need to do” (Male, 56-75yrs, mid-high concern)

Awareness of this term was patchy. It was not spontaneously used at all, but some respondents were able to guess its meaning. For some, it had a “science” feel to it, which gave a sense of credibility. That said, a few erroneously associated “net” with fishing. This term was perceived as somewhat dry and lacking in emotional connection. The fact that it implies an end goal is a positive, although it was clear from the research that this goal would have to be more clearly defined with some additional information. The phrase by itself also doesn’t immediately suggest any personal relevance to individuals. Despite these limitations, net zero was thought to be a term with potential to be effective, provided it could be given sufficient meaning and context. Having a quantifiable target to measure progress against resonated strongly with respondents, who have been familiarised with this concept through terms like R-rate in COVID-19 communications. There was a sense that net zero could serve as an equivalent to the R-rate in climate change communications. Respondents who were not certain that they understood the science behind this type of measurable goal still felt that the broad meaning of the R-rate was clear. If net zero is positioned as the ultimate goal to be reached at the end of a clearly defined path, it could serve a similar function.

Use of language - conclusions

Language used around climate change appears to extend broadly to the wide range of environmental issues, with little distinction between climate change and wider environmental issues.

A wide range of language themes were used during spontaneous discussion. Language used often appeared to relate to personal actions rather than with climate change as a global issue. At present, there is no language that appears to give a unified sense of the end goal in dealing with climate change in a meaningful and emotive way.

Climate emergency is a term that has some existing recognition, and is understandable to those who haven't encountered it before. It can be used interchangeably with climate crisis if 'emergency' begins to feel tired. Overall this was felt to be a valid and credible description of the current situation.

Beyond this, other key terms are not yet established and do not sit comfortably in the wider lexicon of climate change. Just transition was not easily understood, and does not feel like a key priority while COVID-19 is unresolved. Green recovery was not immediately understood and not naturally associated with COVID-19 recovery, but was seen as potentially useful if placed in the correct context with clear goals for recovery from COVID-19 and even in relation to recovery from climate change in general. Planetary health and wellbeing economy were both felt to sound too much like policy jargon, and were therefore both less credible and harder to understand. Net zero sounded scientific and credible to respondents, and although it was not readily understood by all, this term could potentially be established as the R-rate for climate change.

3.3 The tone that should be used in communications around Climate Change

The discussions in the groups around tone were more straightforward, with consensus across all parts of the sample being achieved fairly quickly. Respondents were presented with three options for tone: that we “must”, “need” or “should” take action on climate change.

Respondents across all parts of the sample agreed that the tone that should be taken in relation to communications surrounding action to deal with climate change is one of 'must' do. No respondents were in doubt that the issue of climate change is serious. This appeared to be the case for respondents even in the middle or lower end of the recruitment scale in relation to personal concern.

“We MUST take action...it's serious and no pussyfooting around...but needs to be backed up and with all politicians on board.” (Female, 18-35yrs, mid-low concern)

“After C19 we're in a good place to start again...now is the time to start towards really making a change” (Female, 18-35yrs, mid-low concern)

It appears that COVID-19 has brought a wider acceptance that there are major issues which “must” be dealt with in our world and climate change is one of these.

Respondents' experiences of COVID-19 also gave them a sense that a suitably urgent tone can bring real and immediate action from all sections of society. COVID-19 also brought an acceptance that when an issue is urgent, we will be told that we must take action, both nationally and at a personal level, and that this could be done through legislation.

However, respondents were also clear that at present they do not perceive current communications around climate change to reflect a "must do" tone, with the exception of messaging from activists such as Greta Thunberg. The Scottish Government, UK Government, and major world powers were not seen as having adopted this tone. There was a sense that COVID-19 has been a distraction which pulled the world's attention away from the climate, and many countries and individuals simply did not care about it at present.

Within Scotland and the UK, most respondents did not see a sense of urgency or perceive a clear plan of action to address climate change issues. While many respondents didn't like being told what to do, they could accept this as long as there was sufficient urgency and a clear plan leading to an end goal.

"You need to take the people with you, but so they don't feel they're being forced along the path." (Male, 53, married with 3 kids)

In addition to urgency, hope and optimism are also important within the tone and the language used around climate change. Otherwise, respondents felt that there would be little motivation to take action.

"They need to get people willingly engaged...paint a vision of a desirable future for our children and grandchildren" (Female, 56-75yrs, mid-high concern)

"It's important to use a strong tone to keep it up the agenda...but don't tell us what to do or people won't listen...you need to win people around rather than giving them diktats" (Male, 56-75yrs, mid-high concern)

This section of the group discussion led to the emergence of seven elements which respondents felt could create the sense of optimism required to motivate action:

- A clear end goal, e.g. net zero, clean planet, healthy planet, green recovery
- A clear plan or "route map" as seen in the COVID-19 response
- A sense of being "all in this together" at many levels (including global, Scotland, business, community, personal)
- Highlighting the progress made on both climate change and COVID due to collective action
- Remind people that there is still time to act
- Emphasise that small actions can make a big difference
- Deal with the barriers to optimism, such as Trump, China and Russia

3.4 The use of targets and timings within communications

Respondents were asked to give views on the use of specific targets and timings within communications. Again, views expressed were very consistent across the sample.

[Re. house building] *"Why not now?!"* (Female, 35-55yrs, mid concern)

"I'll be well gone by then" (Male, 55-75, low concern)

In general, there was a degree of cynicism in relation to targets being set. Overall, the sense was that a target alone did not communicate a strong enough sense of an “end goal” to be meaningful or motivate action. Respondents felt that targets for climate change issues changed too frequently to feel like strong commitments. Some targets were felt to be too far in the future to be effective motivators. General targets were also seen as lacking a meaningful role for individuals. As in other parts of the discussions, the idea of other (especially larger) countries 'cancelling out' the efforts of Scotland in relation to our national targets was a barrier for some.

However, respondents' experiences of COVID-19 have helped them to develop a perspective on how targets can and should be used. There was a strong preference for targets which were presented as part of a “route map”, with a clear long-term end goal supported by a series of immediate, short, and medium goals. This was seen as providing a much clearer idea of what was needed. If the route map also provided a role for individuals, this helped to create a sense of ownership. Respondents felt that without a route map, there was little sense of optimism, that they would find it harder to see an end goal as relevant, and that it would be too easy to defer action until later. Essentially, the perception was that without a framework providing a clear sense of what the journey will look like with what should be done immediately, adopting an urgent tone in communications would be meaningless.

“If there was a clear path to net zero that would make a world of difference.” (Male 18-24yrs, mid concern)

“It's important to have something to work towards and means you can measure progress.” Female, 18-35yrs, mid-low concern)

“2045 is quite a while away so there's a danger people will just think 'oh we've got ages so no need to worry just now.’” (Male, 18-35yrs, mid-low concern)

3.5 Responsibility for climate change

“It makes it more achievable to know everyone is involved and has to play their part” (Male, 18-35yrs, mid-low concern)

Respondents were asked to consider who they felt should be responsible for dealing with Climate Change and also who should be the source of communications aimed at them. A clear preference emerged for responsibility to be shared. As with COVID-19, climate change was felt to be 'everyone's problem' and therefore the expectation was that responsibility should fall on all levels of society:

- Individuals and communities
- Employers, businesses, and local authorities
- UK, Scottish and Global Governments

Alongside an urgent tone, respondents felt that there should be increasing social stigma and other consequences for those who did not take on their responsibility to act on climate change, in another parallel to the COVID response.

Scottish Government responsibilities

For participants, the precedent for how the Scottish Government is expected to act for an emergency issue has been set by COVID-19. The 'all-in-it-together' message is strong but must be made credible through strong leadership. The core responsibility for

the Scottish Government was seen as providing leadership and overall direction for the climate change response. In practical terms this was felt to include:

- Setting the 'Route Map'
- Establishing a tone of urgency
- Motivating action with both positive and negative incentives, including through legislation
- Facilitating the action plan, with budgets, communications (education and practical information) and initiatives
- Taking the plan to key stakeholders (individuals, communities, local authorities, businesses as both producers and employers, the UK government, and the global community)

3.6 Sources of information

Within the theme of 'all in this together' there was a sense that communications should come from a range of sources, but the expectation was that the Scottish Government would take a leading role in establishing the tone and themes of the discourse around climate change.

The Scottish Government's role was seen as focusing on mass communications within Scotland, as seen with the COVID response. Communications directly from leaders would be welcomed. While politicians in general are subject to cynicism from the public, Nicola Sturgeon's performance as First Minister during the pandemic has fostered a reputation for clear and trustworthy communications. The Scottish Government was also expected to have a role in establishing Scotland's place on the global stage in relation to climate change.

Scientists and other experts were seen as an important information source in times of crisis. They are seen as independent and impartial, and as a source of credible information. However, they can come across as "detached" and lacking in emotive arguments.

"If climate change is an emergency then why aren't we having scientists give daily briefings like for COVID? It would help keep it on people's minds." (Female, 35-55, BC1C2, high concern)

Activists and third sector organisations were regarded as a strong voice on climate issues (and in some cases such as Greta Thunberg, were regarded as a global force). That said, while being a strong voice, they can also be seen as too combative at times. They are expected to primarily perform two roles: holding other stakeholders to account; and representing and communicating with key groups, such as young people or specific business areas.

Community groups communicating to neighbourhoods was seen as an important channel, as local initiatives and support are important in order to motivate, empower and help ordinary people in making changes to lifestyles or behaviours.

Businesses would be expected to communicate what they are doing to help reduce climate impacts to their customers, and generally expected to be visible in their efforts on climate issues. The impact of COVID has also demonstrated that working patterns can be made flexible when there is sufficient need. Employers would be expected to

adapt to climate issues in a similarly flexible manner if needed, and engage in dialogue with employees to facilitate this.

3.7 Narrative themes

By way of a summary to discussions respondents were asked to comment on a number of specific narrative points. Generally, reactions to all of these were widely positive. Many of the key themes were represented, and there was a feeling of balance between the work done to date and the important job to do.

“Climate change is the greatest threat facing mankind”

This was regarded as the starting point for framing climate change in Scotland – where the narrative needs to start. It is essential to communicate the idea that we are facing an emergency or a crisis. The importance of climate change as an issue was accepted even in the wider context of the ongoing pandemic.

“To tackle the climate emergency, Scotland has committed to reach net zero emissions of all greenhouse gases by 2045”

The term climate emergency appears to be either established, familiar language or easily understood. However, at present net zero is not a term with a widely established meaning, so a clear explanation is needed. Respondents believed net zero could become a meaningful target, but this would require it to be contextualised with more information and an emotive argument for why our society needs to achieve it. The year 2045 was regarded as being far too long-term to be effective motivation, so a staged 'route map' is needed to supplement this overall goal.

“The pandemic has shown rapid change is possible and we’ll build on that”

This statement was accepted as true, with COVID-19 providing a precedent for what Government can do, and an expectation of what it should do. However, the idea of a green recovery in a COVID context was seen as separate to, and a potential distraction from, fixing the economic damage caused by the pandemic. If it can be clearly established that a green recovery would also help us to bounce back from COVID, this would be a positive. That said, respondents reiterated that the term “green recovery”, at its most valuable level, could relate it to the bigger picture recovery from climate change.

“Establishing a robust, wellbeing economy matters more than ever now, with an unequivocal focus on climate change, fair work, diversity, and equality”

This narrative was seen as lacking in focus. While the points made were accepted as valid, respondents felt that the overall idea of a just recovery should go without saying, as otherwise universal buy-in on climate change issues would be impossible.

“We’ve made great strides in tackling climate change. In the last 30 years, we’ve halved Scotland’s greenhouse gas emissions. Our energy sector is now 83% carbon neutral. The waste sector is 73% carbon neutral”

There were mixed views on the use of past success stories, and it was clear that care needs to be taken to get the right balance. At one level they created a sense of pride and motivation, but with this came a risk of encouraging a complacent attitude if past success is overstated.

“But we need to take on tougher challenges – making our transport system more sustainable for example”

As above, there were mixed views on this statement. The feeling was that a fine balance will be required in communications to ensure that people are optimistic that the end goal is possible and worthwhile, while also avoiding the implication that the task at hand is too difficult. The route map was considered to be essential in striking this balance.

“Everyone - governments, businesses, communities, individuals - needs to play their part”

This was regarded as an absolute truth, and one which would be central to motivating the population. However, it was felt that in practice this will require the Scottish Government to take a strong lead, as they have done with COVID-19.

“Scotland’s invented solutions to global problems before and will do so again. We’re working with California on the world’s leading wave and tidal energy centre, for example”

Being a world leader was motivating for many respondents. There was felt to be real value in Scotland working with, and learning from, other countries such as Iceland. However, there is a risk in focusing too much on this narrative, as many respondents also found excessive focus on the global effort against climate change to be demotivating due to a sense that the big international ‘players’, who are major sources of emissions, are not pulling their weight.

“We’re investing in a green economic recovery from the pandemic”

This narrative was meaningless to some respondents, while others felt it suggested that there might be a delay or extension to the COVID recovery process in order to ensure a green recovery. This was perceived very negatively, as the priority for most respondents is still very much controlling the virus and recovering economically. As such, any climate opportunities created by the pandemic should be presented as “asides” unless they can be shown to have a valid and complimentary contribution to economic recovery.

“The UN Climate Change Conference (COP26) is happening in Glasgow next year and gives us a platform to share our progress”

Again, Scotland having a place on the world stage was seen as good, but there was a significant level of cynicism around the type and level of commitment associated with this sort of event. With the more immediate focus on COVID-19 recovery, these feelings of cynicism were likely to be amplified.

“We’ve come a long way. The next chapter will be more challenging, but we need to succeed. We’re doing it already. So let’s keep at it Scotland.”

This conclusion was broadly liked. It was accepted that there will be a need for rhetoric to keep society focused on the problem. Again, use of an accessible and relevant route map was felt to be the best way to achieve this. There may be a risk of a 'call to Scotland' being read as patronising, so placing this in the wider context of past achievements and next steps is essential.

3.8 Discussion of potential URLs

As a final element of the discussion, respondents were given a small amount of time to comments on two potential web address URL options for a website to present climate change related information.

Both options presented had their supporters and their detractors:

- **Climate.scot** was seen as being simple, easy to remember, and clearly associated with government. However it was also regarded as being dull or uninteresting, with a few respondents also feeling that it could be confused for a weather information site.
- **NetZeroNation.scot** was typically seen as more interesting, and had associations with campaigning or activism due to sounding more like a slogan. There was a general sense that this lent itself well to being a campaigning site. The major drawback to this URL was the current lack of recognition around the term net zero, which meant that its success would depend on this term being well established and understood by the general public.

A few respondents made other suggestions for URLs over the course of the discussion. These broadly followed the theme of NetZeroNation.Scot in that they tended to employ campaigning language:

- ClimateCrisis.Scot
- GreenRevolution.Scot
- NetZeroNation.Gov.Scot

3.9 Key insights and conclusions to take forward to the quantitative phase

COVID-19 has had an impact on the way people view the environment and climate change

Although the main focus of attention has been on dealing with the pandemic, people are still engaged with the topic of climate change and recognise its importance, but its significance is relative to the pandemic. As such, there is an expectation that the priority now should be on working to return to a semblance of normal life and health and economic recovery. Participants did not necessarily see or link a green recovery as being part of the wider recovery from the pandemic. Although there is recognition that there is a climate change emergency/crisis, this was widely seen as an issue which has been present for some time and is likely to remain for a long time to come in comparison with the pandemic.

However, the impact of COVID-19 on behaviours has made people more aware of/notice the potential impact behaviours can have on the environment and climate change. For instance, references were often made to reduced air and road traffic, less noise in urban areas, and cleaner air and rivers as a result of pandemic control restrictions.

Also, there was recognition from the efforts to tackle the pandemic, that it is possible for society to come together both nationally and globally in an emergency to tackle global issues including climate change.

Climate change vocabulary and understanding is limited

It appears that the people of Scotland, in the most part, do not have a wide vocabulary around the issue, and are not familiar with many of the key terms discussed in the groups. In particular, work needs to be done to explain net zero if it is to be made meaningful both as a target, and at an emotional level. Similarly, just transition, planetary health, and wellbeing economy are not widely understood. Work needs to be done to establish these and other terms in order to make them more meaningful and relevant to the Scottish public.

People are looking for a strong, urgent tone, with clear targets and path to follow
 Everyone recognised a collective responsibility for tackling climate change but that this requires leadership and direction. As such, they’re looking for a presentation that is both relevant and motivating for all that is strong and urgent in tone but is optimistic too. Setting out a route map, similar to plans for COVID recovery, can be central to this.

To offer more robust conclusions, and the ability to compare across a range of key sub-groups with confidence, key terms were further tested in a quantitative phase – reported in the following section.

4 Quantitative findings and analysis

This section sets out the findings of the quantitative phase of research, which drawing on the findings from the previous research phases, aimed to:

- Test awareness and understanding of key climate change terms.
- Measure interest levels and perceived personal relevance of key terms.
- Explore the tone and appeal of broad messages around climate change.

Sample

An online survey was conducted between 10-16th September 2020, with a representative sample of Scottish adults. The survey was distributed by JRS’s online panel partner and there were 1,004 (base) respondents.

The sample breakdown is shown in the figure below:

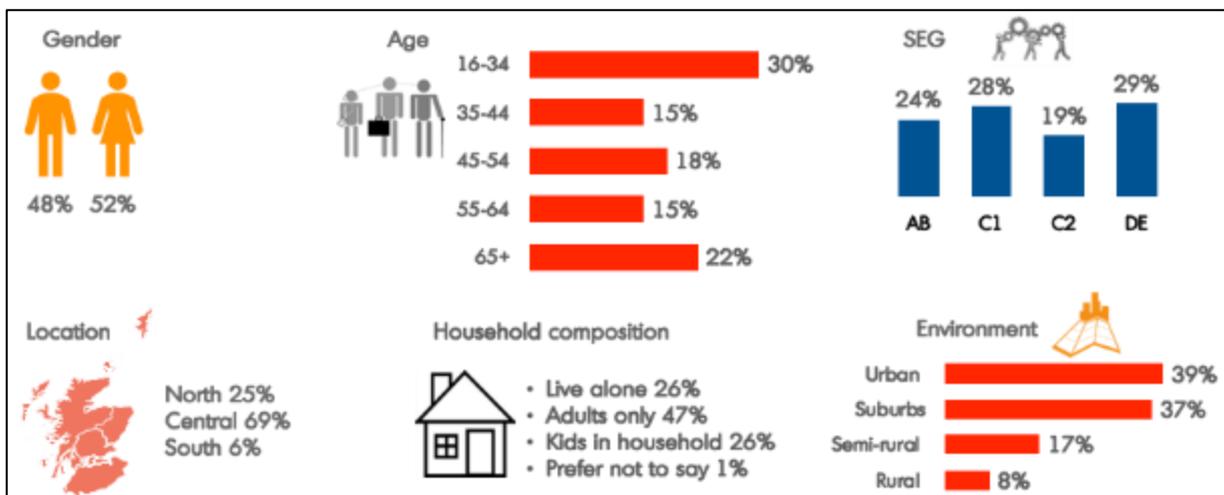
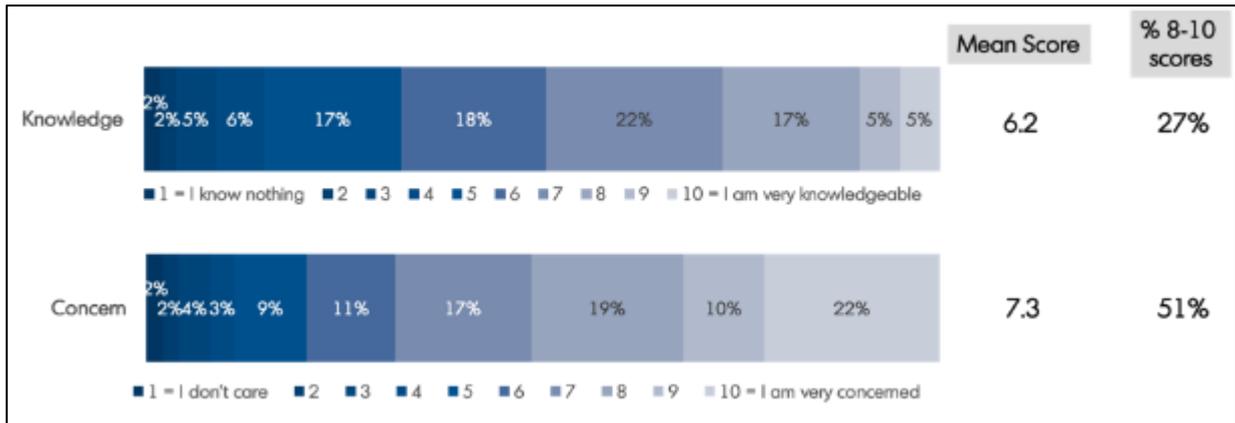


Figure 1: Breakdown of sample by demographic

4.1 Levels of knowledge and concern about climate change in general

Respondents were asked to rate their level of knowledge about climate change issues on a 10-point scale, where 10 was “I am very knowledgeable” and 1 was “I know nothing”.



Q5 How concerned would you say you are about climate change? Base: All respondents 1004
 Q6. And how knowledgeable would you say you are about climate change issues? Base: All respondents 1004

Over a quarter (27%) rated themselves 8 or higher on the scale, indicating that they felt they had high levels of knowledge on the subject. At the opposite end of the scale, 15% rated their knowledge of climate change as 4 or lower.

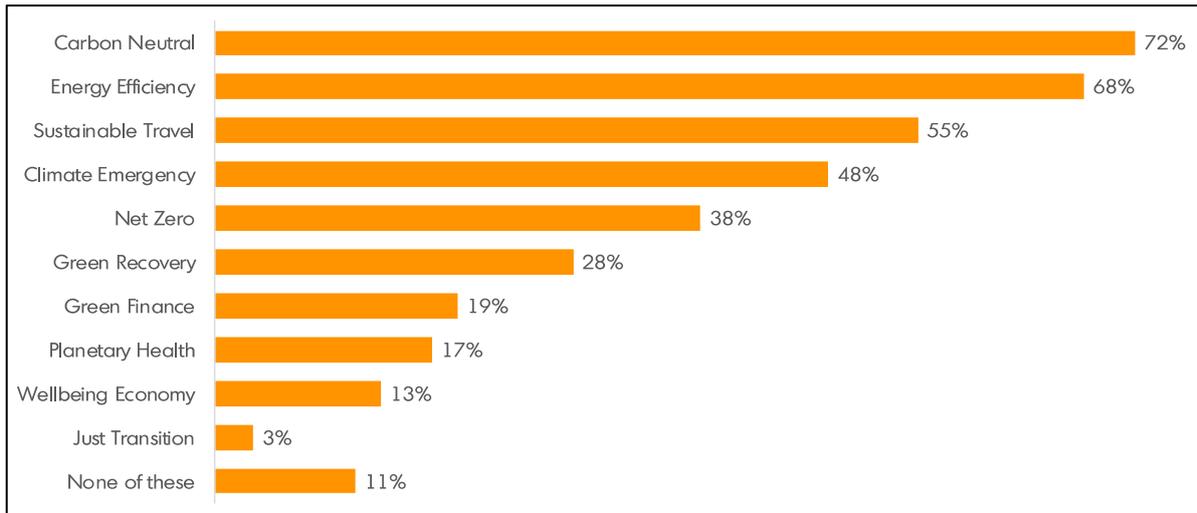
In contrast, when asked to rate their levels of concern about climate change on a similar scale, just over half (51%) claimed to have high levels of concern, giving scores of 8 or more. There was a significant overlap between knowledge and concern, with 85% of those giving 'high' knowledge ratings also rating their concern levels as high.

4.2 Awareness of climate change terms

Respondents were asked to highlight from a list which terms relating to climate change they were familiar with (have seen or heard being used).

Just 11% were not familiar with any of the terms tested. However, only three terms were recognised by more than half of the population: carbon neutral (72%), energy efficiency (68%), and sustainable travel (55%). Almost half (48%) were familiar with the term climate emergency, and 38% were familiar with net zero.

Terms relating to economic and post Covid-19 elements were least well known. Green recovery was familiar to just over a quarter of respondents (28%). Fewer than 1 in 5 were familiar with green finance (19%), planetary health (17%) and wellbeing economy (13%). Only 3% were familiar with just transition.



Q7 Which of the following terms relating to climate change are you familiar with i.e. have seen or heard being used? Base: All respondents 1004

Differences in awareness by sub-groups

Those who claimed greater levels of **knowledge** about climate change were, not surprisingly, more familiar with all terms. However, even amongst this group, familiarity of the terms just transition, wellbeing economy, planetary health, and green finance was low.

Those with greater levels of **concern** about climate change also tended to have greater familiarity with the various terms.

Other demographic differences in evidence were that:

- Males were more familiar than females with the terms: carbon neutral, climate emergency and net zero.
- Respondents aged over 65 were more familiar than other age groups with the terms: carbon neutral, energy efficiency and sustainable travel.
- Respondents aged 16-34 were more likely to recognise the term wellbeing economy than other age groups.
- Higher socio-economic groups were more likely to recognise the terms: carbon neutral, sustainable travel and net zero;
- While almost 1 in 5 of those in DE socio-economic groups did not recognise any of the terms.

Full details of differences in awareness by term are detailed in Appendix D.

4.3 Key terms

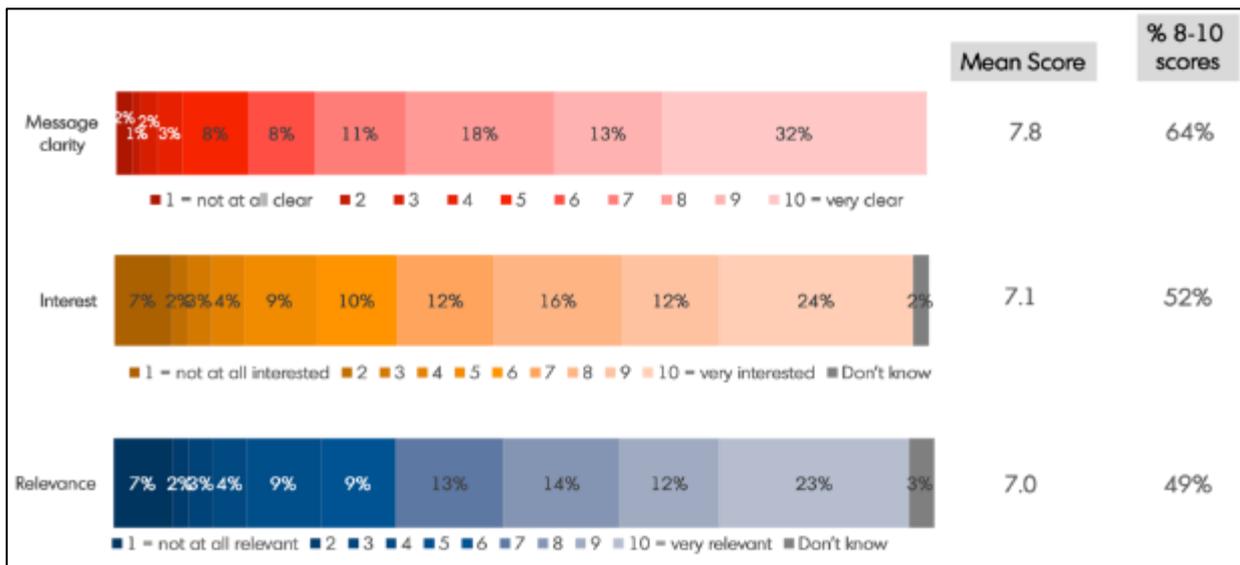
Four key terms (net zero, climate emergency, green recovery, just transition) were tested in greater depth. Respondents were given an explanation of each term, and asked to rate these in terms of clarity, interest in hearing more, and how relevant each term was to them personally. 10-point scales were used throughout.

Climate Emergency

CLIMATE EMERGENCY - Increasing global temperature is leading to rising sea levels, challenges around food production, a scarcity of fresh water, the global spread of diseases, and a decline in animal and plant species. Declaring a climate emergency means we are committing to taking immediate action, including reducing our greenhouse gas emissions, in order to prevent this.

Almost two thirds (64%) of respondents gave this message a score of 8-10 for clarity, where 10 indicated “very clear”. In contrast, only 8% of respondents scored the message 4 or below. The clarity of the message was rated the highest by those with high levels of knowledge about climate change (85% of whom gave scores of 8-10), and those with high levels of concern about climate change (83%).

Just over half (52%) of respondents scored their interest in finding out more about climate emergency between 8 and 10, where 10 indicated “very interested”. Lower interest levels (scores of 1-4) were indicated by 16% of respondents. Interest in finding out more was higher among those with high levels of knowledge about climate change (78% gave scores of 8-10), those with high levels of concern about climate change (81%), and females (56%).



Q10a How clear do you find this explanation? Base: All respondents 1004

Q10b How interested are you in hearing more about Net Zero? Base: All respondents 1004

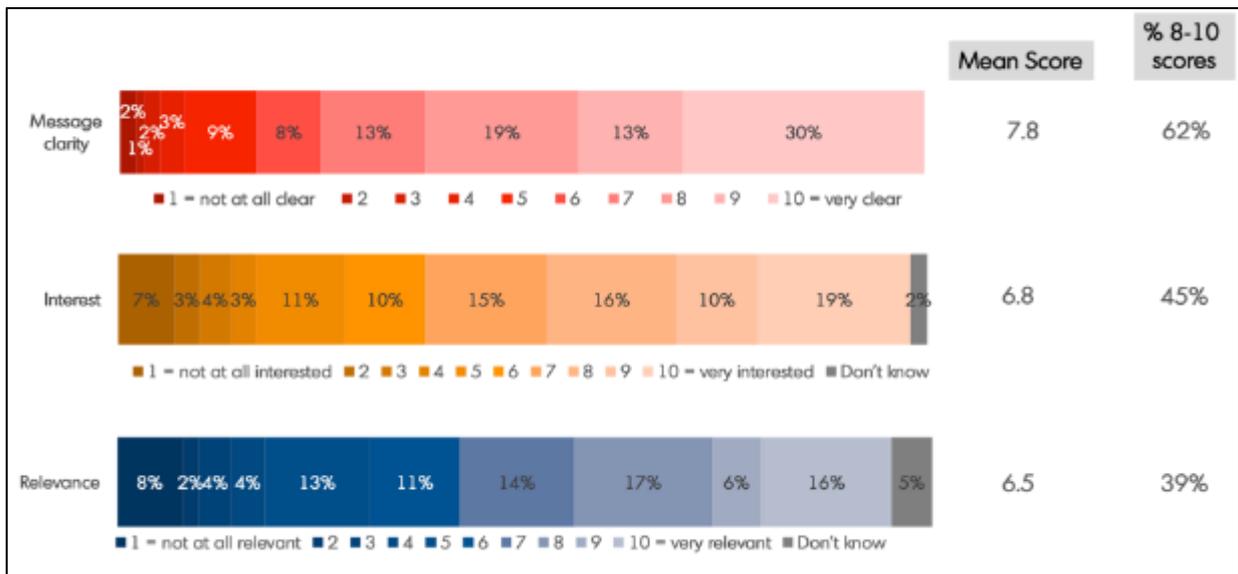
Q10c How relevant is Net Zero to you personally? Base: All respondents 1004

On a scale of 1-10, where 10 indicated “very relevant” and 1 indicated “not at all relevant”, almost half (49%) of respondents scored this message 8 or higher. Conversely, the message was scored 4 or lower by 16% of respondents. Perceived relevance was higher for those with high levels of knowledge about climate change (74% gave scores of 8-10), those with high levels of concern about climate change (77%), Urban dwellers (54%) and Females (54%).

Net Zero

NET ZERO - means that we reduce carbon emissions to an absolute minimum and capture the remaining emissions in the atmosphere through schemes like tree planting.

Almost two thirds of respondents (62%) rated this message 8-10 for clarity, where 10 indicated "very clear". The message was rated a 4 or below on this scale by 8% of respondents. Message clarity was highest for those with high levels of knowledge about climate change (82% gave scores of 8-10), those with high levels of concern about climate change (77%), and those aged 65 or older (71%).



Q8a How clear do you find this explanation? Base: All respondents 1004
 Q8b How interested are you in hearing more about Net Zero? Base: All respondents 1004
 Q8c How relevant is Net Zero to you personally? Base: All respondents 1004

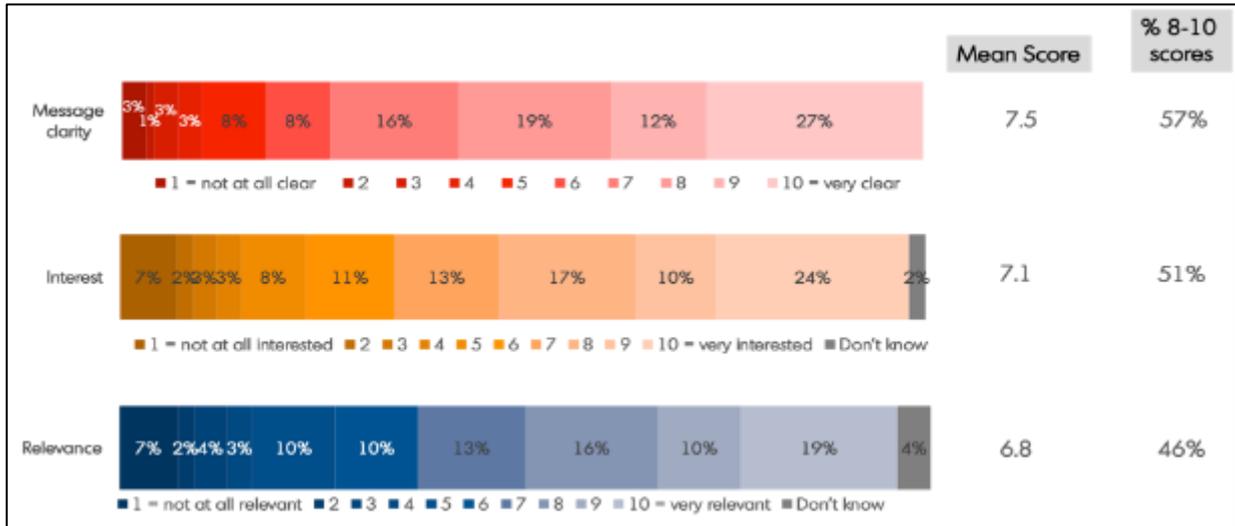
Less than half (45%) of respondents rated this message 8-10 for interest in hearing more, where 10 indicated "very interested". The net zero message was rated a 4 or lower on this scale by 17% of respondents. Interest in finding out more was higher for those with high levels of knowledge about climate change (74% gave scores of 8-10), those with high levels of concern about climate change (72%), urban dwellers (51%), and those resident in Northern Scotland (51%).

Just under 4 in 10 (39%) of respondent rated this message 8-10 for personal relevance, where 10 indicated "very relevant". Perceived relevance was higher for those with high levels of knowledge about climate change (68% gave scores of 8-10), those with high levels of concern about climate change (65%), and urban dwellers (45%).

Green Recovery

GREEN RECOVERY - A green recovery would see Scotland rebuilding in the wake of the Covid-19 pandemic in a way that prioritises sustainability and green practices across all society. For example investing in the growth of the renewable energy sector instead of fossil fuels.

Over half (57%) of respondents rated the clarity of this message at 8-10, where 10 was "very clear". One in ten (10%) gave the message a rating of 4 or below. Message clarity was highest for those with high levels of knowledge about climate change (79% gave scores of 8-10), and those with high levels of concern about climate change (76%).



Q9a How clear do you find this explanation? Base: All respondents 1004
 Q9b How interested are you in hearing more about Net Zero? Base: All respondents 1004
 Q9c How relevant is Net Zero to you personally? Base: All respondents 1004

Just over half of respondents (51%) scored this message 8-10 for interest in hearing more, where 10 indicated "very interested". Conversely, 15% gave the green recovery message a score of 4 or below on this scale. Interest in finding out more was higher for those with high levels of knowledge about climate change (78% gave scores of 8-10), those with high levels of concern about climate change (76%), urban dwellers (57%), and females (55%).

Less than half (46%) of respondents rated this message 8-10 for personal relevance, on a scale where 10 represented "very relevant". The message was rated 4 or lower by 15% of respondents. Perceived relevance was higher for those with high levels of knowledge about climate change (74% gave scores of 8-10), those with high levels of concern about climate change (72%), urban dwellers (52%), and females (50%)

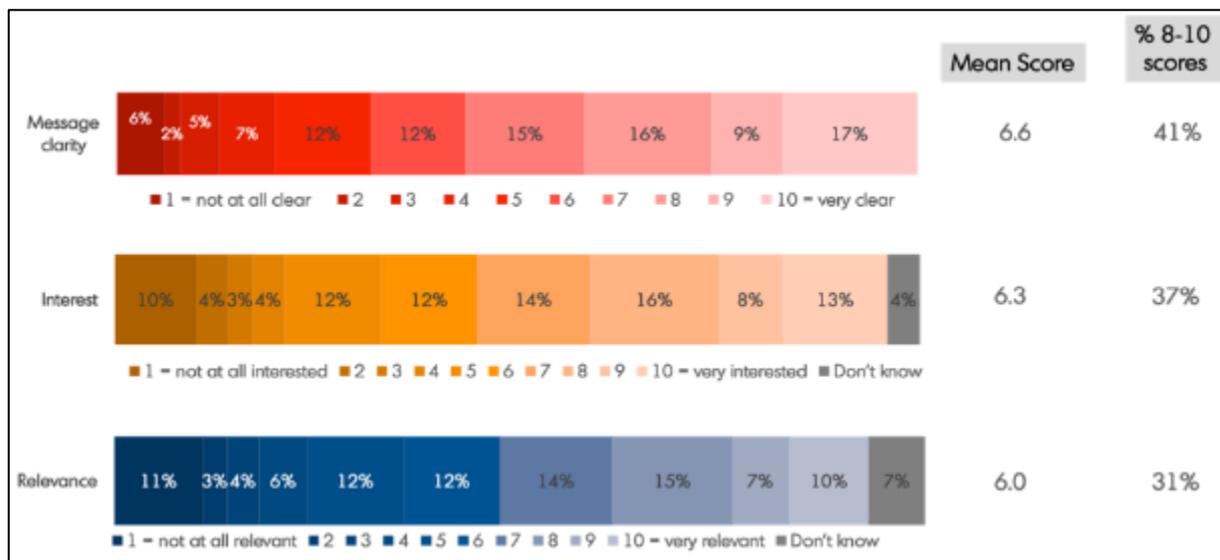
Just Transition

JUST TRANSITION - A just transition seeks to ensure that the substantial benefits of the actions we are taking to tackle climate change and rebuild our economy are shared widely, while also supporting those who stand to lose economically – be they regions, industries, communities, workers or consumers.

Although the term just transition was recognised by only a small number of respondents (3%), familiarity with this term did correspond with greater levels of clarity, interest and perceived relevance of the explanation.

Just over 4 in 10 respondents (41%) rated this message 8-10 on a scale where 10 represented "very clear". There were 20% who rated the message a 4 or lower on this scale. Message clarity was highest for those with high levels of knowledge about climate change (66% gave scores of 8-10), those with high levels of concern about climate change (57%), and females (45%).

On a scale measuring interest in hearing more about this message, where 10 represented "very interested", 37% of respondents rated just transition 8-10. In contrast, the message was rated 4 or below by just over 1 in 5 respondents (21%). Interest in finding out more was higher for those with high levels of knowledge about climate change (65% gave scores of 8-10), those with high levels of concern about climate change (58%) respondents aged 16-34 (47%), respondents in households with children (44%), urban dwellers (43%), and females (41%).



Q11a How clear do you find this explanation? Base: All respondents 1004

Q11b How interested are you in hearing more about Net Zero? Base: All respondents 1004

Q11c How relevant is Net Zero to you personally? Base: All respondents 1004

Less than a third (31%) of respondents rated the message 8-10 in terms of personal relevance, on a scale where 10 indicated "very relevant". Just under a quarter (24%) rated the message 4 or lower on this scale. Perceived relevance was higher for those with high levels of knowledge about climate change (55% gave scores of 8-10), those with high levels of concern about climate change (49%), respondents aged 16-34 (41%), and females (34%).

Comparison of the key terms

In comparing the results across the four key terms presented, each gained highest ratings for clarity of explanation, with interest and personal relevance levels slightly lower.

In terms of message clarity, respondents rated the explanations for the climate emergency and net zero messages the highest.

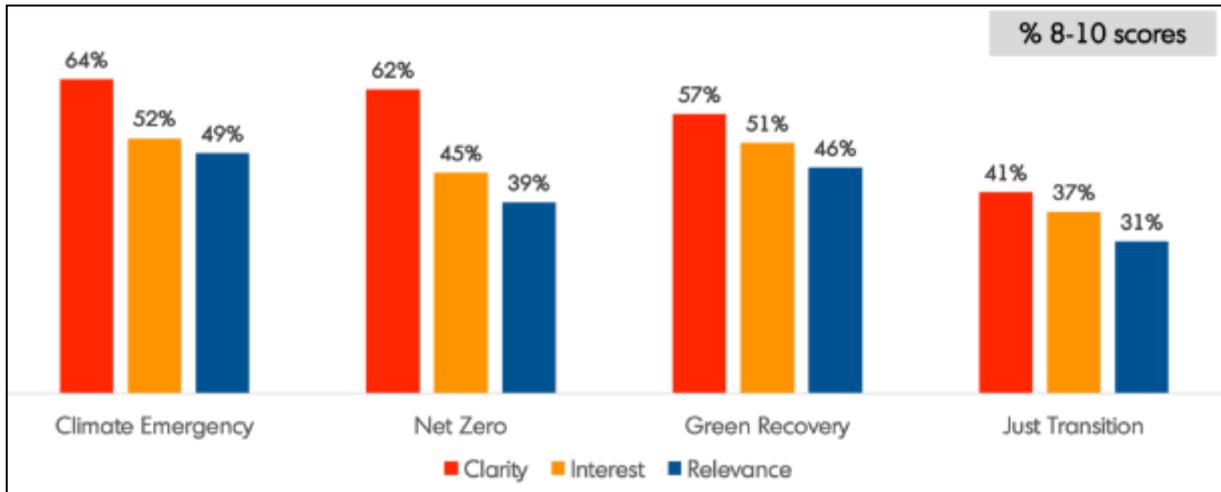


Figure 2: Comparison of Key Terms by Clarity, Interest and Relevance

Both interest in hearing more and perceived personal relevance were greatest for climate emergency and green recovery. Interestingly, despite the high levels of clarity for net zero as a term / concept, interest and perceived personal relevance levels were much lower.

This comparison indicates that using climate emergency as a key term appears to have merit. In addition, green recovery is a term/concept which generated relatively high interest and could therefore potentially be used more in communications.

Of the four key terms explored, just transition appears to have least potential for widespread use with the public.

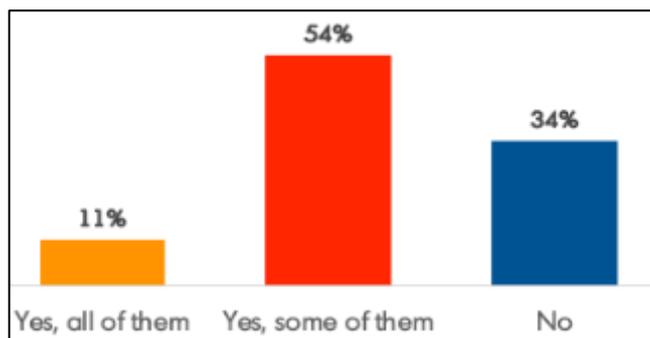
4.4 Scottish Government targets

Respondents were presented with a number of current Scottish Government climate change targets for Scotland.

- From 2024, newly-built homes use only renewable or low carbon heating systems
- Phase out the need for new petrol and diesel cars and vans by 2032
- Net zero by 2045 with interim targets:
 - Reductions of at least 75% by 2030
 - 90% by 2040

Awareness of Scottish Government targets

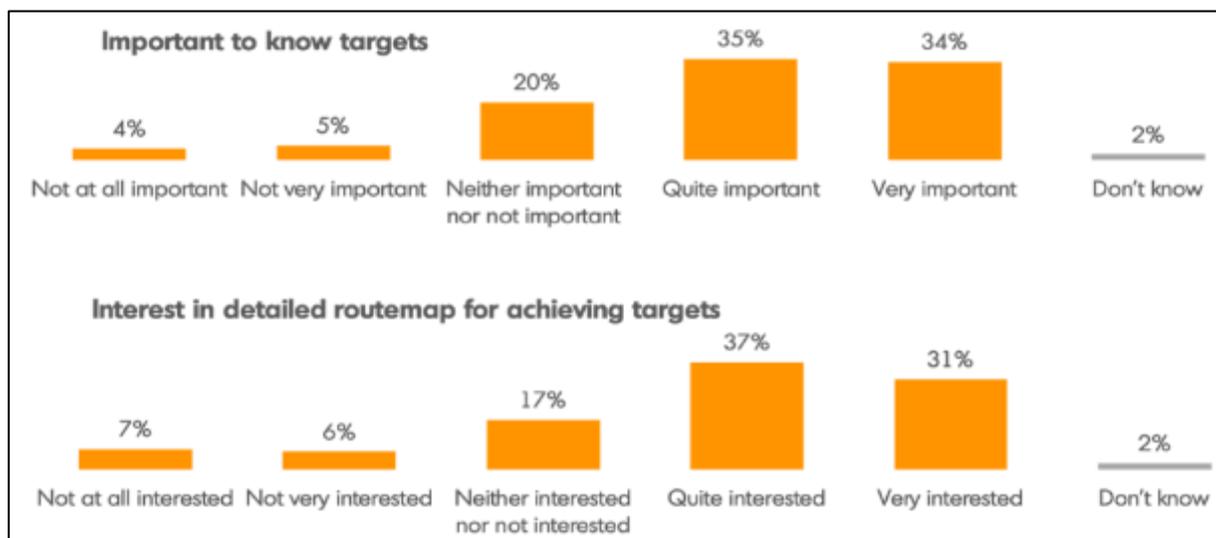
Just over 1 in 10 (11%) were aware of all targets, and a further half (54%) were aware of some. Around one third (34%) indicated that they were not aware of any of these targets. Those more knowledgeable about climate change, and those aged 18-34 were most likely to be aware of all



targets. Females, those aged 35-44, respondents in the D and E socio-economic group, and those least knowledgeable or concerned about climate change were more likely to be unaware of the targets.

Importance/interest in Scottish Government targets

Respondents were asked how important they felt it was to personally know about climate change targets, and also how interested they would be in a detailed route map which set out the targets and how they could be achieved.



Q12 Were you aware of these targets? Base: All respondents 1004

Q13 How important is it to you personally to know about climate change targets like these? All respondents 1004

Q14 If a detailed routemap for achieving these targets was published by the Scottish Government, how interested would you be in this? All respondents 1004

Almost 7 in 10 (69%) felt it was important to know about climate change targets, and a similar proportion (68%) were interested in a detailed route map. Only 9% felt that it was either "not very" or "not at all" important to be aware of the targets, with 13% either "not very" or "not at all" interested in the route map.

Across the demographic groups, levels of perceived importance and interest in the route map were broadly consistent. However, those with greater levels of knowledge / concern about climate change were even more engaged.

4.5 Climate change action

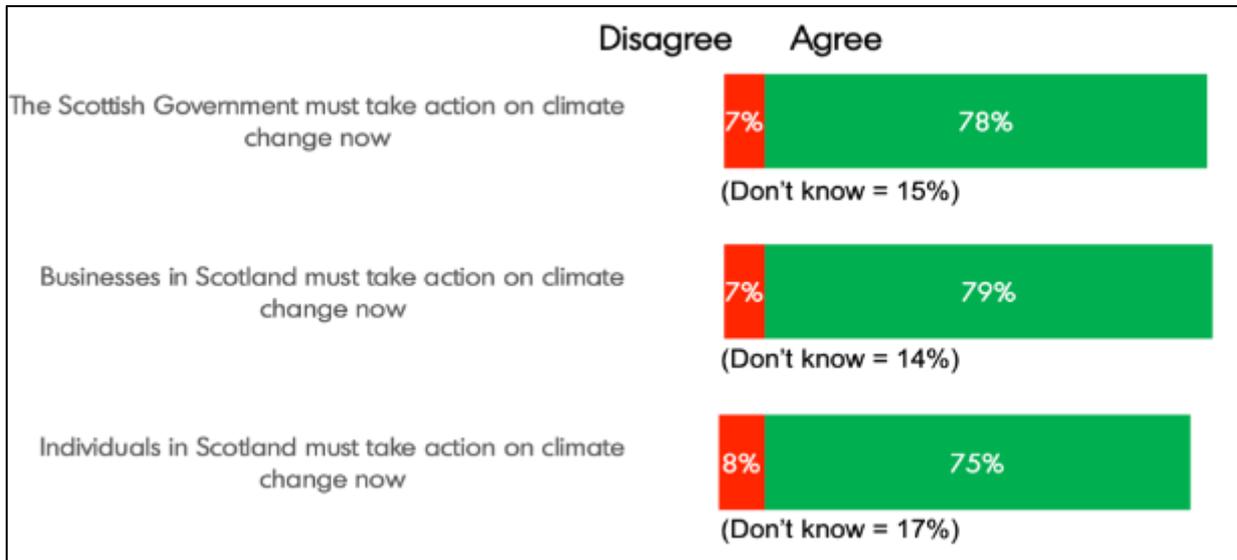
Respondents were asked to what extent they agreed or disagreed with the following statements:

- The Scottish Government must take action on climate change now
- Businesses in Scotland must take action on climate change now
- Individuals in Scotland must take action on climate change now

At least three-quarters of respondents (adults across Scotland) agreed that action **MUST** be taken on climate change by the Scottish Government (78%), businesses (79%) and individuals (75%).

Agreement on the requirement for action by Businesses and Government was marginally higher than for individual action. However, this indicates the presence of both

readiness, and a level of expectation for action to be taken, at all levels of society, and supports the use of a strong tone in talking about tackling climate change.



Q15 To what extent do you agree or disagree with the following statements? Base: All respondents 1004

4.6 Future statements

Respondents were asked to look at the following statements about what can be achieved through taking action on climate change and consider how motivating these visions of Scotland in 2045 were to them personally.

Statement A - In 2045, Scotland’s buildings will be warmer and more energy-efficient. Heating will be provided from clean, sustainable sources. More people will be walking, cycling or using public transport with electric cars for essential trips. We’ll be eating a better diet with more that’s been grown locally, supporting our local producers. Our air will be cleaner, nature will be flourishing and our people will be healthier and happier.

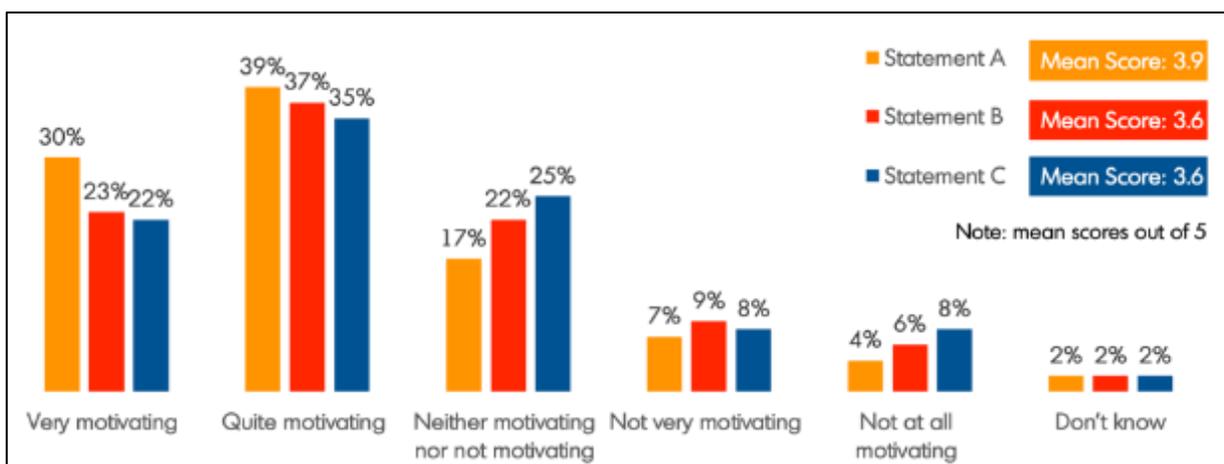
Statement B - In 2045, we have cut our carbon emissions in line with the Climate Change Act, including meeting our interim targets of at least 56% reduction by 2020, 75% by 2030 and 90% by 2040. We have built many more wind farms and solar panels so that all our energy can now come from renewable sources. All our buildings are energy efficient and have low carbon heating systems. Diesel and petrol vehicles have been replaced with electric vehicles, supported by a national network of charging points. Our local roads have been redesigned to prioritise cycling and public transport for shorter journeys. All remaining emissions are offset through significant tree planting, peatland restoration and carbon capture and storage technology.

Statement C - In 2045, we have all contributed to tackling climate change through our actions and choices. We use less energy at home and work. We have replaced our gas boilers with low emissions heating systems and have insulated our homes and work places to make them energy efficient. We rarely use cars. We travel by foot or other non-motorised transport for short journeys, and use public transport and electric vehicles for longer trips. By shopping locally we have strengthened our vibrant communities, and we all enjoy the clean air and flourishing nature that comes from our climate friendly actions.

Statements most motivating overall

Statement A was the most motivating of the three, with 69% of respondents rating it "very" or "quite" motivating. This was true across the sample, even for those who were least concerned or knowledgeable about climate change.

Those most concerned or knowledgeable about climate change found each of the statements more motivating than other groups. Those aged 65 or older found all three statements less motivating, possibly due to a perceived lack of relevance of the target date of 2045.

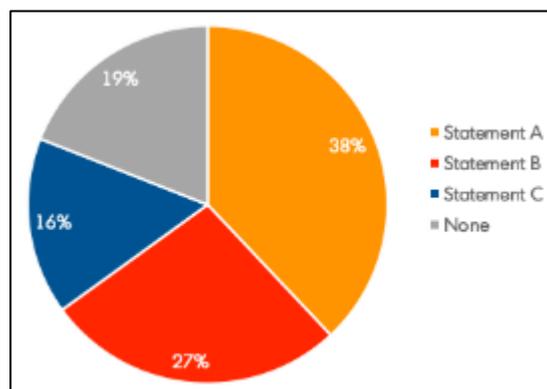


Q16 Please look at the following statements about what can be achieved through taking action on climate change. How motivating do you personally find this vision of Scotland in 2045? Base: All respondents 1004

Statements most likely to motivate action on climate change

When directly compared, Statement A also emerged as the favourite to motivate action on climate change, with 38% of respondents choosing Statement A as most motivating. It was especially popular among females (44%) and those in the D and E socio-economic groups (45%).

However, it is important to note that for 1 in 5 adults in Scotland (19%), none of these visions of the future were motivating enough to encourage them to take action. This was especially true for those **least** concerned about climate change (51% none) and those aged over 65 years (32%).



4.7 Summary and key conclusions

Levels of public concern about climate change are higher than knowledge

Only just over a quarter of respondents felt quite knowledgeable about climate change, whereas half of respondents had high levels of concern. Those with higher levels of knowledge also had higher levels of concern.

People are more familiar with longer established climate change terminology

As in the qualitative findings, people appear more familiar with terms that have been in use longer or more widely. Carbon neutral, energy efficiency and sustainable travel were the only terms which more than half of adults in Scotland felt familiar with. The term climate emergency was recognised by almost half.

Whereas newer/less established terms, such as just transition, wellbeing economy, planetary health and green finance have low awareness, even among those who reported high levels of knowledge about climate change.

Explanation and qualification of terminology can improve clarity of understanding

When the key terms were explained, clarity was felt to be best for climate emergency and net zero.

Clarity of understanding terms does not in itself directly lead to interest or perceived personal relevance

While the explanation of net zero was amongst the clearest of the terms tested, interest and personal relevance levels were lower. Conversely, whilst green recovery was not highest rated in terms of clarity, there were relatively high levels of interest and perceived relevance for this term.

There is a link between relevance and interest i.e. if a term was more relevant people were more interested and vice versa but it is unclear which drives which.

Having climate change targets and a routemap to achieving them helps

Many Scots are aware that climate change targets exist, although over half tend to know some rather than all of these targets. More than two-thirds feel it is important to them to know about targets, and a similar proportion would be interested in seeing a routemap with detail on achieving these targets.

A clear and concise climate/climate change vision for Scotland can be motivating

Between the three statements for the future tested, the shortest, simplest message statement (Statement A) was deemed most motivating.

In 2045, Scotland's buildings will be warmer and more energy-efficient. Heating will be provided from clean, sustainable sources. More people will be walking, cycling or using public transport with electric cars for essential trips. We'll be eating a better diet with more that's been grown locally, supporting our local producers. Our air will be cleaner, nature will be flourishing and our people will be healthier and happier.

It was clear from responses that education and building knowledge around climate change, through using consistent, easy to understand terms and clear concise messages, will be important. Climate emergency and green recovery are the terms with the highest potential to engage and prompt action.

There is strong support for action at all levels of society and a clear indication that a strong 'must do' tone is most appropriate for the topic of climate change.

Lastly, emphasising key targets and how these can be achieved will also be important in motivating Scots to act.

5 Conclusions and recommendations

5.1 Conclusions

The impact of COVID-19 has widened the narrative around climate change

The research highlighted that climate change is still being presented and viewed as a serious and urgent issue. With the arrival of the COVID-19 pandemic and its impact on society, the climate change narrative has widened to highlight that: collective action and change are possible, and in recovering from the pandemic, there is the opportunity to introduce further measures to tackle climate change.

Although people care about climate change it is not top of mind for most

Both the desk review and qualitative discussions highlighted that the main focus of attention for the public is on dealing with and recovering from the pandemic – people are still engaged with the topic of climate change and recognise its importance (51% of survey respondents said they have a high level of concern about climate change) but its significance is relative to the pandemic at this time. As such, there is an expectation that the priority now should be on working to return to a semblance of normal life and health and economic recovery.

A large array of climate change and environment related terminology is in circulation but vocabulary and understanding is limited

The desk review revealed that a large and wide range of climate change related terminology is in use/being presented (Table 2 below presents observations for key terms). However, from the primary research it appears that participants, in the most part, do not have a wide vocabulary around the issue and are not familiar with many of the terms presented and discussed in the research. Language used around climate change appears to extend broadly to the wide range of environmental issues, with little distinction between climate change and wider environmental issues. Language used often appeared to relate to personal actions rather than with climate change as a global issue.

Participants also appear more familiar with terms that have been in use longer or more widely. Carbon neutral, energy efficiency and sustainable travel were the only terms which more than half of participants felt familiar with. The term climate emergency was recognised by almost half.

Whereas newer/less established terms, such as just transition, wellbeing economy, planetary health and green finance have low awareness and understanding, even among those who reported high levels of knowledge about climate change.

Table 2. Key word/terms observations

Term	Understanding of the Term	Understanding of the Concept	Perceived Level of Priority for Respondents	Role in Communications for Scottish Government	CORE TASK
Climate Emergency	This term is broadly known and or instinctively understood	The concept of the term, that is 'we are in a position now relating to the climate that needs to be taken very seriously', is understood across the population	It appears logical that this term needs to be established as a precursor to getting the people of Scotland engaged with the work that needs to be done to tackle climate change	This term will be central to laying the context of climate change action communications from the beginning and probably up to 2045	Can be used in all communications
Net Zero	At the time of the research	The concept of Net Zero is better	Providing a clear explanation of Net	Net Zero can be the equivalent of the R-Rate	Explain the term. Establish it as the

	few fully understand the term; and on explaining the term does not clearly bring any sense of emotional connection or engagement	understood, once explained - as the end target of the required work- namely to balance carbon emissions and removal	Zero is felt to be important given it has the potential (like the R-Rate) to be the accepted quantifiable target for climate change -action	for C-19. It therefore needs to be presented as part of the communications that allow the people of Scotland to understand what we are trying to achieve. Ideally, Net Zero will be presented alongside communications that will bring a more emotional connection to the end goal	objective, a quantifiable measure of progress to the end goal, and the end goal itself. Consider terms and language that can encapsulate the end goal in a more emotional and less 'statistical' way
Green Recovery	Broadly felt to be understood- but potentially associated more as recovery from climate change; rather than specifically recovery from C-19	On prompting the idea is understood – albeit, a green recovery is felt to be of secondary importance to the people of Scotland than a strong economic recovery	Lower priority- in comparison to either- C-19 economic recovery; or the bigger picture climate change recovery	This term will need to be explained if it is to focus on C-19 related recovery. Care will need to be taken to ensure recovering from C-19 in a green way is not being done at the expense of a slower wider economic recovery	Explain and make clear that it relates specifically to C-19 recovery Consider whether using this in a wider context – relating to recovery from climate change - can be useful
Just Transition	Not known or understood unless fully explained Potentially too jargonistic for the general population	On prompting the audience understands the broad idea that work undertaken to tackle climate change will need to be done in a way to allow inclusion of all parts of the population of Scotland	For those who require a 'Just Transition' to allow involvement it is very important. That said, the idea of a JT is regarded as a 'must have- no brainer' without which a large proportion of the population will be excluded from the efforts	The concept is more important than the term. The term Just Transition, needs to be used in its proper context and in understanding that JT is expected not hoped for	Establish the idea of the concept rather than focusing too much on establishing the term
Planetary Health	Understood by some but criticised as sounding too jargonistic	Accepted as a concept but out of context this term is seen as vague	Broadly the idea of PH is important but only as a part of the overall conversation with the people of Scotland	Use sparingly and with care for the general public audience	Establish alongside other terms that clearly show what we are working towards
Wellbeing Economy	Not understood and definitely feels too jargonistic and politically based	The concept is understood	But the idea of a WE is too vague to have real value	Use sparingly and with care for the general public audience	Establish alongside other terms that clearly show what we are working towards

Although some climate change terms like Climate Emergency are self-explanatory and instinctively understood, many terms are not. However, as Table 2 above indicates, with sufficient explanation they can be.

However, it is important to note that clarity of understanding terms does not in itself directly lead to interest or perceived personal relevance. The quantitative results showed that while the explanation of net zero was amongst the clearest of the terms tested, interest and personal relevance levels were lower. Conversely, whilst green recovery was not highest rated in terms of clarity, there were relatively high levels of interest and perceived relevance for this term.

As such, work needs to be done to fully explain and establish these and other terms in order to make them more meaningful and relevant to the Scottish public.

The idea of a green recovery is relevant and important to people in Scotland but as a term it needs to be clearly explained

Although most participants in the qualitative discussions did not spontaneously see or link the idea of a green recovery as being part of the wider recovery from the pandemic,

the findings from the quantitative survey found that when explained, the term green recovery was more interesting and relevant to them. Participants in the qualitative phase felt that in recovering from the pandemic, any opportunities to tackle climate change must be shown to have a valid and complimentary contribution to the wider economic recovery as restrictions are relaxed.

It is not always clear what the different climate responsibilities are and where they lie
Ambiguity around the roles of individuals, organisations, businesses and governments in tackling the climate crisis is evident across all three phases of the research. Desk review sources have put forward arguments for the roles to be played by various organisations, but the overall picture of responsibility remains unclear to the public, as evidenced by the qualitative and quantitative data. That said, respondents felt that the government response to the COVID crisis by presenting targets, a process for recovery, and the roles that each level of society is expected to play in achieving recovery, was a good example of how to be clear about who needs to do what. The prevalence of this theme throughout the research indicates that developing a stronger and more detailed understanding of the Scottish Government's vision for climate change, and specifically how the public and other stakeholder groups fit into this vision, will be key to motivating action.

People are looking for a strong, urgent tone, with clear targets and path to follow
Linked to the previous point, all respondents in the qualitative research recognised a collective responsibility for tackling climate change but that this requires leadership and direction. The quantitative research reinforced that there is strong support for action at all levels of society, and a clear indication that a strong 'must do' tone is most appropriate for the topic of climate change. It highlighted that a clear and concise climate/climate change vision for Scotland can be motivating. Providing leadership and overall direction for the climate change response was seen as a core responsibility of the Scottish Government. Within the theme of 'all in this together' there was a sense that communications should come from a range of sources, but the expectation was that the Scottish Government would take a lead role in establishing the tone and themes of the discourse around climate change.

In contrast to climate change communications, participants in the qualitative research highlighted how communication about the pandemic has been very clear, direct and personal in how it is communicated and targeted. The use of a routemap to highlight recovery from COVID-19 was seen as a useful way to show how to reach climate change targets. This was backed up in the quantitative survey results where more than two-thirds felt it is important to them to know about targets, and a similar proportion would be interested in seeing a routemap with detail on achieving these targets.

5.2 Recommendations

In light of the findings and conclusions from this study, in order to develop further Scottish Government public engagement activity on climate change and to help facilitate support for a 'green recovery' from the pandemic, the key considerations/recommendations are as follows:

- Educate and build knowledge around climate change by explaining key terms. To improve clarity of understanding and personal relevance, frame these and illustrate arguments in ways that are relevant to the lives of the different audience groups. Specifically:
 - **Climate Emergency** – Can be used in all communications
 - **Net Zero** - Explain the term. Frame it as a target end goal alongside communications that will bring more of an emotional connection to the end goal
 - **Green recovery** - Explain and make clear it specifically aims to benefit the economic recovery from COVID-19
 - **Just transition** – For the public audience, as this term lacked meaning, establish the idea of the concept rather than focusing too much on establishing the term
 - **Planetary Health, Wellbeing Economy** – As these are not widely understood terms, use sparingly with the general public, alongside other terms that clearly show what we are working towards
 - To help create a sense of optimism to motivate action and demonstrate leadership, it is important to present:
 - A clear and concise vision, to help the public understand where everyone needs to get to – the end goal.
 - An accompanying routemap with clear targets, to help people in Scotland better understand the required journey and actions to reach the end goal. Emphasising key targets and how these can be achieved
 - A sense of being “all in this together” and all having a role to play at several levels (including global, Scotland, business, community, personal)
 - The progress made on both climate change and COVID-19 due to collective action
- In addition, it will be important to:
- Remind people that there is still time to act and as such there is still hope that we can turn things around. An optimistic message is required in government communications to ensure that there is a clear call to business, communities and individuals that we all have a role to play in tackling the climate crisis.
 - Emphasise that small actions can make a big difference
 - Deal with the barriers to optimism, such as a sense that the big international 'players' are not pulling their weight.
- Clearly communicate the urgency of tackling climate change but balanced with presenting climate change as a challenge that can be solved. There is strong support for action at all levels of society and a clear indication that a strong 'must do' tone is most appropriate for the topic of climate change.
 - Ensure the source is credible, but keep language accessible - while it is important that messages originate from a source the audience considers trustworthy, avoiding excessive use of climate-related jargon or other technical language is also required to maximise appeal and understanding.

Appendix A – Methodology

ClimateXChange commissioned JRS to undertake this research. The work was split into three sequential phases:

1. Carry out a brief desk review of existing and emerging climate change and COVID-19 related communications; to inform the following qualitative phase.
2. A qualitative phase of focus group discussions with a cross-section of the Scottish public to explore responses to different narratives identified and created in light of the desk review and identify the most compelling language, framing and messaging for climate change moving forward.
3. Administer an online survey to quantitatively test qualitative findings from phase 2 with a large, representative sample of the Scottish public.

1. Desk research – reviewing existing evidence to identify key message territories

The aim of the brief desk review was to identify existing and emerging evidence relating to climate change and COVID-19 and explore:

- How climate change is being presented and discussed
- Emerging evidence on changing public attitudes and values in light of the COVID-19 pandemic
- Learnings and best practice available for improving climate change communications, engagement and discussion

The resources were identified through discussion with the client team and independent online searches – search keywords/phrases included: ‘climate change’, ‘COVID-19’, ‘pandemic’, ‘communications’, ‘narratives’. They were drawn from current and recent (mostly from 2018 onwards) Scottish Government publications and communications, stories in the media, communications from third sector organisations, and academia.

Resources relating to climate change, COVID-19 and other national emergencies were considered, with a specific focus on general public attitudes, best practice in engaging the public and specifically looking at message framing, language and tone. A systematic process was used to review identified resources to highlight potential narratives, message frames, specific language and potential tones for testing in the qualitative phase. Sources that did not offer the required insight were discarded.

2. Qualitative Testing of Message Territories, Language and Framing

The qualitative phase of research, drawing on the findings from the desk review, aimed to:

- Understand how the COVID-19 pandemic has impacted on participants’ views about climate change
- Identify and determine the level of understanding of and attitudes towards climate change associated terminology and language
- Gain a better understanding of the required tone for meaningful communications about climate change post COVID-19
- Determine the most effective presentation of timings and targets for work to be done to tackle Climate Change
- Gain an understanding of the perceived responsibilities for action on climate change and the expected and trusted sources of communications
- Review the response to a range of potential narratives around post-COVID-19 Climate Change Communications
- Test attitudes towards potential URLs for a website focusing on climate change action

A total of 6 online group discussions took place, attended by 28 participants. Online groups offered an ideal platform to facilitate an open debate and discussion around climate change in the context of COVID-19.

Sample

The sample was recruited to provide representation from across the Scottish population in terms of age, geographic location, gender, and current level of engagement with climate change as an issue. JRS used their network of Scotland-wide experienced and professional recruiters to find participants for the groups, offering them a cash incentive to participate. Recruiters used a detailed screening questionnaire to identify suitable respondents via their networks.

Recruitment ensured there were people with a range of experiences during lockdown including some with physical and mental health issues and some financially vulnerable.

Sample/group breakdown:

<p>Group 1 – Pre / no family</p> <ul style="list-style-type: none"> - 5 participants – 3 males & 2 females - 18-35yrs - C1C2 - Mid-high levels of concern about climate change. 1 participant felt this before lockdown, and the other 4 had become more concerned over lockdown - 1 respondent living in rural village (unspecified location) 	<p>Group 2 – Pre / no family</p> <ul style="list-style-type: none"> - 5 participants – 3 Males & 2 females - 18-35yrs - ABC1C2D - Mid-low levels of concern about climate change - 1 respondent living in rural community - village or small town (Orkney) - 1 BAME 	<p>Group 3 – Family</p> <ul style="list-style-type: none"> - 4 participants – 1 Males & 3 females - 35-55yrs - C1C2D - Mid-low levels of concern about climate change- although low levels of concern were given when recruitment this group indicated in discussion that they feel CC is a serious issue - 2 respondents living in rural environments
<p>Group 4 – Family</p> <ul style="list-style-type: none"> - 5 participants – 2 males & 3 females - 35-55yrs - BC1C2E - Mid-high levels of concern about climate change. More mid-level for this group – they feel it is an issue, but are uneducated about it so not sure how seriously to take it - 1 respondent living in rural community - village or small town (Scottish Borders) - 1 BAME 	<p>Group 5 – Post / no family</p> <ul style="list-style-type: none"> - 4 participants – 2 Males & 2 females - 56-75yrs - BC1DE - Mid-levels of concern about climate change- although mid-levels of concern were given when recruitment this group indicated in discussion that they feel CC is a serious issue - 2 semi-rural 	<p>Group 6 – Post / no family</p> <ul style="list-style-type: none"> - 5 participants – 2 Males & 3 females - 56-75yrs - ABC1C2D - Mid-high levels of concern about climate change - 2 respondents living in rural community- village or small town (East Renfrewshire)

Three levels were used to assign level of concern where on a scale out of 10 where 10 is very concerned and 1 is don't care - 1-3 was considered a low level of concern; 4-7 Mid-level concern; and 8-10 a high level of concern.

Client discussion and the findings from the desk review were used to develop a discussion/topic guide and stimulus material.

At the end of fieldwork, the team followed a staged approach to analysis, with each moderator reviewing and analysing their own groups before coming together to discuss and synthesise findings. At this stage, the key findings were presented to and discussed with the client team in order to identify and agree the elements to be tested in the final quantitative phase.

3. Quantitative findings and analysis

Drawing on the findings from the previous research phases, the quantitative phase aimed to:

- Test awareness and understanding of key climate change terms.
- Measure interest levels and perceived personal relevance of key terms.
- Explore the tone and appeal of broad messages around climate change.

Sample

An online survey was conducted between 10-16th September 2020, with a representative sample of Scottish adults. The survey was distributed by JRS's online panel partner and there were 1,004 (base) respondents.

Sample breakdown:

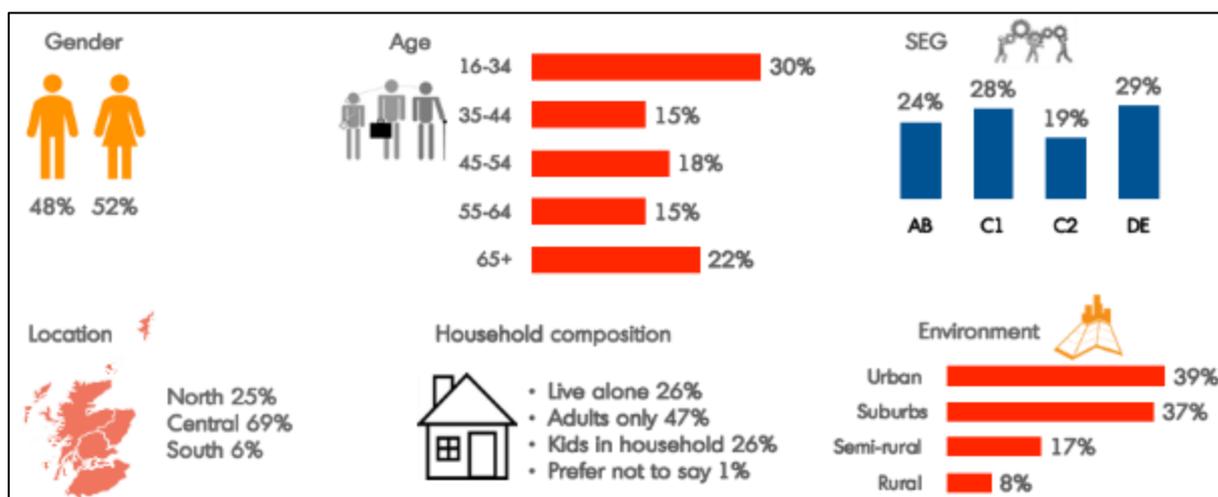


Figure 1: Breakdown of sample by demographic

- A short (5 minute) questionnaire (Appendix E) was developed including questions to test selected climate change related terminology and narratives along demographic and attitudinal questions to aid our analysis.
- The survey was programmed using Snap Survey software, and fully tested prior to launch.
- Once all responses were received a detailed analysis process was followed, starting with data cleaning and validation, before generating a series of data tabulations for analysis.
- The quantitative data was then examined at two key levels – overall (total) data; and by key sub-groups (e.g. by age, lifestage, attitudes to environmental issues etc.) using cross-tabulation analysis. This allowed identification of which terms and narratives resonated better with some groups than others.

Research limitations

- In the desk review, observations and insight were drawn from over 35 resources. This was a short exercise to gain an awareness of the narratives and terminology in circulation in Scotland before and during the COVID-19 pandemic. As such, it was not a full literature review on the topic in question.
- Use of online qualitative methods, due to the COVID-19 pandemic, means fewer respondents can be included than for traditional in-person focus groups, resulting in a lower qualitative sample size.
- The project is being conducted at an uncertain time with COVID-19 likely to influence individual perspectives and behaviour. Messages that resonate in the middle of this time period may not necessarily continue to resonate post-pandemic.

All the research adhered to legal restrictions and safety protocols set out by the Scottish Government and the Market Research Society.

Appendix B - Learnings and best practice available for improving climate change communications, engagement and discussion

A number of resources regarding how best to promote climate change messaging were identified. Key elements of the guidance presented are highlighted as follows:

Audience segmentation is important - messaging/narratives need to be tailored

As climate change is viewed differently across segments of the population, multiple narratives and rationales can be employed to engage different audience segments on the environment (McLoughlin 2018). These narratives include: inviting consideration of climate change impacts; challenging misinformation; and encouraging people to act and change their own behaviour. Tailoring messages to relevant segments improves engagement. Communications can employ both rational, scientific arguments and emotional appeals, but should always come from a credible source, and should establish a dialogue and foster co-production where possible.

Message framing should disentangle beliefs from people's identities (Hendricks 2017). When discussing climate change, messages should aim to position scientific evidence important to the audience's group identity rather than contradictory to it. Frames relevant to an audience segment can be used as entry points into discussions about climate change.

- Framing Climate Change by way of medical analogy encourages agreement with science backed explanation of global warming causes.
- Past vs Future focused framing involves messaging that focused on a nation's past e.g. look to the past where there was less traffic or future/envision a future with more traffic. This type of framing can also be achieved through images e.g. a picture of a river in the past vs a current picture or future projection.
- Using metaphors and avoiding scientific terminology can ensure messages resonate with a wider audience.
- There is no 'one size fits all' frame, this should always be selected to fit the audience segment.

Principles for effective communication and public engagement on climate change

The Handbook for Intergovernmental Panel on Climate Change (IPCC) outlines six core principles for their authors to apply when engaging with the public (Corner et al 2018):

1. **Be a confident communicator** - scientists are generally highly trusted and authentic voices.
2. **Talk about the real world, not abstract ideas** - start climate conversations on common ground, using clear language and examples that will resonate with target audiences. Use of metaphors and analogies can be useful to communicate climate science.
3. **Connect with what matters to your audience** - people's values and political views have a bigger influence on their attitudes about climate change than their level of scientific knowledge. Connecting with widely-shared public values, or points of 'local interest' in communication and engagement makes it more likely that your science will be heard.
4. **Tell a human story** - most people understand the world through anecdotes and stories, rather than statistics and graphs. Showing the human face behind the science when presenting information will help you tell a compelling story.
5. **Lead with what you know** - uncertainty is a feature of climate science that shouldn't be ignored or side-lined, but can become a major stumbling block in

conversations with non-scientists. Focus on the 'knowns' before the 'unknowns' and emphasise where there are areas of strong scientific agreement.

6. **Use the most effective visual communication** - choosing images and graphs is just as important to do in an evidence-based way as verbal and written communication.

Create a unified, strategic narrative

One academic paper (Bushell et al 2016) calls for a strategic narrative that can:

- Allow all key audiences to engage with climate change in a way that is understandable and resonates with them.
- Help audiences understand the benefits involved in mitigating climate change.
- Inspire and empower, allowing them to understand that they can make a difference.
- Allow the public to be convinced that despite the lack of direct 'evidence' of the negative effects of climate change, action is required immediately and by everyone worldwide.
- Help move people from 'othering' to 'owning' the problem - generating a sense of ownership and responsibility for the problem, at every level.
- Encourage a sense of collective responsibility for climate change action, so that people think that they can 'make a difference'.
- Attempt to influence social norms - a wide audience can be a very effective lever for influencing attitudes towards climate change policy.

Testing the Scottish public's receptiveness to climate change narratives

Prior research conducted by 2CV evaluated consumer attitudes to potential messaging narratives from the Scottish government around adopting behaviours that would support a greener lifestyle (Munyama et al 2020). Overall, they found the 'We're all playing our part' approach to be the most successful. The narratives tested were:

1. **We're all playing our part** – is appealing to individuals, as it promotes the idea of wider national effort. The realistic tone also appeals - it is encouraging but not urgent, with a focus on celebrating the progress so far. A minority found that this messaging promoted complacency, but overall the views were positive.
2. **Our Generations Legacy** - framing the message as 'our responsibility' increased the relevance to the audience, particularly those with children/grandchildren. Engagement was found to drop if the older audience perceives that the messaging directs blame towards them.
3. **A Nation of Pioneers** - promotes national pride by emphasising Scotland's pioneering role in various areas including climate change. This was well received but felt by some to lack practical advice about what the audience should do.
4. **It's Happening Here** - centres on showing the specific impact of climate change in Scotland. It promoted shock and sadness due to the loss of species - this was particularly relevant for animal and nature lovers. The use of statistics which the audience could not visualise undermined the credibility of the message.
5. **Green Revolution** - points to a collective effort and technical innovation to combat climate change - making parallels with the Industrial and Digital revolutions and the accompanying periods of creativity, innovation and economic growth. For some this narrative felt too much like a 'sales pitch' and the emphasis on benefits to individuals was felt to be out of step with other narratives on climate change.

In engaging with participants in the study, 2CV identified some key principles to maximise engagement on climate issues:

1. There must be a balance between communicating urgency and presenting climate change as a solvable problem.
2. A messenger perceived by the audience as neutral can overcome audience doubt and mistrust.
3. Messaging that delivers proof that green activities have a positive impact on climate change is key for making the audience feel that their behaviour change matters.
4. Breaking down climate related goals is more manageable and digestible for audiences.

Appendix C - Selected terms/terminology prevalent across the different desk review sources

<p>General</p> <ul style="list-style-type: none"> • Environmental Impact • Climate Emergency • Environmental Crisis • Climate Change • Global warming • Irreversible Environmental Damage • Planetary Health <p>Outcomes</p> <ul style="list-style-type: none"> • Green Revolution • Greener Recovery • Just Transition • Healthy and Diverse Environment • Environmentally Sustainable • Net Zero • Net Zero Emissions • Net Zero Scotland • Net Zero Society • Carbon Neutral • Low-Carbon Heat • Carbon Management 	<p>Specific Areas of Actions</p> <ul style="list-style-type: none"> • Green Transport • Sustainable Travel • Recycling • Waste Reduction • Energy Efficiency • Renewable Energy • Food Waste <p>Green Economy</p> <ul style="list-style-type: none"> • Green Budget • Zero-Carbon Recovery • Green Finance • Green Investment • Green Recovery • Clean Recovery • Low-Carbon Recovery • Low-Carbon Economy • Inclusivity • Equitable and fair green economy • Well-being economy
--	--

Appendix D - Differences in awareness by term

- Carbon Neutral (72%) significantly more recognised by:
 - 65+yr olds (84%)
 - Those with high levels of concern about climate change (81%)
 - Those with high levels of knowledge about climate change (80%)
 - AB (79%) C1 (76%) C2 (77%) socio-economic groups
 - Males (78%)
- Energy Efficiency (68%) significantly more recognised by:
 - 65+yr olds (79%)
 - Those with high levels of concern about climate change (77%)
 - Those with high levels of knowledge about climate change (76%)
- Sustainable Travel (55%) significantly more recognised by:
 - Those with high levels of knowledge about climate change (68%)
 - Those with high levels of concern about climate change (66%)
 - ABs (65%)
 - 65+yr olds (64%)
- Climate Emergency (48%) significantly more recognised by:
 - Those with high levels of knowledge about climate change (70%)
 - Those with high levels of concern about climate change (63%)
 - Males (52%)
- Net Zero (38%) significantly more recognised by:
 - Those with high levels of knowledge about climate change (51%)
 - Those with high levels of concern about climate change (47%)
 - Males (45%)
 - ABs (54%)
- Green Recovery (28%) significantly more recognised by:
 - Those with high levels of knowledge about climate change (47%)
 - Those with high levels of concern about climate change (38%)
- Green Finance (19%) significantly more recognised by:
 - Those with high levels of knowledge about climate change (36%)
 - Those with high levels of concern about climate change (25%)
- Wellbeing Economy (13%) significantly more recognised by:
 - Those with high levels of knowledge about climate change (23%)
 - 16-34yr olds (19%)
 - Those living with children in the household (18%)
- Planetary Health (17%) significantly more recognised by:
 - Those with high levels of knowledge about climate change (33%)
 - Those with high levels of concern about climate change (24%)
- Just Transition (3%) significantly more recognised by:
 - Those with high levels of knowledge about climate change (7%)

Appendix E – Quantitative online survey

Thank you for agreeing to take part in this survey. It should take around 8 minutes to complete.

JRS are independent researchers who abide by the Market Research Society Code of Conduct and GDPR regulations. Our full privacy policy can be read at <https://www.jumpresearch.co.uk/privacy-policy>. Our promises to you:

- We will not disclose any of your details
- We will anonymise all of our reports
- We will only use the information you provide for the purpose of this research
- We will not collect any personal identifying data.

Do you voluntarily agree to take part in the research and provide answers to the survey questions, as well as questions about yourself including gender, age and ethnicity to help with our analysis?

- Yes, I agree to participate
- No, I do not agree to participate

Demographic Questions – To Ensure A Representative Sample is Achieved

Q1. Are you?

- Male
- Female
- Prefer to self-describe (_____)
- Prefer not to say

CHECK QUOTAS AND CONTINUE IF ELIGIBLE.

Q2. Which of the following age groups do you fall into?

- Under 16 - CLOSE
- 16-17
- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65-74
- 75+
- Refused - CLOSE

CHECK QUOTAS AND CONTINUE IF ELIGIBLE.

Q3. Which of the following groups does the Chief Income Earner in your household belong to? Please select one answer only

- The person in the household with the largest income is the Chief Income Earner, however this income is obtained.
- If the Chief Income Earner is retired and has an occupational pension, please select according to the previous occupation
- If the Chief Income Earner is not in paid employment and has been out of work for less than 6 months, please select based on previous occupation

- **Semi or unskilled manual worker** (e.g. Manual jobs that require no special training or qualifications; Manual workers, Apprentices to be skilled trades, Caretaker, Cleaner, Nursery School Assistant, Park keeper, non-HGV driver, shop assistant etc.)
- **Skilled manual worker** (e.g. Skilled Bricklayer, Carpenter, Plumber, Painter, Bus/Ambulance Driver, HGV driver, Unqualified assistant teacher, AA patrolman, pub/bar worker, etc.)
- **Supervisory or clerical / Junior managerial / Professional / administrator** (e.g. Office worker, Student Doctor, Foreman with 25+ employees, sales person, Student Teachers etc.)
- **Intermediate managerial / Professional / Administrative** (e.g. Newly qualified (under 3 years) doctor, Solicitor, Board director small organisation, middle manager in large organisation, principal officer in civil Service/local government etc.)
- **Higher managerial/ Professional/Administrative** (e.g. Established doctor, Solicitor, Board Director in large Organisation (200+ employees), top level civil servant/public service employee, Headmaster/mistress, etc.)
- **Student** (living away from home)
- **Retired and living on state pension only**
- **Unemployed** (for over 6 months) or not working due to long term sickness

CHECK QUOTAS AND CONTINUE IF ELIGIBLE.

Q4. Which of the following best describes where in Scotland you live? Please choose one answer only

- Grampian
- Highland
- Perth/Tayside
- Western Isles
- Orkney
- Shetland
- Glasgow
- Ayrshire
- Lanarkshire
- Argyll
- Edinburgh & Lothians
- Fife
- Central
- Borders
- Dumfries & Galloway
- Do not live in Scotland - CLOSE

CHECK QUOTAS AND CONTINUE IF ELIGIBLE.

Main Survey

Q5. How concerned would you say you are about climate change? Please select one answer only

- 1 = I don't care about climate change
- 2

- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10 = I am very concerned about climate change

Q6. And how knowledgeable would you say you are about climate change issues? Please select one answer only

- 1 = I know nothing about climate change
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10 = I am very knowledgeable about climate change

Q7. Which of the following terms relating to climate change are you familiar with i.e. have seen or heard being used? Please select as many as apply

- Just Transition
- Wellbeing Economy
- Planetary Health
- Green Finance
- Carbon Neutral
- Sustainable Travel
- Energy Efficiency
- Climate Emergency
- Net Zero
- Green Recovery
- None of these

The next few questions look at some of these terms in more detail.

Q8. Net Zero

Net zero means that we reduce carbon emissions to an absolute minimum and capture the remaining emissions in the atmosphere through schemes like tree planting.

- a) How clear do you find this explanation?
- b) How interested are you in hearing more about **Net Zero**?
- c) How relevant is **Net Zero** to you personally?

- 1 = not at all clear / interested / relevant
- 2
- 3
- 4

- 5
- 6
- 7
- 8
- 9
- 10 = very clear / interested / relevant
- Don't know ONLY INCLUDE AS A CODE FOR b) & c)

Q9. Green Recovery

A Green Recovery would see Scotland rebuilding in the wake of the Covid-19 pandemic in a way that prioritises sustainability and green practices across all society. For example investing in the growth of the renewable energy sector instead of fossil fuels.

- a) How clear do you find this explanation?
- b) How interested are you in hearing more about Green Recovery?
- c) How relevant is Green Recovery to you personally?

- 1 = not at all clear / interested / relevant
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10 = very clear / interested / relevant
- Don't know ONLY INCLUDE AS A CODE FOR b) & c)

Q10. Climate Emergency

Increasing global temperature is leading to rising sea levels, challenges around food production, a scarcity of fresh water, the global spread of diseases, and a decline in animal and plant species. Declaring a climate emergency means we are committing to taking immediate action, including reducing our greenhouse gas emissions, in order to prevent this.

- a) How clear do you find this explanation?
- b) How interested are you in hearing more about Climate Emergency?
- c) How relevant is Climate Emergency to you personally?

- 1 = not at all clear / interested / relevant
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10 = very clear / interested / relevant

- Don't know ONLY INCLUDE AS A CODE FOR b) & c)

Q11. Just Transition

A just transition seeks to ensure that the substantial benefits of the actions we are taking to tackle climate change and rebuild our economy are shared widely, while also supporting those who stand to lose economically – be they regions, industries, communities, workers or consumers.

- a) How clear do you find this explanation?
- b) How interested are you in hearing more about Just Transition?
- c) How relevant is Just Transition to you personally?

- 1 = not at all clear / interested / relevant
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10 = very clear / interested / relevant
- Don't know ONLY INCLUDE AS A CODE FOR b) & c)

The Scottish Government has set a number of climate change targets for Scotland, including:

- From 2024, newly-built homes use only renewable or low carbon heating systems
- Phase out the sale of new petrol and diesel cars and vans by 2032
- Net Zero by 2045 with interim targets:
 - Reductions of at least 75% by 2030
 - 90% by 2040

Q12. Were you aware of these targets? Please select one answer only

- Yes, all of them
- Yes, some of them
- No

Q13. How important is it to you personally to know about climate change targets like these?

- Not at all important
- Not very important
- Neither important nor not important
- Quite important
- Very important
- Don't know

Q14. If a detailed routemap for achieving these targets was published by the Scottish Government, how interested would you be in this? Please select one answer only

- Not at all interested

- Not very interested
- Neither interested nor not interested
- Quite interested
- Very interested
- Don't know

Q15. To what extent do you agree or disagree with the following statements?

Agree strongly / agree slightly / neither agree nor disagree / disagree slightly / disagree strongly / don't know

- a) The Scottish Government must take action on climate change now
- b) Businesses in Scotland must take action on climate change now
- c) Individuals in Scotland must take action on climate change now

Q16. Please look at the following statements about what can be achieved through taking action on climate change. How motivating do you personally find this vision of Scotland in 2045? ROTATE ORDER

Very motivating / Quite motivating / Neither motivating nor not motivating / Not very motivating / Not at all motivating / Don't know

- a) In 2045, Scotland's buildings will be warmer and more energy-efficient. Heating will be provided from clean, sustainable sources. More people will be walking, cycling or using public transport with electric cars for essential trips. We'll be eating a better diet with more that's been grown locally, supporting our local producers. Our air will be cleaner, nature will be flourishing and our people will be healthier and happier.
- b) In 2045, we have cut our carbon emissions in line with the Climate Change Act, including meeting our interim targets of at least 56% reduction by 2020, 75% by 2030 and 90% by 2040. We have built many more wind farms and solar panels so that all our energy can now come from renewable sources. All our buildings are energy efficient and have low carbon heating systems. Diesel and petrol vehicles have been replaced with electric vehicles, supported by a national network of charging points. Our local roads have been redesigned to prioritise cycling and public transport for shorter journeys. All remaining emissions are offset through significant tree planting, peatland restoration and carbon capture and storage technology.
- c) In 2045, we have all contributed to tackling climate change through our actions and choices. We use less energy at home and work. We have replaced our gas boilers with low emissions heating systems and have insulated our homes and work places to make them energy efficient. We rarely use cars. We travel by foot or other non-motorised transport for short journeys, and use public transport and electric vehicles for longer trips. By shopping locally we have strengthened our vibrant communities, and we all enjoy the clean air and flourishing nature that comes from our climate friendly actions.

Q17. Which of these visions is most likely to motivate you to take action on climate change? SHOW ALL 3 VISION STATEMENTS ON SCREEN TOGETHER

- a) b) c) none of these

Classification Questions

The last few questions are to help us analyse the findings.

Q18. Which of the following best describes the area you live?

- Urban (in city or town)

- Suburbs (just on outskirts of city or town)
- Semi-rural (in a village not attached to city)
- Rural (a small group of houses or house on own)

Q19. Which of these best describes your household?

- Live alone
- Live in a household with other adults (no children)
- Live in a household with children
- Prefer not to say

CLOSE

Thank you very much for taking part in this important research.

References

2050 Climate Group (2020). Our Impact. [online] Available at: <https://www.2050.scot/our-impact> [Accessed July 30 2020]

Belcher, A., Korbitz, C., Regular, A., (2019). Food Waste 2019 Campaign Evaluation. Breaking Blue Scottish Government Debrief, 12 Aug 2019

Bol, D. (2020) Post-Covid Scotland 'Needs a £150bn green revolution' The Herald. [online] Available at: <https://www.heraldscotland.com/news/18578277.post-covid-scotland-needs-150bn-green-revolution/> [accessed 25 Sept 2020]

Boss, L. (2020). Hope for the environment post-Coronavirus? Keep Scotland Beautiful. [online] Available at: <https://www.keepsotlandbeautiful.org/blog/hope-for-the-environment-post-coronavirus/> [Accessed July 30 2020]

Burns, H. (2020). Treat climate emergency with same urgency as Covid-19 urges SCDI: Scottish Council for Development & Industry sets out 12-point plan for Green Recovery from coronavirus. Insider [online] Available at: <https://www.insider.co.uk/news/treat-climate-emergency-same-urgency-22274050> [Accessed 30 July 2020]

Bushell, S., Workman, M. (Dr), Colley, T. (2016). Towards a unifying narrative for climate change. Grantham Institute, Briefing paper No 18. Imperial College London.

Church of Scotland (2020). Addressing climate change. [online] Available at: <https://www.churchofscotland.org.uk/speak-out/caring-for-creation/addressing-climate-change> [Accessed July 30 2020]

Climate Change (Emissions Reduction Targets) (Scotland) Act (2019). Available at: <http://www.legislation.gov.uk/asp/2019/15/enacted> [Accessed 16/10/20]

Corner, A., Shaw, C. and Clarke, J. (2018). Principles for effective communication and public engagement on climate change: A Handbook for IPCC authors. Oxford: Climate Outreach.

Ecker, U.K.H., Butler, L.H., Cook, J., Hurlstone, M.J., Kurz, T., Lewandowsky, S., (2020). Using the COVID-19 economic crisis to frame climate change as a secondary issue reduces mitigation support, Journal of Environmental Psychology. doi: <https://doi.org/10.1016/>

Evanson, D. (2020). How will coronavirus shape our response to climate change? Imperial News. Available at: <https://www.imperial.ac.uk/news/197473/how-will-coronavirus-shape-response-climate/> [Accessed July 29 2020]

Gray, E., and Jackson, C., (2020). Earth Day 2020: How do Great Britain and the world view climate change and Covid-19? Ipsos Global Advisor. Ipsos Mori.

Greener Scotland (2020). Tackling the climate emergency together, Scottish Government

Hendricks, R. (2017). Communicating Climate Change: Focus on the Framing, Not Just the Facts. The Climate Reality Project [online] Available at: <https://www.climate realityproject.org/blog/communicating-climate-change-focus-framing-not-just-facts> [Accessed July 30 2020]

Keep Scotland Beautiful, (2020) Climate Change: an emergency for all of us. Keep Scotland Beautiful [online] Available at: <https://www.keepsotlandbeautiful.org/sustainability-climate-change/climate-change/#> [Accessed November 20 2020]

- Long, J., Gordon, L., Townend, R., (2020). Now what? Climate change & coronavirus. Ipsos Mori.
- McLoughlin, N., Comer, A., Capstick, S., Richardson, H., Bell, A., Muller, C. and Illingworth, S. (2018). Climate communication in practice: how are we engaging the UK public on climate change? Oxford: Climate Outreach
- Maslin, M. (2020). Why coronavirus is the time for climate change action - and optimism. New Scientist. Available at: <https://www.newscientist.com/article/mg24732903-700-why-coronavirus-is-the-time-for-climate-change-action-and-optimism/> [Accessed 29 July 2020]
- Messenger, S. (2020). Coronavirus: Climate change 'bigger threat' than Covid-19, BBC News, Available at: <https://www.bbc.co.uk/news/uk-wales-53308828> [Accessed 29 July 2020]
- Munyama, A., Plank, A., Saint-Warrens, S., Powell, J., (2020). Adopting A Green Lifestyle - Consumer Understanding, Attitudes and Behaviours: Research Debrief prepared by 2CV. 2CV: Feb 2020
- Monbiot, G. (2020) People want a greener, happier world now. But our politicians have other ideas. The Guardian. Available at: <https://www.theguardian.com/commentisfree/2020/jul/21/greener-happier-world-politicians-boris-johnson-consumerism-planet> [Accessed July 29 2020]
- The Royal Society of Edinburgh (2020). World Environment Day: Global pandemic highlights importance of governments working together on climate crisis. [online] Available at: <https://www.rse.org.uk/world-environment-day-global-pandemic-highlights-importance-governments-working-together-climate-crisis/> [Accessed July 30 2020]
- Scottish Government (2019). Action to address climate emergency. Available at: <https://www.gov.scot/news/action-to-address-climate-emergency/> [Accessed 16/10/20]
- Scottish Government (2019a). Scotland to become a Net Zero Society. [online] Available at <https://www.gov.scot/news/scotland-to-become-a-net-zero-society/> [Accessed July 29 2020]
- Scottish Government (2019b). Scotland's Climate Week 2019. [online] Available at <https://www.gov.scot/news/scotlands-climate-week-2019/> [Accessed July 29 2020]
- Scottish Government (2019c). The Global Climate Emergency - Scotland's Response: Climate Change Secretary Roseanna Cunningham's statement. [online] Available at: <https://www.gov.scot/publications/global-climate-emergency-scotlands-response-climate-change-secretary-roseanna-cunninghams-statement/> [Accessed July 30 2020]
- Scottish Government (2020) Policy: Climate Change. Available at: <https://www.gov.scot/policies/climate-change/> [Accessed 16/10/20]
- Scottish Government (2020a). Delivering a green budget. [online] Available <https://www.gov.scot/news/delivering-a-green-budget/> [Accessed 29 July 2020]
- Scottish Government (2020b). Towards a robust, resilient wellbeing economy for Scotland: Report of the Advisory Group on Economic Recovery. Edinburgh: Scottish Government
- Scottish Government (2020c). £62 million fund for energy sector. [online] Available at <https://www.gov.scot/news/gbp-62-million-fund-for-energy-sector/> [Accessed: July 29 2020]
- Scottish Government (2020d). Cleaner Air for Scotland: The Road to a Healthier Future, 2018/19 Progress Report. Edinburgh: Scottish Government

Scottish Government (2020e). Protecting Scotland's environment. [online] Available at <https://www.gov.scot/news/protecting-scotlands-environment/> [Accessed 29 July 2020]

Scottish Government (2020f). The Big Climate Conversation: Findings from a programme of public engagement on climate change. Edinburgh: Scottish Government

Scottish Household Survey (2019). Scotland's People Annual Report: A National Statistics publication for Scotland. Edinburgh: Scottish Government

Stop Climate Chaos Scotland (2020.). Climate Emission Results 'Incredibly Worrying', More Action Needed to Meet Targets. Press Release 18 June 2020. [online] Available at: <https://www.stopclimatechaos.scot/climate-emission-results-incredibly-worrying-more-action-needed-to-meet-targets/> [Accessed 30 July 2020]

Sturgeon, N. (2019). Climate change is inescapable and we're a world away from where we need to be, Daily Record, Available at: <https://www.dailyrecord.co.uk/news/scottish-news/climate-change-inescapable-reality-were-20470518> [Accessed 29 July 2020]

Taylor, M. (2020). Pandemic shows climate change has never been treated as crisis, say scientists. The Guardian. Available at: <https://www.theguardian.com/environment/2020/jul/16/pandemic-shows-climate-has-never-been-treated-as-crisis-say-scientists> [Accessed 29 July 2020]

Watts, J. and Readfearn, G. (2020). Global heating: best and worst case scenarios less likely than thought. The Guardian. Available at: <https://www.theguardian.com/environment/2020/jul/22/global-heating-study-narrows-range-of-probable-temperature-rises> [Accessed July 29 2020]

Zeldin-O'Neill, S. (2019). 'It's a crisis, not a change': the six Guardian language changes on climate change. The Guardian. Available at: <https://www.theguardian.com/environment/2019/oct/16/guardian-language-changes-climate-environment> [Accessed 19 July 2020]

© Published by JRS, 2020, on behalf of ClimateXChange. All rights reserved.

While every effort is made to ensure the information in this report is accurate, no legal responsibility is accepted for any errors, omissions or misleading statements. The views expressed represent those of the author(s), and do not necessarily represent those of the host institutions or funders.

climateXchange

Scotland's centre of expertise connecting
climate change research and policy

✉ info@climatexchange.org.uk
☎ +44(0)131 651 4783
🐦 @climatexchange_
🌐 www.climatexchange.org.uk

ClimateXChange, Edinburgh Centre for Carbon Innovation, High School Yards, Edinburgh EH1 1LZ