

Climate Conversations for The Scottish Government

Final Report

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Executive Summary

Introduction

This report presents the results of ten Climate Conversations undertaken for the Scottish Government in 2016. Climate Conversations facilitate meaningful conversations with the public about climate change, its impacts and mitigation. The findings will help to inform the development of climate change measures in Scotland.

Ninety members of the general public participated in conversations in ten towns and cities within reach of the central belt. Each conversation lasted one hour and ten minutes and was facilitated to give all participants an opportunity to discuss, firstly, how climate change might affect places, people and activities in Scotland, and secondly, their views on nine descriptions of what low carbon life might look like in 2030.

Findings

Participants were generally aware of climate change as both an issue and a problem and were aware that action is necessary to tackle it. While some of the comments showed confusion between concepts and some factual inaccuracy, overall the majority of participants appeared reasonably well informed. A handful of participants had a considerable interest and knowledge of the topic. A handful either had very little knowledge or were actively sceptical. Generally the main causes of climate change mentioned were energy production and transport.

The most prevalent themes relate to the impact of climate change on landscape and wildlife. The impact of climate change on humans was generally restricted to flooding and food supply, and almost invariably restricted to changes and affects within Scotland itself. The impact of climate change in other parts of the world having indirect impacts in Scotland - such as on imported food, migration, global economy - was very rarely mentioned.

Most participants were able to suggest changes that would be caused by climate change, though some were less sure.

The majority of participants expressed general approval in principle for the behaviours and technologies highlighted in the Low Carbon Life in 2030 activity - and for the need to tackle climate change. This was clearly expressed when discussing the ranking activity: for most people, and for most of the topics, the issue was purely one of ranking issues they were happy with - only in a few cases were those ranked lowest issues they actively rejected.

Where activities were rejected or concerns expressed, this was generally, though not always, a reflection that the behaviour or technology was not appropriate to their particular circumstances or too costly.

Groups in cities tended to have more positive views of public transport than those in small towns.

The Climate Conversations process

The Climate Conversation structure and process works. However time for discussion is short; useful discussion sometimes needs to be curtailed and the process sometimes felt rushed. We recommend considering extending the time to two hours.

Without exception participants reported that they enjoyed the event. The main reason given was that they enjoyed the discussion and listening to other people's points of view. Several people commented they would have liked to have had more time to continue. This suggests the overall approach provides an enjoyable and worthwhile process for the participants.

The recruitment used (via market research recruiters) works. However it becomes more expensive as one moves away from the main urban areas due to cost of travel and subsistence for recruiters. The potential of local climate action groups and other local groups organising and hosting Climate Conversations should be explored.

Awareness raising and communication

This work identifies a number of points that are relevant both to the future development of this strand of work and communication about climate change more generally. In particular:

- Communicate more effectively what is already being done, by government and others to address climate change, including the advice and support available to the public.
- Climate change is often perceived as something for the future. Consider how to communicate that climate change is already happening, and why action is needed now.
- Promoting low carbon alternatives to the car without addressing existing concerns risks alienating people who in principle accept the need for change.

Conclusion

The Climate Conversation process is an effective and worthwhile way of not only understanding better the public's views on climate change, but also of encouraging greater interest and awareness.

The key findings are that people are generally aware of climate change as both an issue and a problem and were aware that action is necessary to tackle it. While some of the comments showed confusion between concepts and some factual inaccuracy, overall the majority of participants appeared reasonably well informed.

The majority of participants expressed general approval in principle for behaviours and technologies to reduce emissions. Where activities were rejected or concerns expressed, this was generally, though not always, a reflection that the behaviour or technology was not appropriate to their particular circumstances or too costly.

Background

Purpose

We, The Surefoot Effect, were commissioned by the Scottish Government to undertake ten Climate Conversation workshops and associated analysis and reporting between June and October 2016, the outputs of which will help to inform the development of climate change measures in Scotland.

Climate Conversations use a framework, commissioned by the Scottish Government, to facilitate meaningful conversations with the public about climate change, its impacts and mitigation. This framework is designed to generate deeper and more nuanced understanding of public knowledge and attitudes, that will be used to inform the development of RPP3, hence maximising the acceptability and adoption of relevant measures by the public, in order to increase the likelihood of achieving the statutory emissions reduction targets.

Workshops: Location and Recruitment

We used a market research company to recruit participants. Participants were selected to be typical of the demographic of the location. Potential participants were aware the conversation was about climate change and were paid £30 for attending. We recruited 10 participants for each conversation, with between 10 and 6 participants attending each of the ten workshops, 90 participants in total. See Appendix 1 for details.

Conversations were held in ten towns and cities within reach of the central belt: Stirling, Leith, Dunfermline, Glasgow, Galashiels, Pitlochry, Lanark, Milngavie, Glenrothes, and Paisley. The cost of travel and overnight accommodation precluded holding workshops further afield due to budget constraints.

Workshops were held in the early evening in local meeting rooms, generally community centres or events venues.

The Climate Conversations Process

The structure and activity of all conversations followed the same format, based on the Scottish Government's draft Climate Conversations How To Guide. In addition to introductions and administrative matters, each Conversation consisted of two main activities: *Protecting What You Love* and *Low Carbon Life in 2030*. Overall each conversation lasted 1 hour and 10 minutes.

Protecting What You Love Activity

Participants each chose one photograph that appealed to them from a number available. Photographs showed scenes of places, people and activities in Scotland. Participants were asked to consider how the scene or topic represented may be affected by climate change. They then discussed this in pairs, before taking turns to share to the whole group the main changes they anticipate. The conversation was audio-recorded. The recording was subsequently transcribed to identify people's views and to group these into themes.

Low Carbon Life in 2030 Activity

Participants were given a series of printed sheets with nine brief descriptions of what low carbon life might look like in 2030. They were asked to rank these in a Diamond Nine format based on: how positive they feel about each; how likely they are to do; or how much they would support it. This is followed by a discussion about their choices. The results of the ranking activity were collected and the conversation was audio-recorded. The recording was subsequently transcribed to identify people's views and to group these into themes.

Facilitation

One facilitator led each conversation. Their role was to welcome participants, lead them through the activities, ensuring all had opportunities to contribute and be heard, while keeping to time. The facilitator did not express their own views about any of the topics and provided no information about climate change, mitigation or adaptation, except occasionally to provide clarification in response to a direct request.

Findings

Views on the impact of climate change

Themes

The statements made by the participants have been grouped into themes, indicated in **bold** below. The themes have emerged from the analysis and have not been predetermined by the researcher. Occasionally more complex responses have been placed in more than one theme. The themes reported below are based on four or more different participants reporting the issue. All statements made by respondents (and some explanatory comments) are given under each theme in *italics*, thus the number of bullet points indicates the number of comments made within the theme. Themes with a large number of comments have been sub-divided where appropriate.

The most prevalent themes concern the impact of climate change on landscape and wildlife.

The impact of climate change on humans was generally related to flooding and food supply, and almost invariably restricted to changes and affects within Scotland itself. The impact of climate change in other parts of the world having indirect impacts in Scotland - such as on imported food, migration, global economy - was very rarely mentioned. When this was mentioned, it was by someone who clearly had an in depth knowledge of climate change.

The following themes have been identified and are illustrated with selected quotes from participants. (All quotes are presented in Appendix 2):

Impacts on wildlife and non-urban landscapes

- *With rising temperatures, the land will become more arid, and it won't be this lovely green landscape, it will become dry and the eco-culture will change because of that.*
- *There will be more of us and less space for wildlife. We have a responsibility toward other creatures.*
- *I love the out of doors what might happen to our beautiful countryside? Too hot, too wet, freezing if the gulf stream fails? Cutting down too many trees for development, flooding. Scotland is one of the most beautiful countries in the world. I will be heartbroken if all of that went away.*

Impacts on wildlife and non-urban landscapes - specifically water quality

- *Impact to animal habitats; quality of water. If I were an otter straying into an urban waterway, I would feel trapped, out of breath.*
- *Lochs in Scotland are not well maintained, they are quite dirty. With climate change, water levels will be lower and more dirty. The whole environment around the lochs will be more polluted.*

Impacts on wildlife and non-urban landscapes - specifically trees

- *Autumn leaves – they are now often marred by disease or pollution [human caused].*
- *Deer eating saplings, preventing them regrowing. We get a lot of our oxygen from trees. Trees are super important. Scotland was once a tree covered landscape. [Question: How might climate change affect that landscape?] We got a bit sad about it really: we won't survive if there's no trees. When trees are cut down for forestry they aren't replanted, I see that a lot, dead trees. Companies should replace what they take away.*

Impacts on nature, leading to impacts on people

- *Climate change will impact habitats both for animals and people – how to preserve these?*
- *This picture has a good combination of civilisation and nature. It's got flatlands, hills, the buildings. It looks calm, it's good. A nice place to go out for a walk. Climate change could affect it. If it rains too much it's going to cover the flat lands, driving civilisation and its buildings further away, and giving us less land to grow food on. If we get too warm, a lot of the crops are going to die, farmers will have to use more water, which we're short of in the first place, so there's going to be an effect there.*
- *Beaches are not as accessible now due to hydro power and pollution*

Flooding, due to higher rainfall and sea level rises, was mentioned frequently:

Impacts of flooding and sea level rise on nature

- *I picked a wee river. Climate change will cause that to go higher and higher, and it will probably burst it's banks and whatever's around it will suffer. Trees and that, because they'll have nowhere else to live. Salmon won't be able to leap because the staircase won't be there any more.*
- *That's a nice loch scene. You can see the shoreline and on here the grass grows down to the river. With the climate change, that will rise up so it takes over everywhere, and there'll be... land will just be water.*

Impacts of flooding and sea level rise on nature, causing impacts on humans

- *Rising sea levels will cause more erosion. Impacting on fish and pollution levels, then impacting on humans and wildlife.*
- *Rivers will cause flooding more often, causing damage to roads and other infrastructure, affecting people's ability to get around.*

Impacts of flooding and sea level rise on humans directly

- *Flooding, my auntie's house was flooded, the bottom level, a year or so ago. Still trying to get repairs and stuff. Floods will get more regular, start happening in places you wouldn't normally see them in the past. And it's a very personal, immediate reaction, not just theoretical, this happens to you, affects your daily live and your family.*

- *Flooding will be more frequent. Will cause problems for the economy, arable agriculture, damaging roads affecting local communities and houses.*
- *When I was really young I lived in Aberdeen and I've lived there recently for six years, and I've noticed that quite often public parks being flooded from the rain. I've seen changes in the weather in my lifetime. Some drastic floods in Aberdeen and Elgin that i never heard about when I was younger.*

Demand for resources leading to impacts

- *Oil is definitely running out, will fracking damage the environment? [Much discussion over this with some maintaining high standards of monitoring here will make it ok; no one wanted a fracking well near them though]*
- *Deforestation contributes to climate change. With more people on the planet we have greater need for agriculture, domestication of animals for food. So there will be more deforestation to make way for fields for the deer. And deforestation for land for sheep and cows.*
- *Population is growing, we will need more agriculture; this will lead to deforestation and monoculture.*

Logging and deforestation

Loss of forests in Scotland is often associated with wind farm developments in the comments from participants:

- *[West Highland Way] No sign of any obvious pollution there. But my worry is, anytime you're out, you're seeing logging getting done. And if they're going to take away, are they going to be replaced with new trees? [?] relax up there, get away from it all. If they going to cut down the trees and replace them with wind turbines... I know they are meant to help us with electricity and that, but they're an eyesore and they'll ruin... and have an effect on tourism which brings in a lot for Scotland. I don't know if it has to do with climate change, but down in the Borders there used to be forest, they've been cut down and turbines appeared.*
- *Deforestation is also required to make more room for wind farms.*
- *Trees are coming down across the world, probably not being replanted at the rate they are being taken down. That affects our pollution and the environment. With temperature rising there's more and more different insects coming into Britain - how's that affecting the trees with diseases etc?*

Conflict between benefits versus negative impact or unsuitability of some technologies

- *More wind farms will cause a visual impact on the landscape.*
- *Impact on green spaces from tackling climate change - e.g. wind farms.*
- *Solar panels don't suit all houses: new builds are better.*

A historical perspective on change

- *Scotland has a long history; how much longer will it continue if climate change is as bad as some people think?*

- *Grew up seeing these cranes in Govan everyone had jobs then it's part of history they are like statues now but the industrial age wasn't good for the climate I can remember the smogs, we don't have that now, but there aren't as many jobs...*

Changes to urban & industrial landscapes

- *I picked a construction site, just because I've worked with these machines, and the emissions they send out are not very good for the environment, and also with the climate change. With the heavy rain these building sites get shut down because they can't lift any of the soil or that.*
- *Overcrowding with cars. That right away is pollution. They are working on it already with the lead, and cutting back to 20 mph. Although I don't like cycling, it's probably the best way to get around in Edinburgh now. But they're breathing it in all the time, the pollution.*
- *Traffic causes a lot of pollution which in turn will affect your environment. There's more and more cars, with young people getting cars, and China and places like that.*

While not directly responding the request to suggest how climate change may affect the scene they had chosen, a number of related points were raised that can be summarised as:

How can we reduce emissions? What's being done?

- *Scottish Government says "no fracking". So if we don't have fracking and we don't want nuclear, what have we got that's green? We're importing coal from Australia for heating. We're starting electric cars, but we need electricity to run them. Where will electricity come from? Windmills will blight the landscape.*
- *We need to figure out ways to live and work that doesn't make these impacts.*
- *It is important that the measures taken are effective and that there is proof that they are effective.*

Limitations

While we are confident the themes above are representative of the concerns and views of the participants, it should be noted that the topics recorded may be influenced by the photographs available to choose from. With a different set of photographs other issues may have arisen. Only themes identified from four or more related statements have been reported. As participants can overhear their neighbours during paired discussion, and as some of the statements were made following group discussion, the number of statements on a theme may reflect 'contamination' within a group, rather than naturally occurring ideas and views. However, inspection of the raw data shows that all themes reported are based on at least four statements from different groups.

Views on Low Carbon Life in 2030 - Activity

Preferences

The ranking activity revealed no consistent preferences. Many participants commented that they were happy to do most if not all of these things, and often already were. Several people found the idea of ranking them very difficult and would have preferred to have indicated those they liked and those they didn't like. Thus no clear 'winners' or 'losers' in terms of the activities suggested emerges.

Themes

The nature and focus of the discussion sometimes varied between groups. This is a result of whether a 'burning topic' emerges and the judgement of facilitator as to whether to more useful information is emerging from the discussion, or if they should move the conversation to a new topic. The number of comments on a topic is sometimes therefore a result of the time available for discussing, rather than its importance.

Some emerging themes under each topic, often contradictory, are noted below. Unless otherwise indicated, views are only reported where three or more people made the same or similar points. "Making public transport easy" and "Getting around" have been merged into one section below as they cover much the same issues; likewise "Keeping heat in" and "Local energy".

The text of each topic is shown in the box.

Keeping heat in

- *In the morning your room is a comfortable temperature, despite the frost last night.*
- *You've really felt the benefit of the extra insulation and triple glazing you installed - it hasn't even been necessary to heat the bedrooms in the mornings.*

Local energy

- *You arrive home to a warm home powered by
 - *the new district heating system for all the homes in your area, or*
 - *the air source heat pump you've just installed, or*
 - *the local community wind turbine**
- *Granted, it was a bit of a hassle to get it installed, but it was worth it because now it's always a comfortable temperature in the house and you are not reliant on delivery of oil or large energy bills.*

(Both topics addressed together below)

For most participants, regardless of how they ranked it, **better insulation is desirable**, e.g.: *“Doesn't intrude into one's life. Saves you money. Nothing to not like about it.”* This was often linked to **fuel poverty**: *“I like the comfort in my home. I've seen people that can't afford to heat up their home and they're sitting wearing loads of clothes, and they've not got double glazing.”* As this quote illustrates, the concern about fuel poverty was usually a **concern for others** rather than a reference to their own situation.

Likewise **local energy is desirable**: *“sensible to have energy generated locally”* *“Local energy would be good - they have it in Iceland”* *“Expanding use of renewable energy and reducing fossil fuels makes sense”*. It's seen as providing **comfort, helping the environment and saving money**: *“Warm house, comfortable temperature - what's not to like?”* *“Paying bills, and better quality of life with the winters we have in Scotland”* *“You're saving money and helping the environment. It's a win win for me.”*

The **cost** of installing insulation, improved glazing and local energy systems was a significant concern: *“Don't know if I'd be able to that and it would cost money to install. I'd rather just put extra layers [of clothes] on.”* *“We're both in housing associations, that would be paid for us, but if people are elderly or living on their own, they'll have to fork out - where does that money come from? It's not an easy fix, we need to get it right.”*

People have different **perceptions of comfort** with many people agreeing that they never feel the need to have the heating on their bedrooms.

The importance of **building all homes to high standards** was raised, though there was uncertainty about whether this was already happening, and about the pros and cons regarding higher cost of building versus cost of energy savings. *“Why aren't all new house built with solar panels on the roofs?”*, *“Same [high] standards for building houses, for all developers, everyone singing from the same hymn sheet, is a really really important idea. Will make a big difference going forward.”*

While most people recognised the benefits of local renewables, a few raised **concerns about the visual impact of solar panels**: *“I think solar panels look ugly on older houses”* *“A lot of it's ugly. It's not sympathetic”* *“I'm selfish... I don't like wind turbines, solar panels. I think they're unsightly”* *“I think it's an eyesore on the roofs. A mess.”*

Wind turbines are more attractive when there is local benefit: *“There are issues with local energy generation - especially about local people benefiting directly”* *“It doesn't matter where its generated as long as it is green. Right now generated locally doesn't benefit local people”*.

In one conversation there was a long discussion of **problems with government schemes and planners**: *“I'd like to see more homes powered by wind etc. But if you*

try to install them, it gets shut down by the government. We looked into it, but you needed planning permission.” “There's a guy [locally] who built his own wind turbine with parts from ebay. Powered his shed. The council seen it and they made him take it down.”

And **cowboy installers are a problem**: “It was six months before I got it working. They fitted it wrong twice. They said I'd get compensation, the company went into liquidation. [long discussion of costs and poor return] But if that's the sort of thing you're being caught with, I think it's a waste of time.” “Every second call is solar panels, solar panels. You don't know if they're total cowboys or not.”

Daily routine

- You hit the timer as you jump in the shower and it starts to count down your 4 minutes of hot water.
- You don't always use the timer; if you are shower in the evening to make the most of the hot water generated by your solar thermal panels during the day.

The **duration of a shower** appears to be something of a 'marmite issue': “no one wants a 4 minute shower!” versus “I like the timer idea. You don't need to be in a shower more than four minutes”.

There is some confusion about **why long showers are a problem** with respect to climate change. Some discussions implied it was about **wasting water** - and we have plenty of water: Alice¹: “We're not exactly short of water” Bryan: “I know, but it freaks me wasting water. You hear about England having droughts.” For some the energy cost of long showers was recognised, but it was assumed - half jokingly - that if this was from **renewables** it wasn't a problem: Charlie: “I love being in the shower. I can easily spend half an hour in the shower” Dermot: “Your solar panels will give you the hot water anyway!”.

Education

- Your neighbour child's primary 7 class are learning about personal carbon accounting
- He's been quizzing you about what things used to be like in the 'olden days' before people cared about their carbon footprint

There was a certain divide of views here with some people quite adamant that the need is **education for all ages, now**: “We need education for everyone; not just children. You can't just expect educating young children will be enough”. Others were of the view that the need is to **educate future generations**, for two different reasons:

¹ All names are fictional.

- Firstly it's ***too difficult for the current generation***: “Trying to teach our generation to change things is not going to work - old dogs new tricks. But trying to educate the next generation is probably going to have more of an effect. It might seem as though it's going to be a bit late, but trying to change our ways is a lot harder. Educating to do it right from the start is the only way that's going to have a real affect.”
- Secondly, some people appear to see ***climate change as something for the future***, not for action now: “we need to get future society on side for the change to come”; “I think it's important for the younger generation to learn for the future”; “Children are the future, we need to invest in the young ones to understand climate change and recycling”.

Many people were aware that ***climate change is part of school curriculum*** and approve of this: “A lot of schools are doing it, in nurseries too. That's good.” But people recognised that it ***doesn't always lead to behaviour change***: [Younger person]: “We are all educated the same way, so why is it some people our age aren't doing what they need to do?”

The importance of ***role models*** was emphasised by some participants: “We need to start by doing not by teaching. Showing people what the right thing to do is an easier way to learn than telling.” Though opinion was divided on the influence of parents: Fiona: “Education for children shouldn't just come from the schools” Georgia: “Yes, but the parents don't know enough. Everyone has to do these things.” Harry: “I've got two daughters 21 and 24, their mother and I are into recycling hugely, but they won't take it from us. It should start the school. It's the future, it should be drummed into them. If they understood how much energy it takes to make a can etc, they would understand it and do it.”

Here, as elsewhere in the conversations, ***recycling provided concrete examples of change*** to discuss, and the roles of ***infrastructure and habit*** were cited: “I went from a house where we had recycling bins into a flat where we just had rubbish... for the first six months I was like what can I do with this recycling, it was piling up and I had to take it to the dump. Now they've introduced recycling. When you're used to it, going back is difficult.”

Working life

- *With changes in the way people work, more of us are working more flexibly, with fewer long daily commutes to our work place.*
- *It's common to use a local office close to our home or take advantage of local shared working spaces where desks can be hired from day to day.*
- *Public transport links are improved making it easier for those who need to commute*

For many participants **local shared working spaces and working from home are desirable - and many are already doing this**: “I do work flexibly and I think it's brilliant. Just being able to use places that are closer to my home, go to the centre or up to the high school, use different areas which is a lot better. I would really like other people to experience work like that rather than being stressed out with kids and carrying the shopping and running back to do whatever else. To have a flexible boss or job...”

However it was widely recognised that **it's not possible for all jobs**: “Doesn't apply to my job at the moment, but I think working from local offices and using IT to make things as efficient as possible is good. Faster broadband into rural communities where people can work in local offices or from home, instead of long commutes.”

For some however, even where it was possible, there was a belief that **working alone separates you from the team**: “After 15 years they offered me the chance to work at home. I jumped at it, thought it would be great. Five years down the line I was bouncing off the walls. I wanted back in an office.”

An alternative approach suggested to reduce commuting was **swapping jobs to work locally**: “There's this thing when there's bad weather, teachers go to their nearest school rather than their own. Some teachers has swapped jobs as a result, because there was a stupid situation where they were both driving and passing each other. For some jobs you can do that, but for some you can't. Jobs aren't advertised in that sort of way. People swap council houses, that's easy, but there's nothing telling you about jobs. I'd swap right away! Would reduce congestion, climate change, improve health and time.”

As noted in several of the statements included above reduced commuting is frequently associated with **less stress and greater wellbeing**.

In one conversation the school run was a concern: for some the **school run is associated with congestion and emissions**. School buses and more walking to school were seen as the answer: “We thought if there were buses on for schools it would take a lot of traffic off the road, and that would be beneficial because of a lot less emissions, and free a lot of people up. There'd be a huge time saving, and the roads wouldn't be so congested and I think there could be a big saving in emissions.” “I've noticed people won't walk the length of themselves - they do the car when they don't have to. A lot of kids could walk to school [agreement]... unaccompanied, and instead they're being dropped by car.”

Weekly food shop

- You scan the barcodes to see where products have come from, to check the carbon cost.
- You cook most of your meals from scratch so don't have lots of packaging

- *You try to make sure that you minimise any packaging and recycle.*

The general view was that **buying local fruit and veg is good** and several people already try and do this. In one conversation there was a long discussion of where fruit and veg comes from; the facilitator asked: “*Do you want to see more local produce in the shops?*” “*Yes!*” - a loud chorus. Local sourcing of other food stuffs was not raised.

There was some discussion about the **business practices of supermarkets causing problems** by promoting out of season produce and unprocessed food being more expensive than ready meals: “*Supermarkets have a massive amount of blame for how they organise their business. I've got a fruit shop in [X] and I sell lots of strawberries and raspberries in the winter - it's ludicrous, but there's a demand.*” “*Question is what are they doing to ready meals to make them so cheap?*”

Making public transport easy

- *Using real time travel information streamed to your phone you are able to catch the train in perfect time.*
- *On the street cyclists whizz past, and beyond the cycle lane the electric cars and buses trundle along quietly.*

Getting around

- *In the cities and larger towns travelling by bike or public transport has become the norm.*
- *For longer journeys or where public transport is limited car clubs are popular, giving people easy access to a car. People book a car and pick it up in their neighbourhood.*

(Both topics addressed together below)

These topics generated considerable discussion. In principle **public transport is a good thing, but is too expensive**: “*But if you're looking to go on a day trip as a family and you type in for train ticket, the prices are horrendous, and you'd be as well taking the car, and you know you can go when you want. I think there's not much of an incentive to take the train.*” **Especially for families and groups**: “*No, if I'm going across to Edinburgh on my own, I'll park the car up locally here and just get the train. But if I was going with a group of people, I'd be thinking... the amount it's going to cost a family, it's going to be pretty steep.*”

Differences between the cost in different areas and rural versus urban/suburban costs were often highlighted: “*Transport is much dearer in Stirling than in Edinburgh or Glasgow.*” “*Fife does have an expensive transport system. [chorus: aye].*” “[*buses in*

Edinburgh are cheap] but the problem is getting from here [Dunfermline] to Edinburgh - it's like £7 on the bus or the train."

For many people **public transport is inconvenient, unreliable or unavailable**: In one conversation there was much discussion about how buses are not on time, do not link up, are very expensive; and one participant was late as she had to wait 25 minutes past the due time for a bus. *"Public transport is not reliable" "We need decent public transport before asking people to use it more" "I would like some public transport!"*

For some people, their situation meant **public transport is convenient and affordable**: *"Prefer to use it, more convenient no parking etc" "I don't understand why anyone would drive a car that lived in a city to go somewhere in the city, because it's absolute folly, getting there, getting parked, road works, the whole gamut, it's just insane. I wouldn't have a car if I lived in a city."*

Often **public transport in Scotland compared unfavourably to the continent**: *"When I was in Rome, every bit of public transport was €1, whether you're going from one end of the city to the other or round the corner. If our country done that, everyone would start using public transport, but they will no, because they're too greedy. And you're a lot cheaper to have a car, than you are to travel by bus to work and that. It shouldna be." "It's so easy around Europe to [use public transport]. Whenever I to Europe, I used to be panicking about how to get from A to B, but it's SO EASY and cheap. Over here it's ridiculous."*

Despite not being mentioned in the text for the activity car sharing came up in several groups. Generally people believe **car sharing is impractical and unattractive** for several reasons:

- **Difficulties of scheduling**: *"Maybe your daily commute [car sharing] would work. But not for just popping down the shops. Those unplanned journeys, you can't schedule someone to share with you."*
- **Problems of personal safety**: *"There's no way I'm sharing a car with a stranger, I've got my girls in the car, I'm just..." "So you wouldn't know who that person is getting in your, could be an axe murderer or ... you never know. I would only share my car with my friends."*
- **Cleanliness and damage**: *"I don't fancy sharing my car. I love my car too much. It's hard enough keeping it clean with having my own family in it, let alone with other folk using it." "I don't mind sharing my car if let's say two of us are going on the same journey, there's no point in two cars going on the same journey, meet up, go in, certainly. But: there's my keys, on you go, have fun kind of thing, that's not on."*

These and other discussions revealed a **lack of awareness of, and knowledge about, shared mobility schemes**: *"[car sharing] means share with people you know, not just pick anyone up." "Car clubs seem a good idea. Are there such things?" "Knowledge of the [bike] systems would help" "It's meaning share with people you know, not just pick anyone up." "I see it a bit like a library of cars."*

Despite this, there was some recognition that **in some situations car sharing could work and is already happening**: “I give people lifts a lot. Say parents drop kids off at my class, I’ll maybe run the back, that saves the parents a journey.” “Our company has incentives for car sharing.” “But if you’ve got a friend that works beside you.”

The general perception is that **cycling is impractical and unattractive**: “Who wants to be out on their bike in the dead of winter when it’s wet and cold. There is no provision here – cycle lanes are unsafe.” “If I’m working in an office, and I’ve got to be suited and booted during the day; and if I was going to cycling to my work, it’s not going to be practical, I get to work and I’ve got mud all over me, I’ve got to have a shower again when I get to work.”

Electric cars have potential where facilities can be provided: “I believe this would be brilliant, reduce congestion, makes the city less dirty, and packed and jammed in. Electric cars are the thing of the future. The council have a couple of electric cars, I don’t see why we can’t push that more along. Petroleum’s something we shouldn’t be using any more, there’s plenty of other options.” “[electric cars] are a good idea for organisations and business that can have the facilities there, going from one building to another. My college has them and charging stations. But not for everyone, every day.”

Local food growing

- You’ve had an enjoyable visit to the community garden.
- You’ve been doing some weeding in your area of one of the raised beds, and enjoyed the banter over a cup of tea.
- You’d taken the bus to the garden but will lift-share back with a friend.

For many participants **local food growing is attractive**: “growing your own food sounds good” mainly because of **provenance** “you would know there are no pesticides” “you know where everything is coming from and that it’s not being poorly farmed or being covered in chemicals, being imported from, flown around the world before it’s got to you, I think that’s a brilliant idea.” And **working together using local land**: “It brings the community together, it gets the kids involved” “a community garden would be good - everyone helping to take care of it” “So many little parcels of land that are eyesores that could be used [for food growing]”.

But **local food growing is not for everyone**: “I don’t see myself doing this” “No me neither” “there isn’t time for growing your own food”.

Other issues

The structure of the conversations tended to focus on issues of salience to participants and on action they might take. Despite there being no specific opportunity to discuss the wider context, some people raised concerns.

One participant, who has installed many green measures, was extremely sceptical, not of climate change, but of the **ability of the actions proposed by the Scottish Government to actually deliver the target reductions**: *“They are all great ideas, they present a kind of romanticised view of the future that I can't subscribe to. It's probably because I'm an engineer, I look at the practicability of things, and it leads me to conclude that... confirming what I've felt for a long time, that politicians, especially at Holyrood, have romanticised view of the future and don't worry about detail.”*

Other raised concerns about **whether Scotland's actions will make a difference**: *“How much does Scotland contribute to global warming? Probably less than one percent. The problem's not here it's elsewhere.” “You think what difference does it make, China's building a new power station every day” “Energy production is probably the biggest polluter on the planet. If only we could educate the Chinese and the Americans to produce renewable energy we might be able to solve this problem. Without their buy in, it's a complete waste of time. [long silence].”*

Familiarity and understanding of behaviours and technologies

Many of the participants were familiar with, or at least aware of, with most of the behaviours and technologies referred to in this activity. Questions of the facilitators about this were rare. However overhearing the paired discussions participants often asked each other about behaviours and technologies; between them they appeared to have sufficient knowledge to engage fully in the activity. Furthermore lack of knowledge was never mentioned as a barrier to the ranking activity.

Lack of knowledge and understanding was apparent however with respect to car clubs and cycle schemes as reported above, and also the concept of local office hubs was generally novel: *“For people working in offices, telling them to rent out office space near their home, I think that's taking their hard earned money. [Explained that idea is employers will provide local workspace] That's OK!”* As was the idea of “walking buses” for school children: *“Where my daughter lives they have something called a walking train for kids. And stops marked. Which I think is absolutely fantastic. Parents taking turns. [murmurs of interest and approval]”*

On a related note, tidal and wave power was not mentioned in the activity sheets, but was raised in the discussions several times. This was generally by someone suggesting it as a technology with potential that the government should support. The speaker and other participants were generally unaware of activity in this area in Scotland. (The conversations all took place before the launch of the Meygen tidal stream project by the First Minister in early September). *“Wave power. There must be a huge amount of energy in wave power.” “Tidal power is supposed to be good. If we can get that working...”*

Acceptability and adoption of behaviours

The majority of participants expressed general approval in principle for the behaviours and technologies highlighted in the Low Carbon Life in 2030 activity -

and for the need to tackle climate change. This was clearly expressed when discussing the ranking activity: for most people, and for most of the topics, the issue was purely one of ranking issues they were happy with - only in a few cases were those ranked lowest issues they actively rejected.

Where activities were rejected or concerns expressed, as can be seen from the quotes above, this was generally, though not always, a reflection that the behaviour or technology was not appropriate to their particular circumstances or too costly: *“It all seems very modest - all worth considering” “If these are the right measures done properly, then it’s worth considering” “We need to get it done! we have a small population, big countryside, lots of natural resources, we just need to be careful where we put the measures” “All are relevant; all are achievable” “There are so many good ideas; hard to choose”*.

In many groups and for many topics, some people reported, without prompting, that they were already doing it: *“Where I work we’re doing a lot of this stuff. You can work from home, we use recyclable stuff at the cafes, we are incentivised to cycle in, we have everything. It’s really good.” “Do this already. Check where food comes from. Buy European if I can’t get UK. I do throw away packaging, but I hope there might be less by then.” “I find a weekly food shop onerous; i like to go less often and cook ahead.” “I prefer to use public transport, more convenient, no parking etc.” “I already do this - vegetables and make my own jam.” “One thing I’ve done for my company, that helps climate change, is I’ve always fitted out a team with electric chain saws, electric blower, electric hedge cutters. And we recharge it as we move from job to job with an inverter in the car. It ticks a lot of boxes, because you’re using bio-oil for the chain, and no petrol and mixing oils. So the pollution is good, but there is the emissions coming from the exhaust. The technology isn’t there yet, but it’s the way we should be going.”* As reported above with respect to Local Energy however, the experience was not always successful.

Overall however while most behaviours and technologies are seen to be attractive and worthwhile in principle, few participants appear to have adopted them.

Discussion of Findings

In this section we discuss the key issues emerging from the conversations reported above.

Knowledge of climate change, causes, impacts and adaptations

Participants were generally aware of climate change as both an issue and a problem and were aware that action is necessary to tackle it. While some of the comments showed confusion between concepts and some factual inaccuracy, overall the majority of participants appeared reasonably well informed. A handful of participants had a considerable interest and knowledge of the topic. A handful either had very little knowledge or were actively sceptical. Generally the main causes of climate change mentioned were energy production and transport.

Some participants made little distinction between climate change and other environmental issues: in the conversations a range of issues such as climate change, smog, pollution, congestion, recycling and packaging, were often brought up.

In Protecting What You Love most participants were able to suggest changes that would be caused by climate change, though some were less sure. The changes suggested included climate impacts and adaptations, and also non-climate change environmental impacts such as pollution. The distinction between impacts and adaptations was rarely made, certainly not explicitly, both being considered to be the “results of climate change”.

Differences between groups

No obvious differences between the views of groups could be distinguished with the possible exception of those in cities having more positive views of public transport than those in small towns.

Reflection on the Climate Conversation Process

Protecting What You Love Activity

The guidance for this activity suggests asking people to identify the most important changes as a result of climate change. In practice people generally report the range of issues they discussed in their pairs. There is not enough time for a plenary discussion about ranking these.

As noted above people report a range of topics that do not directly answer the question. However, as facilitators we do not challenge these responses, except occasionally to get the conversation back on track, for the following reasons:

- to do would likely lead people to lose confidence and contribute less;
- there is insufficient time;
- the responses, despite not always answering the specific question, are nevertheless very revealing about what climate change means to them.

The activity also gives people who are less confident an opportunity to share something with the group based on their own interests and concerns - even if it is just to say why they chose a particular image. As well as its functional role, the activity also builds engagement and confidence.

We believe this activity also creates excellent opportunities for discussion and should form part of future climate conversations.

Low Carbon Life in 2030 Activity

In all of the sessions, the conversation in this activity showed little sign of flagging and had to be brought to a close by the facilitator. If more time were available the conversation could have covered more areas or considered issues in more depth.

While it works in its current format it is worth noting that the value was generally in the discussion rather than the ranking. It sometimes seemed as if the ranking aspect was being done purely to follow the instructions, rather than because the participants found it particularly interesting or useful.

The activity requires the participants to read quite a bit, which takes time and is a challenge for some. It also involves handling quite a lot of paper. There is also overlap between the topics.

It is unclear whether framing the activity around life in 2030 actually helps. On one hand it does help to distance discussions from practical problems today and discuss an aspirational future. However, in practice discussion tended to 'fall back' to discussion of people's situation today.

While the activity generates good discussion, little or no useful data is produced by the ranking process itself. Without recording and analysing the conversations this

activity can contribute little to research. This could be addressed if the topics included more that were contentious, and hence made the ranking more meaningful, or through a similar activity but asking people to score the mini-scenarios in some way, instead of ranking.

Recruitment

We used a market research company to recruit participants. Potential participants were aware the conversation was about climate change and were paid £30 for attending. We recruited 10 participants for each conversation, as can be seen from the table at the beginning of this report, there was little drop off allowing us to meet our objective of 8 to 9 participants.

This approach was effective in bringing participants together for the conversations. While we didn't ask people their reasons for attending, our impression is that a small number of people had a strong interest in climate change, while for others they had some interest and were curious. Some participants appeared to have participated in similar focus groups in the past and were attracted by the opportunity for discussion with others and the small fee.

As far as we can judge the recruitment approach does not appear to have selected or excluded people with particular interests or views on climate change. The nature of the conversations and the views expressed are similar to the first pilots where participants were not aware of the subject of discussion.

Participants' views of the process

The feedback sheet asked people which part of the discussion they enjoyed the most and the least. Many participants also spontaneously commented on the session to the facilitator as the session was finishing and people taking their leave.

Without exception participants reported that they enjoyed the event; many participants reinforcing this as they thanked the facilitator. The main reason given was that they enjoyed the discussion and listening to other people's points of view.

The main response to question of what they enjoyed least was that they enjoyed it all. Several people commented they would have liked to have had more time to continue. A few people mentioned specific topics, but there was no clear pattern. The importance of creating a welcoming and safe space is highlighted by a few responses: *“nothing much, I felt comfortable even though I did not know much to begin with”* *“initial introduction to the group - just because I didn't know anyone and felt a bit self conscious”*.

This suggests the overall approach provides an enjoyable and worthwhile process for the participants.

Participants' actions

On the feedback sheet participants were asked what two actions they might take as a result of the discussion. Most made some response to this question. In order of frequency, actions people said they might take included:

- Changing behaviour, e.g.: save energy; reduce waste (including water); recycle more; buy more locally; use less processed food and grow vegetables.
- Install or acquire equipment, or at least find out more about doing so, e.g.: wind turbine; solar panels; electric car; triple glazing.
- Learn more and be aware, e.g.: follow what govt doing; find out more about climate change; learn more about tidal and wave power; think more carefully about own footprint.
- Discuss with others, e.g.: tell others about the discussion; speak more about climate change with peers; talk to friends to encourage them and show that the government is trying to talk to people about it.
- Educate and encourage children.

Some participants answered this question by saying they wanted to see the government and others taking action, including more wind turbines and tidal power.

While encouraging people to take action is not a specific objective of the conversations it certainly has the potential to do so.

The interest in having further discussion with others is noteworthy and indicates that word of mouth referral could be a way of organising more climate conversations and of recruiting more participants.

What would help participants - and who

On the feedback sheet participants were asked what help they might need to take those actions. Help requested included:

- More affordable solutions e.g. micro-renewables, insulation, electric cars; including through financial support from government.
- Increased awareness, education and advice to improve understanding. This included carrying out personal research as well as government programmes.
- Reliable sources of advice and honest evaluation of technologies etc.
- Major investment from government in renewable energy supply.

While the government was frequently mentioned as a source of help, several people said they needed to spend more time either doing activities, e.g. cooking and growing, or educating themselves through using existing sources of information. Other sources of information, e.g. local growing groups, were mentioned occasionally.

It was noteworthy that most people appear to be unaware of existing schemes and sources of advice and support - although this wasn't asked.

Over a third gave their email address for more information suggesting they are genuinely interested in finding out more.

Most participants who said they wanted help to take actions appear unaware of:

- the sources of advice and support that is already available from the government and elsewhere
- the investment from government and industry in renewables and other measures
- the range of actions being taken by government and others, e.g. Climate Action Plan

There is considerable potential to raise awareness of the above generally and specifically through further climate conversations.

Recommendations

Climate Conversations

Recommendations for future development of the Climate Conversations process.

Process

The Climate Conversation structure and process works. However time for discussion is short; useful discussion sometimes needs to be curtailed and the process sometimes felt rushed. Participants often expressed surprise that the time was up and there was some willingness to continue. We recommend considering extending the time to two hours.

Materials

The Protecting What You Love activity works. It could benefit from a wider range of photographs now available. This should be monitored going forward to assess whether the choice of images is unduly influencing the results.

The Low Carbon Life in 2030 activity works. However as noted above it is not ideal, and alternatives or a newly designed activity should be considered taking account of the 'lessons' section above. In addition:

- The example of bedroom may have been a distraction as people discussed their preferences for bedroom temperature. We recommend any future revision of the activity uses the living room rather than the bedroom.
- The text chosen for the Education topic implied learning about climate change is something for children, not adults. It may be worth using text that relates to adult learning.

Recruitment

The recruitment used (via market research recruiters) works. However it becomes more expensive as one moves away from the main urban areas due to cost of travel and subsistence for recruiters.

The potential of local climate action groups and other local groups organising and hosting Climate Conversations should be explored. This should include their potential needs for training and support in some areas - including:

- Promoting the events and recruiting in such a way as to reach a broad audience
- Facilitating the conversations without pushing a particular agenda

Follow up

As an immediate action there is an opportunity for this research to inform the postcards that are being developed by the Scottish Government to inform people what they can do about climate change. In particular it suggests that individual actions should be put in the wider context of action by others including government.

Beyond that there is considerable potential for the conversations to provide links to information, advice and support - especially to local activities, practical support, networks and resources. Investigation of this potential should include the role of email and/or phone follow up, face to face networking and support, as well as online resources.

Awareness raising and communication

This work identifies a number of points that are relevant both to the future development of this strand of work and communication about climate change more generally:

Communicate more effectively what is already being done, by government and others, for example:

- The situation with regard to building standards for energy efficiency.
- Investment in renewables, including research into less well known options (eg; tidal).

The potential for a rebound effect as a result of 'free' energy from micro-renewables, and of 'guilt-free' energy from green tariffs and from a largely renewable grid, should be considered. This may have implications for communications on energy efficiency.

Climate change is often perceived as something for the future. Consider how to communicate that climate change is already happening, and why action is needed now.

The importance of infrastructure and habit appears to be well recognised in respect of recycling. Future communication and action on climate change could build on this by making links between people's experience of recycling and what is being asked of them regarding climate change.

When communicating about remote working, recognise that it is not applicable to all jobs, and address concerns about lack of connection with the team.

While there generally an acceptance and indeed sometime willingness to adopt more sustainable travel options public transport is generally perceived as expensive and inconvenient; people are confused about sharing systems; and see cycling as unattractive. Significant further work will be required to improve the services, and to enhance understanding of the alternatives to the car. Promoting alternatives without doing so risks alienating people who in principle accept the need for change.

Conclusion

The Climate Conversation process is an effective and worthwhile way of not only understanding better the public's views on climate change, but also of encouraging greater interest and awareness.

The key findings are that people are generally aware of climate change as both an issue and a problem and were aware that action is necessary to tackle it. While some of the comments showed confusion between concepts and some factual inaccuracy, overall the majority of participants appeared reasonably well informed.

The majority of participants expressed general approval in principle for behaviours and technologies to reduce emissions. Where activities were rejected or concerns expressed, this was generally, though not always, a reflection that the behaviour or technology was not appropriate to their particular circumstances or too costly.

Appendix 1: Workshops and Participants

Date	Location	Participants			Age range	Ethnicity		Facilitator
		Total	m	f		White / Scottish	White / European	
12 July	Stirling	10	5	5	20 - 66	10		PC
21 July	Leith	6	3	3	20 - 73	8	1	OL
26 July	Dunfermline	9	3	6	21 - 68	9		OL
27 July	Glasgow	9	4	5	18 - 62	9		PC
9 Aug	Galashiels	8	5	3	27 - 78	8		OL
10 Aug	Pitlochry	9	4	5	25 - 86	9		PC
11 Aug	Lanark	10	3	7	18 - 67	10		OL
17 Aug	Milngavie	11	4	7	18 - 77	11		PC
22 Aug	Glenrothes	10	6	4	25 - 78	10		OL
24 Aug	Paisley	8	4	4	18 - 71	8		PC

Appendix 2: Protecting What You Love: All quotes

Impacts on wildlife and non-urban landscapes

- *Climate change impacts – loss of trees, erosion, diseases – overall effect on flora and fauna.*
- *With rising temperatures, the land will become more arid, and it won't be this lovely green landscape, it will become dry and the eco-culture will change because of that.*
- *I want to preserve this type of environment. I believe climate change can ruin this environment completely. The weather will change and trees might not be able to cope.*
- *Wild flowers meadows, important for pollinating insects which are very badly affected. Climate change will affect the animals and insects, no longer find the right environment. Habitat destroyed.*
- *There is an impact on seasons and the growing season.*
- *Lack of seasons.*
- *Climate change impact on wildlife, natural spaces.*
- *Wildness - I hope it is preserved and wildlife.*
- *[Pollution in a rock pool] The mess we make of our lovely environment*
- *We need to keep wild habitats safe from development*
- *The otter reminds me of vulnerable creatures*
- *Effects on deer - they need cold weather*
- *[picture of seal] He was saying Scotland is one of the countries with the most seals, so if there was a massive change in our climate it's going to affect them.*
- *[Stag] Climate would affect all our animals, if there's too much rain it can turn the Highlands into bogs, and if there's not enough rain, they'll not have enough water. It could affect a lot of wildlife.*
- *Disease in fish due to warmer water*
- *New fishes in rivers due to warmer water*
- *Reminds me of a wee fishing village. I love going to those places. There's the history of the country in these places. My fear with climate change is that if the ice caps melt, these places are all disappearing. The people have got to go somewhere, somewhere higher. That might be the places these animals [deer] stay in. We start to take over their habitat, so that we can survive. It is a bit of a worry. These we villages could all just disappear, overnight potentially.*
- *There will be more of us and less space for wildlife. We have a responsibility toward other creatures.*
- *I love the out of doors what might happen to our beautiful countryside? Too hot, too wet, freezing if the gulf stream fails? Cutting down too many trees for development, flooding. Scotland is one of the most beautiful countries in the world. I will be heartbroken if all of that went away.*

Impacts on wildlife and non-urban landscapes - specifically water quality

- *Impact to animal habitats; quality of water. If I were an otter straying into an urban waterway, I would feel trapped, out of breath.*

- *Lochs in Scotland are not well maintained, they are quite dirty. With climate change, water levels will be lower and more dirty. The whole environment around the lochs will be more polluted.*
- *[Family on the beach] Rising sea levels, pollution.*
- *Oil rigs could ruin water quality.*
- *Water - will it always be clear and clean?*

Impacts on wildlife and non-urban landscapes - specifically trees

- *Autumn leaves – they are now often marred by disease or pollution [human caused].*
- *Diseases attacking trees - diseases imported on plants and soils.*
- *More tree diseases because of warmer winters.*
- *Weather affecting trees, it's wetter.*
- *I chose trees. Because I like to climb them, they're green and they keep us all alive, and with climate change, if we go to hot, we'd become a desert and have no water to keep the trees alive. And if we go cold we're going to struggle a lot because we're not going to have enough sun. When you look at the sky, there's a lot of chem trails and stuff, and metal particles being sprayed across the sky, and that's reflecting our sun's light and if that continues, we're not going to have trees anymore. This summer alone the blooms aren't as big, there isn't enough flowering. It's a big dramatic...*
- *Deer eating saplings, preventing them regrowing. We get a lot of our oxygen from trees. Trees are super important. Scotland was once a tree covered landscape. [Question: How might climate change affect that landscape?] We got a bit sad about it really: we won't survive if there's no trees. When trees are cut down for forestry they aren't replanted, I see that a lot, dead trees. Companies should replace what they take away.*

Impacts on nature, leading to impacts on people

- *Climate change will impact habitats both for animals and people – how to preserve these?*
- *Animals affected by dry conditions and affect agriculture.*
- *This picture has a good combination of civilisation and nature. It's got flatlands, hills, the buildings. It looks calm, it's good. A nice place to go out for a walk. Climate change could affect it. If it rains too much it's going to cover the flat lands, driving civilisation and its buildings further away, and giving us less land to grow food on. If we get too warm, a lot of the crops are going to die, farmers will have to use more water, which we're short of in the first place, so there's going to be an effect there.*
- *Air pollution could ruin hillwalking*
- *[Childhood holidays] Beaches are not as accessible now due to hydro power and pollution*

Impacts of flooding and sea level rise on nature

- *Lochs - water levels rise, trees waterlogged*
- *Erosion of river banks, rising temperatures, affecting landscape.*

- *water levels are changing; impacts on migratory birds*
- *I picked a wee river. Climate change will cause that to go higher and higher, and it will probably burst it's banks and whatever's around it will suffer. Trees and that, because they'll have nowhere else to live. Salmon won't be able to leap because the staircase won't be there any more.*
- *That's a nice loch scene. You can see the shoreline and on here the grass grows down to the river. With the climate change, that will rise up so it takes over everywhere, and there'll be... land will just be water.*

Impacts of flooding and sea level rise on nature, causing impacts on humans

- *Rising sea levels will cause more erosion. Impacting on fish and pollution levels, then impacting on humans and wildlife.*
- *Flooding in rivers, affecting fishing*
- *Rising sea levels, may be affecting fishing*
- *Rising sea levels, affects on farming*
- *Rivers will cause flooding more often, causing damage to roads and other infrastructure, affecting people's ability to get around.*

Impacts of flooding and sea level rise on humans

- *Flooding, my auntie's house was flooded, the bottom level, a year or so ago. Still trying to get repairs and stuff. Floods will get more regular; start happening in places you wouldn't normally see them in the past. And it's a very personal, immediate reaction, not just theoretical, this happens to you, affects your daily live and your family.*
- *Sea levels rising, threat of flooding, lots of Fife villages are not high above sea level.*
- *More and more people will have to move due to sea level rise.*
- *Flooding will be more frequent. Will cause problems for the economy, arable agriculture, damaging roads affecting local communities and houses.*
- *Buildings need to be redesigned due to flooding; more money on flood prevention.*
- *Have had floods in Dunkeld: high water in the river causing erosion of embankment.*
- *Reminds me of a wee fishing village. I love going to those places. There's the history of the country in these places. My fear with climate change is that if the ice caps melt, these places are all disappearing. The people have got to go somewhere, somewhere higher. That might be the places these animals [deer] stay in. We start to take over their habitat, so that we can survive. It is a bit of a worry. These wee villages could all just disappear, overnight potentially.*
- *[Flooded landscape] Chose this because I like the sky! You see the sign: "danger; deep water; strong current". But it's obviously land here, because there's a bin! But the water's coming over into the land. You can see there's pollution. The danger is if it keeps going higher and higher.*
- *When I was really young I lived in Aberdeen and I've lived there recently for six years, and I've noticed that quite often public parks being flooded from the*

rain. I've seen changes in the weather in my lifetime. Some drastic floods in Aberdeen and Elgin that i never heard about when I was younger.

Demand for resources leading to impacts

- *[Offshore worker] Oil is definitely running out, will fracking damage the environment? [Much discussion over this with some maintaining high standards of monitoring here will make it ok; no one wanted a fracking well near them though]*
- *Deforestation contributes to climate change. With more people on the planet we have greater need for agriculture, domestication of animals for food. So there will be more deforestation to make way for fields for the deer. And deforestation for land for sheep and cows.*
- *Population is growing, we will need more agriculture; this will lead to deforestation and monoculture.*
- *With over fishing, fish stocks will go down, this will also affect wildlife.*

Logging and deforestation

- *[West Highland Way] No sign of any obvious pollution there. But my worry is, anytime you're out, you're seeing logging getting done. And if they're going to take away, are they going to be replaced with new trees? [?] relax up there, get away from it all. If they going to cut down the trees and replace them with wind turbines... I know they are meant to help us with electricity and that, but they're an eyesore and they'll ruin... and have an effect on tourism which brings in a lot for Scotland. I don't know if it has to do with climate change, but down in the Borders there used to be forest, they've been cut down and turbines appeared.*
- *Deer eating saplings, preventing them regrowing. We get a lot of our oxygen from trees. Trees are super important. Scotland was once a tree covered landscape. [How might climate change affect that landscape?] We got a bit sad about it really: we won't survive if there's no trees. When trees are cut down for forestry they aren't replanted, I see that a lot, dead trees. Companies should replace what they take away.*
- *Deforestation is also required to make more room for wind farms.*
- *Trees are coming down across the world, probably not being replanted at the rate they are being taken down. That affects our pollution and the environment. With temperature rising there's more and more different insects coming into Britain - how's that affecting the trees with diseases etc?*
- *I am worried about deforestation.*

Conflict between benefits versus negative impact or unsuitability of some technologies

- *More wind farms will cause a visual impact on the landscape.*
- *Impact on green spaces from tackling climate change - e.g. wind farms.*
- *Solar panels don't suit all houses: new builds are better.*
- *This reminds me of the environmental impact of the Beaully to Denny power line.*

A historical perspective on change

- *Scotland has a long history; how much longer will it continue if climate change is as bad as some people think?*
- *Grew up seeing these cranes in Govan everyone had jobs then it's part of history they are like statues now but the industrial age wasn't good for the climate I can remember the smogs we don't have that now, but there aren't as many jobs...*
- *The new roads we're getting in the cities. I'm from Glasgow, and we used to get smog, so bad you couldn't see from here to that wall. They stopped that, it was caused by coal. And that what you're ending up with: a clear sky and clean building and trees. I'm seeing some good!*
- *[B&W school photo] That reminded me of milk that came in bottles, rather than plastic. Plastic is a big issue. Could we not go back to milk in bottles? How do they recycle plastic? I don't know. Does that cause pollution?*

Changes to urban & industrial landscapes

- *Chimneys – will they become a thing of the past. Does architecture need to change – maybe re-purpose chimneys?*
- *Art collections – how much energy used for heat and light; overall resources used; impacts to exterior of the building?*
- *I picked a construction site, just because I've worked with these machines, and the emissions they send out are not very good for the environment, and also with the climate change. With the heavy rain these building sites get shut down because they can't lift any of the soil or that.*
- *Argyll Street - I identified with that - that's me, but I am unhappy about empty buildings.*
- *Cranes and equipment may need to be maintained differently depending on the temperature.*
- *[Leith Walk] Overcrowding with cars. That right away is pollution. They are working on it already with the lead, and cutting back to 20 mph. Although I don't like cycling, it's probably the best way to get around in Edinburgh now. But they're breathing it in all the time, the pollution.*
- *Traffic causes a lot of pollution which in turn will affect your environment. There's more and more cars, with young people getting cars, and China and places like that.*

How can we reduce emissions? What's being done?

- *[Urban/natural mix photo] noticed no solar panels, high rise buildings, nature disappearing, discussion around cost of and subsidies for solar panels – what is government doing to help?; discussion around best use of scarce natural and financial resources; high rise buildings.*
- *How can we as a country reduce emissions? Heating, packaging, heating, car pollution (which is less now) We need to keep an urban and rural balance.*
- *Scotland will never get all the energy it needs from windmills and solar power. It will need to extract shale gas in the central belt. Otherwise it won't survive.*

This will become an industrial landscape again. (But it won't be as nasty as original shale extraction).

- *Scottish Government says “no fracking”. So if we don't have fracking and we don't want nuclear, what have we got that's green? We're importing coal from Australia for heating. We're starting electric cars, but we need electricity to run them. Where will electricity come from? Windmills will blight the landscape.*
- *What about alternative energy - wave, offshore wind farms?*
- *We need education to help the adults of the future make the right decisions.*
- *Education is needed.*
- *We need to figure out ways to live and work that doesn't make these impacts.*
- *It is important that the measures taken are effective and that there is proof that they are effective.*
- *Climate change needs to be popularised for people to act on it, e.g., Linda McCartney managed to popularise vegetarian food because it was good and because of her status.*
- *Spending power can change things.*

Appendix 3: Low Carbon Life - Additional quotes

Additional quotes relating to selected paragraphs are included below.

Keeping heat in / Local energy

The *cost* of installing insulation etc:

“I couldn't afford to get anything like this, it's down to finance. Everything's not going to coming from the government, they're going to have find the money somewhere.”

“...the cost doing the houses. It's not like it's going to get done for free for everyone. Some are going to have to pay for this there selves...”

Building all homes to high standards:

“Why aren't all new house built with ground source heat pumps?”

“I've heard the initial cost, the outlay for these solar panels, it's years before you get anything for it. Whereas there's a new housing scheme where the solar panels are part of your house, you're possibly not out of pocket because you're moving into house that's already got them.”

Problems with government schemes and planners:

“We got this Land Rover, thinking we could run it on biodiesel. We looked into it with [a specialist] and you could make only a little [biodiesel]. The cost to make it was just as much as regular diesel. Why would you bother? He was going to make it, at 13p / litre, but the government came in a slapped on a tax. It was horrible.”

Working life

It's not possible for all jobs:

“It's OK if you work in an office, but if you're a lorry driver or digging up roads.”

“From a personal point of view my job is out in the woods, in people's gardens. We don't need to share transport or faster internet.”

Working alone separates you from the team:

“Working from home you become disconnected from the team. People say you don't, but you do.”

“This brings issues - people need to be able to physically work together”.

Getting around

Public transport is a good thing, but is too expensive:

“I put this near the top, but I’d add that it needs to be affordable, like it says. My dad used to commute to Edinburgh everyday by train, but it’s got so expensive that he’s driving in on his own. And it’s easier for him.”

Especially for families and groups:

“Public transport is expensive, kids get lifts to school, because it’s cheaper in the car.”

Problems of personal safety:

“Car sharing seems good on paper, but in the real world it isn’t practical. How many women would feel comfortable sharing a car with someone they’d never meet?”

Cycling is impractical and unattractive:

“Cycling isn’t safe; lanes are not connected.” “We need safe cycle lanes, quieter traffic less pollution.”

Electric cars have potential where facilities can be provided:

“Transport has to be dealt with, it’s a big emitter, but for me, especially in Scotland, I don’t think electric cars as they are at the moment could be much of a... I know most of us live in cities, but it’s such a rural country. Doing a long trip you’d have to stop and plug it in and wait for three hours or something.”