



# Just Transition Commission

Call for Evidence Analysis Report





**The imperative of a just transition is that Governments design policies in a way that ensures the benefits of climate change action are shared widely, while the costs do not unfairly burden those least able to pay, or whose livelihoods are directly or indirectly at risk as the economy shifts and changes.”**

**Just Transition Commission**

<b>1</b>	<b>Executive Summary</b>	<b>4</b>
<b>2</b>	<b>Introduction</b>	<b>10</b>
<b>3.1</b>	<b>Economic opportunities and challenges</b>	<b>14</b>
<b>3.2</b>	<b>Social opportunities and challenges</b>	<b>25</b>
<b>3.3</b>	<b>A successful just transition</b>	<b>33</b>
<b>3.4</b>	<b>Actions for the Scottish Government</b>	<b>39</b>
<b>3.5</b>	<b>Support for specific groups</b>	<b>53</b>
<b>3.6</b>	<b>Additional evidence</b>	<b>60</b>
<b>4</b>	<b>Conclusions</b>	<b>64</b>
	<b>Appendix 1 – Call for Evidence questions</b>	<b>66</b>
	<b>Appendix 2 – Profile of respondents by sector</b>	<b>67</b>
	<b>Appendix 3 – Question 6 sources cited</b>	<b>68</b>

# 1. Executive Summary

# 1. Executive Summary

- 1.1** Scotland has set a target to move to a net-zero economy by 2045. Significant change is required to realise these ambitions and will necessitate structural shifts to the economy and our society.
- 1.2** In 2018, the Scottish Government established the Just Transition Commission ('the Commission') to provide Scottish Ministers with practical, realistic, and affordable recommendations which: maximise the economic and social opportunities of a net-zero economy by 2045; build on Scotland's existing strengths and assets; and understand and mitigate risks.
- 1.3** Following publication of its interim report in February 2020 the Commission ran a Call for Evidence, providing stakeholders across Scotland – individuals, representative bodies, public bodies and businesses – with an opportunity to share their views in advance of the Commission's final report<sup>1</sup>.
- 1.4** Six open consultation questions covered: the economic and wider social opportunities and challenges associated with meeting Scotland's climate change targets; the actions the Scottish Government should take to manage these; what a successful transition to net-zero emissions would entail; and steps to address issues faced by groups or communities that may be adversely affected.
- 1.5** The Call for Evidence received 274 responses<sup>2</sup>. This report presents the range of views expressed and common trends in comments. Responses to the consultation, where permission for publication was granted, can be found on the Scottish Government's website<sup>3</sup>.

## **Q1: What do you see as the main economic opportunities and challenges associated with meeting Scotland's climate change targets?**

- 1.6** The positive economic impact of new jobs associated with a transition was the dominant theme in comments on opportunities. Several referred to a new workforce of green jobs and noted the potential for job creation across multiple sectors. Conversely, many highlighted the significant challenge of managing job losses in industries negatively affected by the transition.
- 1.7** Opportunities and challenges associated with developing the renewable energy sector were described. Most commonly mentioned was the opportunity to invest in, and develop, a strong and resilient renewable energy sector. A few respondents specifically noted the importance of focusing on green hydrogen. Respondents noted that Scotland is rich in natural resources with potential for onshore, offshore and floating wind, solar, hydro, wave, tidal and biomass, and that if successfully utilised, these could create significant economic gain for Scotland while reducing emissions.
- 1.8** Training and skills were frequently mentioned as a challenge, including concerns for workers transitioning between sectors, in particular those in oil and gas or the wider fossil fuel sector. More broadly some noted the challenge of ensuring a pipeline of skilled workers to fill the roles needed to achieve a successful transition.

<sup>1</sup> The deadline for submissions was extended due to the COVID-19 pandemic

<sup>2</sup> This was in addition to the evidence collected by the Commission through the normal course of its work

<sup>3</sup> [https://consult.gov.scot/just-transition-commission/just-transition-commission-call-for-evidence/consultation/published\\_select\\_respondent](https://consult.gov.scot/just-transition-commission/just-transition-commission-call-for-evidence/consultation/published_select_respondent)

# 1. Executive Summary

- 1.9** Several referenced the potential growth of industries such as forestry, and new jobs in sustainable agriculture, land and wildlife management and tourism. Respondents highlighted the opportunity for better, more responsible land use and management, through rewilding, forestry, peatland restoration and conservation, and the protection of other natural environments as ways to improve biodiversity.
- 1.10** A desire among some businesses and sectors to maintain the status quo and slow or prevent change was described as a challenge by some. Many argued for a fundamental change to Scotland's economy and in how economic success is measured, moving away from a focus on GDP towards wellbeing, for example. Several noted the opportunity to enhance the role of the circular economy in Scotland.
- 1.11** The cost of the transition was also widely highlighted as an economic challenge, for individuals, businesses and society as a whole. Several noted that significant investment is needed to facilitate change at the scale and pace required and a need for up-front investment in new and renewable technologies and supporting infrastructure. A few highlighted the additional challenge of COVID-19 potentially reducing public funds and limiting the appetite for the private sector to invest.

## **Q2: What do you think are the wider social (health, community etc.) opportunities and challenges associated with meeting Scotland's climate change targets?**

- 1.12** Health benefits were most commonly highlighted by respondents, who anticipated better outcomes resulting from cleaner air, active travel, dietary changes and improvements to the housing stock. Many respondents described the changes they would like to see in transport infrastructure and travel behaviours, foreseeing a growth in active travel, public transport and electric vehicles.
- 1.13** Potential improvements to mental health were referenced by several respondents, who linked the transition to greater use of the outdoors, green space and exposure to nature; being more active with more walking and cycling; better quality and warmer homes; and access to services and social activities.
- 1.14** Respondents highlighted opportunities for greater community cohesion through the transition, resulting from localised approaches to achieving lower emissions. Themes in these comments included discussion of community services and shared spaces, and reflections on the potential benefits of community ownership of land and energy generation infrastructure.
- 1.15** The effect of the transition on social justice and inequality was the focus of many responses, with discussion of the challenge to ensure that the transition benefits everyone – both socially and economically. Many saw the net-zero transition as an opportunity to reduce inequality and create a more just and fair society. In relation to this, fairer distribution of economic benefits, more inclusiveness, support for marginalised or vulnerable groups, less social exclusion, and improved transport and connectivity enabling access to education, jobs and services, were referenced. The potential negative impacts of a badly managed transition were also highlighted as a challenge, with issues such as potential higher living costs for people in poverty cited.

# 1. Executive Summary

- 1.16** Many reflected on improving the energy efficiency of Scotland's housing stock. Themes included: that such a large undertaking could generate many jobs; that lower heating and electricity costs would have a positive economic impact for individuals; and the challenge of funding improvements, particularly given those in the poorest quality housing tend to be least able to afford to take action.
- 1.17** Food was mentioned by several who highlighted the opportunity for dietary changes to benefit health and for more food to be grown and purchased locally.
- 1.18** Opportunities to create, expand, protect and encourage greater use of green outdoor space were noted. Many championed more sustainable approaches to day-to-day life and some shared views on how the transition could be an opportunity to change working practices, including more working from home.
- 1.19** Many respondents raised the need to change public attitudes and behaviours, typically describing this as a challenge. The public were described as disengaged about the climate emergency or the scale of change required to alleviate it.

## **Q3: What would a successful transition to net-zero emissions look like for your sector/ community?**

- 1.20** Respondents painted a picture of a prosperous, healthier and sustainable Scotland where environmental considerations are central to decision making. Success has resulted in higher employment in sustainable and valued jobs. Poverty has been reduced or eliminated, with ambitious changes to housing alleviating fuel poverty. Decarbonisation and renewable energy have reduced pollution, as has more public transport and active travel.
- 1.21** A few respondents suggested COVID-19 has meant people in Scotland have experienced some of the changes that would feature in a successful transition, demonstrating how lives could be improved by adopting such changes permanently.

## **Q4: What actions do you think the Scottish Government should take to manage the opportunities and challenges referenced above?**

- 1.22** Calls for leadership and a sense of urgency were frequently identified; several respondents urged the Scottish Government to be bold and set more radical targets for emissions. A range of legislative and policy approaches was suggested to manage the opportunities and challenges outlined in submissions. Many respondents urged the Scottish Government to engage in an information and awareness campaign to garner public support and understanding for the transition.
- 1.23** Suggestions linked to energy and emissions included calls for a decommissioning plan for the oil and gas sector and a more ambitious goal of achieving a 90% reduction in carbon emissions by 2035. Suggested actions to support Scotland's emissions goals included addressing practices that undermine net-zero (such as peat extraction), ending subsidies for oil and gas and encouraging ways to improve energy efficiency in homes.

# 1. Executive Summary

- 1.24** An appetite for innovation and investment was evident in many responses, including research and funding to support the development of renewable energy systems technology and to enhance Scotland's energy infrastructure.
- 1.25** There was wide ranging discussion in relation to land use and agricultural practices. On food, there was a focus on sustainable approaches, including frequent references to food waste, with calls for an end to schemes that encourage excess food purchasing, and for single use plastics to be banned in Scotland.
- 1.26** Calls for actions linked to transport appeared frequently, for example: the development of an electric transport system; national ownership of public transport services; general discouragement of car use; and requests for the Scottish Government to nurture and promote a cycling culture.
- 1.27** The contribution of expenditure and activity by the public sector to the process of reducing emissions was highlighted by many respondents. They urged the Scottish Government to, for example divest public sector pensions from any investment in fossil fuel companies, and to direct procurement systems to increase the spend on local, sustainable businesses.
- 1.28** Some respondents suggested taxation could support the shift to a net-zero economy, for example tax to discourage activity contributing to emissions, or tax as a means to generate revenue to invest in developing the green economy. Many respondents spoke positively about the Scottish National Investment Bank and suggested it could play an important role in the transition, for example by funding projects that contribute to achieving net-zero or by investing in green bonds.
- 1.29** Respondents anticipated a role for communities in supporting the public to change, fostering energy efficient ways of living and raising awareness of the need for a transition. This included arguments for devolved decision making forums such as Citizens Assemblies and comments on the Community Empowerment Scotland Act (2015) and role of Community Planning Partnerships in shifting the balance of power and engaging communities in efforts to achieve a transition.
- 1.30** Frequent calls for sectoral adjustment plans and for investment in workforce training and development to support the transition were identified. This discussion included: an acknowledgement that those working in carbon intensive industries will need support to shift to new forms of employment; and wider reflections on the range of skills Scotland will need for a greener economy.
- 1.31** Some suggested households with low levels of income should receive financial assistance, on the basis that the shifts required in behaviour could disadvantage the most vulnerable. In some cases, this was spoken of in general terms; others made specific calls for the introduction of a universal basic income.

## **Q5. Are there specific groups or communities that may be, or feel that they may be, adversely affected by a transition to a net-zero carbon economy? What steps can be taken to address their concerns?**

- 1.32** Views on groups that may be adversely affected typically fell into one of six categories: those working directly or indirectly in jobs linked to fossil fuels or carbon intensive industries; lower income households; vulnerable groups including people with protected characteristics; farmers and landowners; car users; and people living in rural or remote rural areas.

# 1. Executive Summary

- 1.33** Respondents called for close consideration of impacts and mitigating actions. Examples of steps to address concerns included job guarantees, income protection, apprenticeships, training incentives and investment in the growth of sectors and technologies that are not fossil fuel dependent, to encourage job growth.
- 1.34** Some suggested that without a specific focus on lower income households, or vulnerable groups, existing inequalities could be exacerbated. In this vein, a few advocated for a human rights-based approach to just transition, highlighting principles of non-discrimination, participation and accountability as important.
- 1.35** Many respondents called for recognition that people in rural areas depend on cars to access the employment and services they need. Significant changes in land use were anticipated as part of a transition to net-zero, including a shift in production from livestock to crops. Solutions included research, education and training, and financial support such as fair pricing schemes or a guaranteed basic income.

## **Q6. Please provide here any other information, evidence, or research you consider relevant to the work of the Commission.**

- 1.36** A multitude of examples, reports, books, websites and articles were shared. This information typically fell into three groups: (1) scientific evidence illustrating the urgent need to achieve net-zero; (2) material discussing the political, philosophical or economic implications of managing climate change; and (3) examples of practice or models for the Commission to consider. A full record has been compiled for the Commission to review and is included in the Annex to this publication.

## **Conclusions**

- 1.37** A range of informed individuals and stakeholders took part in the consultation. They appeared to be engaged and knowledgeable about a huge array of matters relating to a just transition, including both the economic and social impacts of change and the groups who are likely to be affected. Respondents were also able to outline their vision and ambitions for a successful transition and the actions required to achieve this. Together, these responses provide a useful evidence base for the Just Transition Commission to draw upon when developing their final report.
- 1.38** While the severe consequences of climate change and the importance of moving to net-zero was an ever-present theme, the significant challenges in ensuring a just transition were acknowledged, including the need to ensure no one is left behind or disadvantaged through the process of change. Overall, the key message from those who participated in the consultation was that ending our contribution to climate change offers the opportunity for growth, innovation, improved wellbeing and a healthier, fairer society.

# 2. Introduction

## 2. Introduction

- 2.1** Scotland has set a target to move to a net-zero economy by 2045, one of the most ambitious statutory emission reduction targets in the world. The Scottish Government recognises that to realise this ambition, significant change is required, including far-reaching structural shifts in the economy.
- 2.2** The term ‘just transition’ represents an inclusive approach that takes a range of equality impacts into consideration while emissions are reduced. In 2018, the Scottish Government established the Just Transition Commission (‘the Commission’). Its remit is to provide Scottish Ministers with practical, realistic, and affordable recommendations that:
- Maximise the economic and social opportunities of a net-zero economy by 2045
  - Build on Scotland’s existing strengths and assets
  - Understand and mitigate risks that could arise to regional cohesion, equalities, poverty (including fuel poverty), and a sustainable and inclusive labour market
- 2.3** Following publication of its interim report in February 2020, the Commission ran a Call for Evidence, providing an opportunity for stakeholders across Scotland – individuals, representative bodies, public bodies and businesses – to contribute to this important work.
- 2.4** The six open consultation questions asked participants for their views on the economic and wider social opportunities and challenges associated with meeting Scotland’s climate change targets and on the actions the Scottish Government should take to manage these. It asked about what a successful transition to net-zero emissions would entail and about steps to address issues faced by groups or communities that may be adversely affected by a transition.
- 2.5** Consideration of these responses will form a key part of the Commission’s work to develop recommendations, which are due by March 2021.
- 2.6** Respondents’ responses to the consultation, where permission for publication was granted, can be found online<sup>4</sup>.

### Profile of respondents

- 2.7** The Call for Evidence received 274 responses<sup>5</sup>. Of these, 232 were submitted via the online consultation platform, Citizen Space. A further 42 were provided in an alternative format, for example, a PDF document.
- 2.8** A range of respondents took part. Just over half of responses (149) were submitted by individuals. Of these, 32 indicated they were responding in relation to a specific sector and 50 that they were not; the status of the remaining 67 is unclear.
- 2.9** Organisations submitted 125 responses. The most represented sectors were energy (26 responses), the built environment and housing (15), transport (15), environment and climate (13) and land use (13). A full breakdown is provided in Appendix 2.

<sup>4</sup> [https://consult.gov.scot/just-transition-commission/just-transition-commission-call-for-evidence/consultation/published\\_select\\_respondent](https://consult.gov.scot/just-transition-commission/just-transition-commission-call-for-evidence/consultation/published_select_respondent)

<sup>5</sup> Data cleaning identified 5 pairs of similar responses from the same individuals. Each pair was combined into one response per individual.

## 2. Introduction

### Report Structure

- 2.10** The Lines Between was commissioned to provide an independent and robust analysis of the responses to the Call for Evidence. This report is set out as follows:
- Chapter 3.1 covers question one, which considers the economic opportunities and challenges associated with meeting Scotland's climate change targets
  - Chapter 3.2 addresses question two and the wider social opportunities and challenges
  - Chapter 3.3 presents analysis of responses to question three, outlining what a successful transition would look like for respondents
  - Chapter 3.4 highlights actions for the Scottish Government raised in question four
  - Chapter 3.5 presents analysis of responses to question five, which outline how to address the concerns of groups who may be adversely affected by a transition
  - Chapter 3.6 summarises additional information, evidence or research for review by the Commission, as called for in question 6
  - Conclusions are set out in Chapter 4.0

### Approach to analysis and reporting

- 2.11** Given the scope of the Commission's remit, the questions posed by the Call for Evidence were deliberately broad to give all interested parties the opportunity to outline their views. Input from a variety of individuals and organisations from different sectors generated comments spanning a huge range of themes, with some responses not engaging with or linking their responses directly to the question being posed. There was also significant repetition of views within and across responses to the six questions.
- 2.12** This report presents the range of views expressed and is structured around each question. To improve readability and avoid duplication of themes and contextual information, themes have been placed under the most appropriate question.
- 2.13** To produce this thematic analysis, the analysis team applied a qualitative coding framework based on a review of the Call for Evidence questions and a sample of responses. A proportion of the alternative format responses contained information that did not align to specific questions. The analysts exercised judgement about the most relevant place to include this material for analysis purposes. A small number of organisations provided very detailed responses relating to their particular circumstances or area of expertise. There is not scope within this report to accurately summarise these responses; they have therefore been referenced throughout the report for the Commission to read separately.

## 2. Introduction

**2.14** In presenting the analysis we signify the weight of a particular view using the following framework. Where there are several themes, we have indicated which are the most common or prevalent across responses:

- 'The most common theme' or 'the most prevalent response'
- 'Many' respondents – a common theme, but not the most prevalent
- 'Several' respondents – a recurring theme
- 'Some' respondents – another theme, but less commonly mentioned
- 'A few' or 'a small number' of respondents – a minor theme cited by three or more respondents

### Analysis by sector

**2.15** Respondents representing or sharing the views of a sector tended to give more detailed, sector specific responses – for example, transport organisations answered questions by focusing primarily on transport related themes. As this was consistent across all questions, this association is not repeated throughout the report. However, where there was a very specific reference about, or from, a sector under a particular theme, this is clearly noted.

**2.16** Individual responses were most likely to cover multiple themes, reflecting the number of individuals responding and their varied interests. However, those from organisations also tended to give responses covering multiple themes, in addition to comments about their own sector. Energy, environment and climate, and community organisations, and local authorities, were most likely to give comments that covered multiple themes.

# 3.1 Economic opportunities and challenges

# 3.1 Economic opportunities and challenges

**3.1.1** The first question in the Call for Evidence asked respondents to consider a just transition from an economic perspective:

**What do you see as the main economic opportunities and challenges associated with meeting Scotland's climate change targets?**

**3.1.12** Almost all respondents answered question one, providing a wide range of responses that sometimes covered multiple themes. Many had an economic focus, but some also wove social opportunities and challenges into their responses. For clarity, this chapter focusses on the economic themes raised in responses to question one. Social issues, such as housing, health and social justice are addressed in the next chapter.

**3.1.3** The question asked respondents to reflect on both opportunities and challenges and many explicitly highlighted these in their responses. If this was not the case, analysts exercised judgement to determine the context. The analysis below outlines, where possible, the opportunities and challenges within each theme, but it should also be noted that a challenge described by one respondent was often perceived by another as an opportunity.

**3.1.4** Overall, just under three quarters of responses highlighted both opportunities and challenges. The remainder were split relatively equally between those highlighting only opportunities, only challenges, or general commentary on the theme of transition.

## Jobs and the economy

**3.1.5** Comments about jobs, specifically the opportunity to create new jobs and the associated positive impact on the economy, was a prevalent theme in responses. Several referred to a new workforce of green jobs and highlighted the potential for job creation across multiple sectors. These included: renewable energy generation and distribution; construction and heating; land and environmental management and conservation; tourism; jobs within the circular economy; and public transport. A small number said new industries and jobs would also support supply chains and the service sector, with wages being put back into the wider economy. A few stressed the value of these new green jobs in helping the economic recovery from COVID-19.

**3.1.6** The need for jobs to be fulfilling, secure and sustainable long-term was noted. A few described the opportunity to ensure that new roles provide workers with adequate incomes and one called for the use of the Real Living Wage. A small number of individuals and trade unions highlighted other opportunities, which included ensuring workers are involved in decision making around transitions, the chance to introduce better working conditions and a call to raise the minimum wage.

**3.1.7** Conversely, the biggest challenge mentioned in relation to employment was managing job losses in industries affected by the transition. Most common were mentions of the impact on the fossil fuel industry, particularly Scotland's oil and gas sector. It was widely suggested many in this workforce could move to new jobs in renewable energy, if sufficient training and re-skilling is available<sup>6</sup>. A few noted that manufacturing might be affected, but that this could be mitigated by new opportunities in, for example, electric vehicle production.

<sup>6</sup> Two organisations referred to a survey of the oil and gas workforce by Friends of the Earth Scotland and Platform. Interim results suggest that workers are not wedded to their jobs in the oil and gas industry, lack of job security, and are willing to change industries, but must be provided with a safe and viable route out of their current jobs.

## 3.1 Economic opportunities and challenges

- 3.1.8** The most commonly mentioned opportunity for the wider economy was the development of a green economy, specifically a Green New Deal as discussed in the Commission's interim report. This would create new green industries, green jobs and green infrastructure. A key benefit would be Scotland's capacity to export green energy. A few noted the importance of ensuring Scotland is able to manufacture renewable energy technology and to win international contracts, rather than outsourcing overseas.
- 3.1.9** Some made more general comments about economic opportunities. A few shared a view that the transition would create a broader, more resilient economic base for Scotland. They believe renewable energy provides a steadier and more sustainable source of income than oil and gas extraction. Stronger local economies were cited by a few, due to greater support for small and local businesses from government and from individuals. A few respondents advocated for a focus on local procurement by the public sector to ensure economic gains are reinvested locally. They suggested that the Preston Model – a community wealth building initiative operating in North Ayrshire – is rolled out nationally. Opportunities to support innovative business were also mentioned. One respondent (Industrial Biotechnology Innovation Centre) discussed the contribution Industrial Biotechnology could make to the Scottish economy.

There is potential to create a large number of new well-paid jobs in renewable energy that could more than replace the work currently offered by the oil and gas industry. Research has suggested that clean energy industries could offer three times as many jobs as fossil fuels. Investment in these jobs must form part of the coronavirus recovery package as recognised by the recent report by the Advisory Group on Economic Recovery.

The just transition provides an opportunity to reorient economic goals away from continuous growth and towards ensuring wellbeing and preventing environmental destruction, using alternative models such as 'doughnut economics'

*Individual*

### Renewable energy

- 3.1.10** Another theme prevalent in the responses was the economic opportunities and challenges posed by renewable energy in its various forms. In many instances respondents outlined broad economic opportunities and challenges – for example, job creation, investment and exportable expertise and technologies – and then put forward their thoughts on which technologies might enable those opportunities to be realised.
- 3.1.11** Most commonly mentioned was the opportunity to invest in, and develop, a strong and resilient renewable energy sector. Several noted that Scotland is rich in natural resources. Respondents cited the full range of renewables: onshore, offshore and floating wind, solar, hydro, wave, tidal and biomass. Developing these would require increased economic activity at all stages – in research and innovation, product design, manufacture and installation and operations and maintenance. Knowledge and expertise gained could be promoted internationally, allowing Scotland to capitalise on its leading position and to develop new export markets for the renewables industry. A few noted the challenge of developing the sector effectively enough to deliver the potential benefits, citing the slow pace of change; resistance to the move away from oil and gas impacting investment in the renewables sector; potential job losses during the transition; and issues around Contracts for Difference.

# 3.1 Economic opportunities and challenges

- 3.1.12** A few organisations in the energy sector provided detailed responses for the Commission to consider. The Orkney Renewable Energy Forum described economic opportunities and challenges for the renewables industry, highlighting job creation and retention; the potential of increased inward investment; and – in comparison to fossil fuels – economic savings and positive return on investment and better performance in relation to resilience and market volatility. One organisation shared a view on the potential for greater use of solar energy; another provided detailed information around Anaerobic Digestion. One environmental organisation called strongly for an end to biomass burning.
- 3.1.13** Another example of renewable technology contributing to potential economic opportunities, mentioned by some, was the development of hydrogen. A few respondents specifically noted the importance of focusing on green hydrogen i.e., hydrogen made from electricity from renewable technologies. Suggestions included the use of hydrogen for energy and by industry to aid decarbonisation and hydrogen fuel for cars, trains or ferries. A few noted hydrogen's value to the Highlands due to electricity grid constraints. In addition to hydrogen, a small number cited low-carbon heating systems and battery storage as technologies with a role in progressing decarbonisation.
- 3.1.14** Carbon Capture and Storage was mentioned by a small number of respondents as a new technology that could be harnessed, but conflicting views were shared. A few highlighted economic opportunities it could bring, such as the creation of highly skilled jobs; for Scotland to be a world leader in this space; and export of the technology and skills required to the benefit of the economy. There was also one mention of potential economic benefit for local communities through community ownership of land being used for Carbon Capture. The few who specifically cautioned against Carbon Capture and Storage made two arguments. First, some did not see it as a sustainable approach as a large amount of land is needed and the required forests and ecosystems need to be developed. Slightly more common were those who strongly argued that it is an unproven technology, has no scientific evidence to support it and would not deliver any societal benefits or help to meet emissions targets. Given the investment that would be needed to realise Carbon Capture, they saw it as a waste of money and argued that a greater emphasis on increasing clean energy generation and use was a better alternative.
- 3.1.15** The challenge most frequently mentioned about the greater use of renewables was the corresponding need to move away from oil and gas. This was viewed as both an opportunity and challenge. Most called for the sector to be wound down as quickly as possible but recognised the need for this to be done in a planned and structured way. The range of perspectives on how this could be achieved is presented in more detail in relevant sections later in this report.

## Transport

- 3.1.16** Transport was the third most common theme in responses to question one. A range of views were shared and most comments focussed on reducing car use and moving people to cleaner, greener forms of transport. This was described as both a significant challenge and a huge opportunity, given the consequences for health, jobs and the environment. Many made general comments about how travel behaviours and infrastructure should change, without linking this directly to economics. The analysis below therefore focuses primarily on comments where economic opportunities and challenges were identified.

## 3.1 Economic opportunities and challenges

**3.1.17** Respondents outlined multiple alternatives to car use – public transport such as bus and rail, active travel (walking, wheeling and cycling) and new electric vehicles. Comments noted that significant investment is required across all of these alternatives, for example to fund more and better integrated bus and rail routes serviced by new, clean and efficient vehicles; to create and maintain the infrastructure of paths and cycle lanes to make active travel a safe and attractive option and to enable people to access stations and bus stops; and to develop efficient electric or hydrogen vehicles and a network of charging points. Some also noted that these alternative modes of travel must be affordable to encourage people to change their travel behaviours. A few also called for more integrated ticketing. A few went further, calling for incentives to drive the uptake of electric vehicles.

Transport and energy infrastructure will require substantial restructuring to meet Scotland's climate change targets, which will increase employment. It may also establish a more circular economy through the potential to utilise greater repurposing of materials. As businesses adopt electric transport, and clean energy sources, their more efficient operation and reduction in costs may make for greater profitability.

Continuing restrictions of car use, and incentivising public transport in urban areas, could lead to a greater uptake in public transport. For island and rural communities who are disconnected from the mainland, battery operated, or hydrogen planes may boost their economies, promoting more affordable and accessible transport links. To develop these areas, there is a need for enablers and infrastructure to support electric and hydrogen car technologies.

*Frazer-Nash Consultancy Ltd*

**3.1.18** The importance of upgraded transport links to rural economies was referenced by some. Specific challenges included difficulties faced by older people in those areas and local grids accommodating electric vehicle charging infrastructure. A response from the Community Transport Association highlighted that a lack of affordable transport is a factor in depopulation of rural communities and that shared transport and lift-sharing options can help maintain jobs in these areas and contribute towards the creation of sustainable rural communities.

**3.1.19** A few respondents reflected on how COVID-19 has presented opportunities and challenges for transport. More people have been walking and cycling and could potentially be encouraged to continue. However, the dramatically reduced use of public transport could lead to some services being permanently removed and has already reduced revenues and the potential to fund improvements. One commented that an increase in road building should not be part of any economic recovery plan.

**3.1.20** Other comments around transport mentioned by small numbers included the need to move more freight to rail; greater use of ferries and rail for international travel; greener shipping (both commercial and leisure e.g., cruise liners); taxing aviation to pay for environmental costs; and a call for a detailed plan for the decarbonisation of transport. One organisation made a specific point about the need to decarbonise Heavy Goods Vehicles, given their disproportionate level of emissions. A small number of organisations in the transport sector, including Strathclyde Partnership for Transport, provided detailed responses for the Commission to read.

# 3.1 Economic opportunities and challenges

## Training and skills development

- 3.1.21** Another theme discussed by many respondents was the importance of training and skills development in facilitating a just transition to net-zero. Concerns were frequently expressed about workers transitioning between sectors, in particular those in oil and gas or the wider fossil fuel sector. Some argued these workers should be well placed to fill new green jobs in renewable energy, but respondents also noted the need for support and investment in growth sectors to ensure new jobs are created and the role of education, training, re-skilling and up-skilling to ease this move.
- 3.1.22** More broadly, some noted the challenge of ensuring a pipeline of skilled workers to fill the roles needed to achieve a successful transition. The breadth of potential new jobs means training is needed in several sectors, for example in renewables, energy infrastructure, heating installation and transport. A few noted that many of these roles may require specialist expertise, for example engineering, data science or robotics. In addition to training, a few called for more apprenticeships, accreditation and future-proofing of new jobs and qualifications.

## Land use, agriculture and food

- 3.1.23** A variety of comments related to land use and agriculture were provided by many respondents. In relation to economic opportunities, several referenced the potential growth of industries such as forestry. They also noted the creation of new jobs in sustainable agriculture, land and wildlife management and tourism, resulting from improved landscapes and biodiversity.
- 3.1.24** A detailed submission by NFU Scotland outlined the economic opportunities and challenges facing agriculture in transition. This included scope to introduce changes that improve competitiveness, make practices more efficient, and benefit businesses. Challenges were summarised as the difficulty of ensuring a profitable and productive sector while reducing emissions. This response also emphasised the importance of tackling climate change and highlighted the wider role of farming in rural communities and agriculture's significant contribution to Scotland's economy.
- 3.1.25** Respondents highlighted the opportunity for more responsible land use and management to generate sustainable development. Suggestions included rewilding, forestry, peatland restoration and conservation, and the protection of other natural environments as ways to improve biodiversity. Some noted that these steps would reduce emissions, sequester carbon and mitigate other effects of climate change, for example by reducing flooding.
- 3.1.26** Respondents raised a number of other issues in response to this question which were less directly linked to economics. Changes to agricultural practices to reduce emissions and improve sustainability were suggested by several. These included new farming methods such as vertical farming; shifting from large agricultural enterprises to smaller holdings; more investment in agro-ecology and permaculture; and agroforestry. A small number described the difficulties of making these changes, for example perceived resistance to environmentalism by farmers and crofters and a preference for traditional ways of working. One respondent cautioned against idealism and stressed the importance of understanding the realities of life in rural Scotland.
- 3.1.27** In relation to agricultural produce, respondents highlighted two key themes: the benefits of local food production and a need to transition to a plant-based diet. They suggested that increased local food production increases the resilience of the food supply chain, reduces emissions from transport, and supports the farming economy, arguing that a plant-based diet would see a reduced need for high emitting livestock farming.

# 3.1 Economic opportunities and challenges

**3.128** One land use organisation and a marine environment organisation provided detailed responses for the Commission to read, about the forestry and fishing industries respectively.

Forestry & peatland preservation/restoration will be critical in meeting 2045 ambition, and if scaled up as required, will create significant opportunities for new jobs and/or to transfer economic opportunities over from traditional Highland crofting/agriculture.

Agriculture is also a challenge – attitudes to environmentalism amongst crofters and farmers are not universally positive, and there is therefore a need to try to support and encourage behaviour change through positive agri-environment schemes. There is an understanding across the agriculture sector that the success or otherwise of any agri-environment schemes will be a function of what financial resource is on offer – historically, agriculture will do whatever it takes to bring in the most money, and future policy must be cognisant of this.

*The Highland Council*

## Housing

**3.129** Many described the challenges and opportunities inherent in improving Scotland’s housing stock. From an economic perspective, three themes emerged. Firstly, that such a large undertaking is likely to generate a large number of jobs in construction, manufacturing, installation and maintenance. Secondly, the reduction in heating and electricity costs would have a positive economic impact for individuals. Thirdly, respondents highlighted the challenge of funding these improvements, particularly given those in the poorest quality housing tend to be least able to afford to take action.

**3.130** One organisation – the Existing Homes Alliance Scotland – provided a detailed response for the Commission to read. This outlined economic arguments for upgrading housing stock, and challenges such as developing a sustainable supply chain and a robust quality assurance scheme. They highlighted the importance of the Energy Efficient Scotland programme, which was supported by other organisations representing different sectors.

## Existing business interests and subsidies

**3.131** A desire among some businesses and sectors to maintain the status quo and to slow or prevent change was noted as a challenge by many and seen to be proving a barrier to economic (and social) benefits being realised. Individuals and organisations who currently profit or benefit were perceived as reluctant to change, given their likely losses. Respondents highlighted the potential for those with vested interests to lobby government as a further challenge.

**3.132** Several of these comments were directed at the fossil fuel industry and specifically oil and gas. A few noted the involvement of the sector in local authority and government planning and advisory groups and called for this to end. Fishing, agriculture and large landowners were also referenced in relation to their use of natural resources. Singular comments about existing interests described the limitations of existing global trade deals and delays to Low Emission Zones.

**3.133** Related to this, some respondents called for subsidies currently given to these organisations to be reduced or stopped, redirected into industries and organisations who support decarbonisation, or given to existing recipients but redirected to developing new or renewable technologies.

# 3.1 Economic opportunities and challenges

## A different economic model

**3.134** Many respondents argued for a fundamental change to Scotland's economy and to how economic success is measured, explaining how the transition to net-zero creates the opportunity to do so. This included a call for an end to focusing on continued economic growth and consumerism, with GDP as the main indicator of progress. Instead, respondents championed an economy which puts people first and is measured on the basis of wellbeing, with indicators around UN Sustainable Development Goals. Another minor theme was the need to appreciate work that is currently not seen as economically valuable, for example key workers and carers, and pay these workers according to how their work benefits society. Some respondents shared their view that COVID-19 offers the opportunity to consider such a restructuring.

Another challenge is to address our current addiction and dependence on consumption and growth. As the head of SEPA said on taking up his post, we have to move from 3 planets to 1 because there is only 1. GDP growth is no longer a desirable goal because it is unsustainable. It should be replaced by a regenerative economic model which recognises many other measures of outcome which are of great public benefit such as clean air and water, health and wellbeing, a thriving natural environment and a more even distribution of income for all.

*Individual*

## Technology and innovation

**3.135** Several respondents outlined how new technologies could be developed and used to enable a transition that delivers economic benefits. Examples included low carbon and battery storage technology, district heating schemes, hydrogen fuel, satellite launch and technology to make negative-carbon hydrocarbons. A few specifically noted that these need to be green/sustainable technologies. There was also discussion of economic and social benefits arising from research and innovation undertaken by Scotland's education sector and small businesses. This was in the context of maximising and building on the existing knowledge base, ensuring the fastest possible development of new and emerging technologies across the whole economy, and establishing Scotland as a leader in the field.

**3.136** Another theme mentioned by some was greater digital connectivity i.e., broadband and mobile access, particularly in remote and rural areas. This was seen as a challenge, but necessary to unlock a multitude of economic and social benefits. One respondent raised a very specific point about consumer protection in relation to data collected by new technology e.g., smart meters.

## The cost and pace of transition

**3.137** The cost of the transition was generally described as an economic challenge – for individuals, businesses and society as a whole. Several respondents highlighted that significant investment is needed to facilitate change at the scale and pace required. Some noted a need for up-front investment in new and renewable technologies and supporting infrastructure. A few highlighted the additional challenge of COVID-19 potentially reducing public funds and limiting the appetite for the private sector to invest. In relation to the cost of addressing specific social challenges, singular comments included that the promotion of healthier lifestyles has not been reflected in spending; the need for investment in Public Health Scotland; and financial constraints in the public sector. One respondent noted the importance of balancing the cost of taking action with potential savings, for example it costs less to heat a warm insulated home.

# 3.1 Economic opportunities and challenges

**3.1.38** Some respondents called for consideration of the economic impacts for individuals, for example in considering who pays for housing improvements. A few also noted the transition may cause prices to rise, for example for food and transport, affecting individuals and businesses.

**3.1.39** A number of respondents took the opportunity to share their views on the timescales for a just transition. Most frequent were suggestions that currently the pace of change is slow, and that Scotland needs to move more quickly. A few indicated that the 2045 target is not ambitious enough. Some specifically noted that while the pace of change remains slow, the economic benefits are unlikely to be fully realised e.g., taking advantage of economic opportunities arising from Scotland being at the forefront of decarbonisation. A small number specifically cited the Scottish Government's lack of commitment or the public's lack of understanding of the urgency of the situation. One respondent noted that a successful transition would take place in stages, evolving as people gain more confidence.

**3.1.40** Beyond this, a small number described the long lead-times required to make the necessary changes and the difficulty of doing so by 2045. Conversely, a few cited the speed and scale of response to COVID-19 as evidence of the ability to change. One made the specific point that the delay to the COP26 climate conference until late 2021 risks prolonging a period of inaction on climate policy.

The scale of the change necessary will require radical changes to business and consumer behaviours. History has shown that the first mover advantage in new and disruptive business and community operational models, can create significant benefit. Sadly, the UK has often been the creator of such disruptive ideas, but equally often has been slow to benefit. Any approach therefore should recognise that not only do new things need to be done, but that to maximise the benefits there should be overt consideration of how the plans to achieve these should be created and delivered.

*Caithness and North Sutherland Regeneration Partnership*

## Circular economies

**3.1.41** Several noted the opportunity to create a circular economy in Scotland, though a few reflected on the challenge of moving away from a 'throw-away' culture and cheap goods. Respondents described how greater recycling and a zero-waste approach could lead to more self-sufficiency and a reduced need for transporting and importing goods, as well as creating jobs.

**3.1.42** A detailed response from the waste management sector outlining steps being taken was provided for the Commission to read. CIWM Scotland cited effective waste management as a health issue and described opportunities and challenges in achieving this.

## Tourism

**3.1.43** Comments on tourism were provided by a small number of respondents, who described the challenge of over-reliance on tourism and the impact of mass tourism. A few called for more holidaying in the UK. However, most comments reflected on the opportunities afforded by a just transition. Respondents felt a greater focus and appreciation of Scotland's landscapes and wildlife would boost tourism and help the hospitality industry. A few talked of eco and adventure tourism. There were, however, calls for future tourism to be managed sustainably, with one arguing that the environmental costs of tourism should be built into the prices paid by travellers.

# 3.1 Economic opportunities and challenges

## Scotland as a leader

**3.144** Some noted the opportunity for Scotland to be seen as a global leader. Becoming a net-zero country in a fair way would improve Scotland's credibility and provide an example for other countries to emulate. The ability to export knowledge and expertise was also referenced in relation to energy, satellite launch, and equipment manufacturing. One noted the opportunity to work with countries with similar goals, citing Slovenia as an example.

It represents an opportunity for Scotland to show global leadership in respects of transition to a sustainable way of life. I believe that the rest of the world has a right to expect this from us. Our natural and human resources mean that we are in a much better position to negotiate the difficulties that will arise in the next few decades, compared to other parts of the world. We should be able to develop technological and social solutions, and participate in international initiatives, in ways that should reinforce our economic security.

*Individual*

## General comments and additional themes

**3.145** In addition to the themes detailed above, some respondents made additional comments that did not specifically link to economic opportunities and challenges. These are briefly summarised below.

### General comments

**3.146** Some respondents used their response to this first question to introduce themselves or their organisation, or to provide general comments or background information on the transition and the need for change. A small number made general comments suggesting that there were many opportunities and challenges, without providing any detail.

### Importance of change

**3.147** Several respondents stressed the need for significant change to achieve Scotland's net-zero ambitions and a just transition. These comments described the overarching impact of climate change on the planet and our society, and how action is required for both to survive. They highlighted the importance of increased understanding and appreciation of our planet and its ecosystems. Others argued for reducing carbon emissions in a way which allows current and future generations to live better, healthier, more sustainable lives.

### COVID-19

**3.148** A few referred to COVID-19, describing how the pandemic has highlighted a lack of resilience and the need for meaningful change. However, experiences during the pandemic have also demonstrated that it is possible to change.

### Infrastructure and planning

**3.149** A small number commented on infrastructure and planning. These comments included the challenge of regulatory and planning networks, the need for better energy distribution networks, a call for better management or modernisation of existing infrastructure, greater use of brownfield sites and better urban planning.

# 3.1 Economic opportunities and challenges

## The political climate

**3.150** While not a direct link to economic opportunities and challenges, several respondents expressed views in relation to the political, policy and legislative issues around the transition. They mostly highlighted challenges, including:

- A perceived lack of political leadership, vision, courage or ambition, and a reluctance to consider long-term commitments. A few specifically noted the Scottish and UK Government's tacit support of oil and gas through the policy of 'Maximise Economic Recovery' which appeared in conflict with the desire for a net-zero economy
- The control of certain policy areas and resources by Westminster
- Ensuring there is a co-ordinated approach across government, that all policy areas are linked in a coherent way and that a cross-departmental approach is taken
- Brexit, a reduction of EU funding, and challenges around new trading arrangements
- The impact of austerity and limited resources at all levels of government

**3.151** A few argued that to achieve the transition, actions should be embodied in legislation. For example, legislating that all new homes should have solar panels.

**3.152** Other bodies who could be more involved in managing the transition were mentioned by a small number, for example: the Scottish National Investment Bank; Scottish Enterprise; Highland and Islands Enterprise; Skills Development Scotland and the Scottish Funding Council. One respondent argued for local authorities to strengthen their role in leading change in communities.

# 3.2 Social opportunities and challenges

## 3.2. Social opportunities and challenges

**3.2.1** The focus of the second question in the call to evidence was on the wider social impact of the transition to net-zero:

**What do you think are the wider social (health, community etc.) opportunities and challenges associated with meeting Scotland's climate change targets?**

**3.2.2** As with question one, many respondents described both economic and social challenges. Given the detailed analysis in the previous chapter of economic arguments, this chapter focuses on the wider social themes evident in responses to question two. Themes are presented based on the weight of opinion expressed at question two, from most to least frequently mentioned. Where relevant, responses from question one which relate to social opportunities and challenges have been included in this chapter.

**3.2.3** A majority continued to indicate both opportunities and challenges within their responses and where possible themes are identified as such below.

### Physical health, transport and pollution

**3.2.4** There was a significant overlap between the three most prevalent themes in response to question two – physical health, transport and pollution. For example, those who mentioned improved air quality cited increased public transport use and active travel as key contributing factors. In turn, walking and cycling help tackle obesity, and better air quality helps to reduce respiratory problems. These arguments represented a significant proportion of responses across the three themes. The following summarises additional responses specific to each of the themes.

**3.2.5** In regard to health, virtually all respondents viewed the transition as an opportunity to improve health outcomes. In addition to the impact of improved air quality and active travel, respondents described:

- Improvements to the quality, insulation and heating of housing stock impacting on a range of physical conditions and reducing winter deaths<sup>7</sup>
- Dietary changes, such as eating locally grown organic fruit and vegetables and eating less red meat, could improve the health outcomes of people in Scotland

**3.2.6** A few noted the potential health benefits from greater access to and use of green space, with a small number specifically suggesting prescribing outdoor use. A minor theme was improvements in health leading to reduced health spending.

**3.2.7** When it came to transport, many respondents reiterated the changes they would like to see to transport infrastructure and travel behaviours, while others focussed on the impact on air quality and health. Furthermore, some respondents discussed the importance of public transport in allowing people to access services and contribute to society. They made suggestions such as ensuring public services are accessible by a 15-to-20-minute journey on public transport. A few called for car-free town/city centres to encourage people to walk and cycle around them, keeping high streets functioning. One transport organisation provided a detailed response championing the role of community rail in progressing to net-zero. An individual response for the Commission to read called for free public transport in Glasgow, given the potential for this to lift people out

<sup>7</sup> Energy Action Scotland provided a detailed response around the link between poor housing, health conditions and winter deaths for the Commission to read.

## 3.2. Social opportunities and challenges

of poverty and reduce isolation. A small number highlighted the challenge of connectivity in rural areas, with greater distances, dispersed populations and declining public transport availability. Suggestions to remedy this included more public and community transport.

- 3.2.8** Another minor theme was safety. Some described safer roads and fewer road deaths due to declining car use. This was seen to encourage active travel, with a few specifically referencing more children being able to cycle to school.
- 3.2.9** Finally, comments relating to reduced pollution were brief and described better air quality due to a reduction in traffic and fossil fuel use. A small number of comments referenced improved water and soil quality and less litter.

If we can encourage more people to walk, cycle or use public transport, this will have positive health benefits. A reorganisation of city centres, with increased pedestrianisation would help in this, but only if public transport is heavily invested in and fares are subsidised, so that people do not feel the need to use a car. I have seen many examples of good use of this principle in continental Europe, and Canada.

*Individual*

### Community cohesion, ownership and decision making

- 3.2.10** Responses highlighted the importance of communities in achieving a just and successful transition, and that the transition was an opportunity to reinvigorate the role of communities. Themes within this were the value of communities providing services and shared spaces; the potential benefits of community ownership of land and energy generation infrastructure; and the opportunity for greater community cohesion.
- 3.2.11** Many respondents highlighted the need for local shops and markets to service local food chains. They described the value of shared spaces, community hubs, work hubs, and green spaces, as well as a means of co-operation for shared amenities, such as community libraries and car clubs. A few also talked about people having more time to volunteer in their communities as a result of the move to a net-zero economy.
- 3.2.12** Several responses described the role of political and decision making structures and the policies which derive from these. A common theme was the opportunity to create more democratic decision making, particularly at a community level, which would allow communities to have a greater say in decisions affecting their area. It was generally felt that communities would be better placed to make strategic decisions and to take action than politicians or private companies. Community-led action groups were also seen to be able to adapt more rapidly and flexibly to the needs of their community. A response from Caithness and North Sutherland Regeneration Partnership highlighted that Scotland already has strong mechanisms for community engagement through the Community Planning Partnership (CPPs) approach, but a lack of resources, influence, and alignment with national bodies limits the impact of these groups. It was also suggested that local authority procurement could be reviewed to better enable community groups to deliver services, generating greater cohesion, empowerment and ownership.

## 3.2. Social opportunities and challenges

**3.2.13** Community ownership was mentioned by several respondents, particularly in relation to land and energy. Some respondents felt renewable energy projects in particular lent themselves to community ownership, for example wind or solar power. Community involvement and ownership was seen as beneficial since any funds raised by local projects could be reinvested in the area to boost social cohesion. There were calls for expert help, funding, and incentives to help create community groups to support communities with solutions to the transition and with enabling ownership.

**3.2.14** All of the above was seen as important in fostering a sense of community and empowerment, and in building more cohesive, resilient communities which are better able to manage and support the transition to net-zero.

Communities should be at the heart of the green recovery. We need to create a sense of urgency, create the political space and develop a clear framework for action. Communities across Scotland should be engaged in this national conversation, indeed many of us already are. Tap into it, include us, use our knowledge and expertise. We are the citizens of Scotland and we are here to help. Opportunities for local decision making and empowerment, for local growing and food economies, opportunities for social cooperatives and community land ownership models which support greater equity in terms of wealth, health, education and economies. These should be supported financially and through knowledge, advice and mentoring from a national network.

*Climate Action Strathern*

### Social justice and inequality

**3.2.15** The effect of the transition on social justice and inequality was the focus of many responses. Most commonly, respondents reflected on the challenge of ensuring the transition benefits everyone – both socially and economically – and does not adversely affect any individuals or vulnerable groups. In particular, respondents noted the challenges faced by those already on low incomes. They argued this group should experience the social and economic benefit but should not be disproportionately burdened with the cost of the transition. A few contrasted this to more affluent groups who can afford to, for example, work from home and upgrade homes and cars to be more energy efficient, while maintaining their existing standard of living.

**3.2.16** Another common theme was the opportunity for the transition to reduce inequality and create a more just and fair society. Some made general comments to this effect. Others called for specific changes that were perceived as necessary to generate positive social outcomes. These included, for example, reducing social exclusion, support for marginalised or vulnerable groups, and improved transport and connectivity enabling access to education, jobs and services. A small number noted that a failure to deliver potential benefits could undermine support for further action.

**3.2.17** A minor theme was the need to give sufficient consideration to rural areas to ensure they benefit. The difficulty of implementing some of the changes required from the transition in these areas – such as improving public transport and home energy supplies – means additional funding or alternative approaches may be required.

## 3.2. Social opportunities and challenges

### Public attitudes and behaviours

- 3.2.18** Many respondents shared their views on the need to change public attitudes and behaviours. This was generally perceived as a challenge. The public were often described as disengaged, disempowered and apathetic; to have not yet grasped the extent of the climate emergency or the scale of changes required to alleviate it. However, a few respondents pointed out that public concern over climate change is building and has never been higher. As the Commission highlighted in their interim report, this is an important foundation for action to build upon.
- 3.2.19** A primary concern was to change attitudes to consumption. Respondents discussed the difficulty of encouraging the public to change their habits and behaviours. There were several comments championing more sustainable approaches to day-to-day life. A few called for a change in mindset, to reduce consumption and move away from the 'Amazon culture' of instant need. Others hoped for people to become more resourceful and less wasteful, learning to reuse and recycle goods and clothes. While legislation was described as having a role to play in this, there were calls for greater support for behaviour change initiatives, and for stronger incentives to make good choices. A few pointed out that a prerequisite for the public's support is clear direction on what changes are needed and how to make them, such as being fully informed about programmes to improve housing and the rationale behind them.
- 3.2.20** To address these challenges, respondents championed a significant increase in clear, sustained communications. Public awareness campaigns were considered essential to educate the public about the consequences of climate change and the steps needed to mitigate it. They suggested communication should be honest, realistic and positive, and grounded in relatable features of daily life, rather than intangible statistics like levels of CO<sub>2</sub> emissions. A few argued that linking change with health benefits is effective. A small number suggested mechanisms to ensure the public's concerns are listened to.
- 3.2.21** Respondents highlighted the importance of making sure everyone feels part of the change and of establishing how it would benefit everyone. This would create a sense of community and national solidarity. A few noted that it is important for the public to see government and organisations taking the initiative, as individuals do not want to feel the burden and costs of change rest solely on them.

Without buy-in across society, transitional efforts will be ineffective and may be largely ignored by the general population... It can be argued that the wider population has not yet grasped the extent that changes will be needed to the way they live in the future. This cultural shift will need strong national, regional and local leadership, tackling the issues in a structured way to get the wider population assisting rather than resisting. Identification of equitable approaches and clear communications are vital.

*Caithness and North Sutherland Regeneration Partnership*

## 3.2. Social opportunities and challenges

### Housing and fuel poverty

- 3.2.22** The potential to make significant improvements in the quality of housing stock, including improved heating and insulation, was described by many respondents. Several strands of discussion were evident within this theme which highlighted how these changes would have a positive impact on the quality of life of many individuals in Scotland.
- 3.2.23** A central focus of comments was the need for more and better-quality housing stock. In addition, many highlighted the opportunity to renovate and retrofit existing housing with better, more efficient heating systems and improved insulation. Respondents described how these steps would provide better living conditions which would in turn improve the physical and mental health of people no longer living in cold, damp homes.
- 3.2.24** It was also widely hoped that these steps would lead to a significant reduction in fuel poverty, which is a particular challenge among older and rural households. While fuel poverty is an economic challenge, respondents often linked tackling this to the improved quality of life people would experience from lower energy spend and from having more disposable income.
- 3.2.25** Respondents made a number of points in relation to how these changes should be implemented. In relation to building new housing, there were calls for buildings to be designed to minimise energy use, and to be built with high quality materials. A few called for changes in land ownership to release land for more housing, or for use of brownfield sites to aid regeneration. There were calls to ensure both new and existing buildings meet stricter energy efficiency standards. A few noted the challenges of implementing changes in a proportion of Scottish housing stock due to age or poor build quality or to location in rural areas or in shared residential buildings, or in the rental sector.
- 3.2.26** Some suggested alternative approaches to heating systems and energy generation, such as district heating, heat pumps, smart energy management systems and incorporating solar panels or wind generators into buildings. A small number called for better education on how to heat, ventilate and maintain buildings. One organisation made a specific call for greater use of Thermal Mass to balance temperature fluctuations. A very small number of organisations noted the need to establish local solutions to heat decarbonisation, particularly in rural or 'off-grid' areas. One detailed response for the Commission to read outlined the potential role of Liquid Petroleum Gas (LPG) in such areas as part of a mixed technology approach to decarbonisation.
- 3.2.27** It was noted that adaptations and any new heating systems should be affordable to tenants or paid for by local or national government initiatives. A few respondents also pointed out the need to be mindful of potentially increased energy prices as renewables or electric heating could be more expensive than natural gas. If not carefully managed, the transition could risk harming social inclusion by pushing more people into fuel poverty.

### Improved mental health and wellbeing

- 3.2.28** The opportunity for the transition to improve mental health was referenced by several respondents. A few commented that people in Scotland would be happier, without providing further detail. However, the majority gave at least one reason, with the most common factors including greater use of the outdoors, green space and exposure to nature; being more active, with more walking and cycling; better quality and warmer homes; and being able to access services and social activities.

## 3.2. Social opportunities and challenges

**3.2.29** Linked to this, the creation, expansion and protection of green outdoor space was called for by several respondents, as well as improved access to encourage greater use. Respondents referred to both green urban spaces, such as parks and gardens, and to more rural, natural environments. A few called for integrating green spaces into planning procedures and new homes and others suggested greening of routes between and within communities to encourage active travel. One noted the challenge of upkeep, particularly in urban areas.

**3.2.30** Two respondents made a specific point about younger people experiencing anxiety around climate change. They argued that listening to the concerns and taking climate change seriously would prevent future mental illness. Another shared their view that citizens of a nation working to meet its climate obligations would feel a sense of civic pride.

### Food security

**3.2.31** Food was mentioned by several respondents, with a number of themes evident. Most common was the opportunity for food to be grown and purchased locally. This would help individuals develop a better understanding of food and diet and reduce the need to import or transport food over long distances. More local shops and markets was also seen as helping to support sustainable communities. This local supply was viewed as important to ensuring a reliable supply of food and reducing food poverty and insecurity.

**3.2.32** One organisation – NFU Scotland – made a specific call for targets for locally produced food to be introduced into the public bodies' procurement to increase local buying. Two similar responses gave an example of an initiative where people have been given £5 to spend on Scottish produce when doing their food shopping.

**3.2.33** A few respondents advocated changes in diet to improve health and reduce emissions. Reducing red meat and dairy consumption, eating organic plant-based foods, eating seasonal produce and fewer fast-food outlets were part of this. The Vegan Society noted that Scotland needs to eat more fruit and vegetables, but highlighted the demand for more local growing, given the UK as a whole grows half the vegetables and one sixth of the fruit being consumed.

### Changed working practices

**3.2.34** Some respondents shared their views on how the transition could be an opportunity to change working practices. Most mentioned greater numbers of people working from home, which was often seen as a positive development, allowing for a better work life balance with more time for family, for engaging with the community or for volunteering. However, a few noted drawbacks such as isolation and challenges faced by those who cannot work from home.

### Concerns around impact of change

**3.2.35** The potential negative consequences of change were raised as a challenge by some respondents. Most common was a fear of social problems created or exacerbated by a badly managed transition. A few referred to past experiences such as the decline of coal mining and heavy industry in Scotland and the resulting unemployment, poverty and social decline. Other concerns included stemming population loss from declining areas and managing stress caused by economic uncertainty at an individual and industry level (e.g., job losses in oil and gas sector).

## 3.2. Social opportunities and challenges

### Changes to education

**3.2.36** Some respondents shared their views on changes to education and the opportunity this presents to equip Scotland's young people to flourish in a net-zero economy. Most common were calls to include new skills in energy, sustainability, ecosystems, and food education in all levels of the education system, so children can learn them from an early age. Other changes mentioned by very small numbers included encouraging children to envision their own future, more nature-based/ outdoor education, and the importance of education in fostering an entrepreneurial spirit, setting up innovation hubs and providing practical training programmes for re-skilling.

### General comments and overarching themes

**3.2.37** A few respondents provided additional background or contextual information, or provided short statements asserting that the opportunities and challenges posed by the transition were many and varied.

**3.2.38** Some used question two as an opportunity to stress the importance of the transition, or reiterated comments about the overwhelming severity and global impact of climate change. A few noted the scale and impact on society of the challenge. They described the need for wholesale change to ensure people – especially disadvantaged groups – feel part of a community or society, where they can thrive in clean, healthy cities and environments, and can secure wider social benefits.

**3.2.39** Several respondents referenced COVID-19 in their responses. Two main themes were evident within this. Firstly, that the pandemic and lockdown have shown what society could look like if there is a greater focus on wellbeing and sustainability. Respondents argued the public have seen the benefits of reduced travel, changed working practices, a sense of community, greater use of the outdoors and a focus on physical and mental health. It has also shown change is possible when the public is educated and engaged, and when the government offers clear direction and support. However, it has demonstrated a lack of resilience to change and the potential to worsen existing inequalities, for example further marginalisation of vulnerable groups and increased food insecurity.

**3.2.40** The other theme in relation to COVID-19 is the opportunity it presents to drive change. Some commented that the pandemic has accelerated changes which would feature in a just transition, such as reduced traffic and more active travel, greater use of green spaces and more working from home. There is a desire for these changes to be sustained, but this might be a challenge in the face of the economic consequences of the pandemic. For that reason, a few argued that the transition needs to work alongside the COVID-19 recovery and highlighted the aims of campaigns such as Build Back Better<sup>8</sup> and Just and Green Recovery for Scotland<sup>9</sup>.

**3.2.41** A small number of respondents made specific points which fell outside the themes above. Opportunities included: a request for best practice to be recorded and shared so all people and communities can benefit; an opportunity to generate fewer extreme weather events; community involvement in reducing crime; the role of the historic environment within communities; and calls for good public services and support for the NHS. Challenges included an ageing population; the need to tackle racism and the influence of social media; the hostile view of tabloid media towards measures designed to tackle climate change; the importance of attracting younger people to Scotland and encouraging students to stay after completing their studies; and capturing data to evidence that tackling climate change also has wider social benefits.

<sup>8</sup> [www.buildbackbetteruk.org](http://www.buildbackbetteruk.org)

<sup>9</sup> <https://foe.scot/campaign/just-green-recovery-for-scotland/>

# 3.3 A successful just transition

## 3.3 A successful just transition

**3.3.1** Question three asked respondents about their vision for a successful transition:

**What would a successful transition to net-zero emissions look like for your sector/ community?**

**3.3.2** Virtually all respondents answered question three. Many reiterated opportunities and challenges already discussed. To avoid repetition, this chapter focuses on respondent's aspirations for a successful transition.

**3.3.3** Respondents painted a picture of a prosperous, healthier and sustainable Scotland where environmental considerations are central to decision making. Success has resulted in higher employment in sustainable and valued jobs. Poverty has been reduced or eliminated, with ambitious changes in housing alleviating fuel poverty. Decarbonisation and renewable energy use have reduced pollution, as has more public transport and active travel. Within their vision a small number described Scotland's leadership role in renewables and sustainable approaches, and in protecting landscapes and biodiversity.

I think [my community] would have more regular public transport to nearby villages so that fewer people require cars and clean electric bus services powered by renewables would enable people to get to larger centres. The economy would be circular, with everything re-used and repaired, creating local jobs and shifting behaviours away from consumption to outdoor activities, slow food and growing/selling more locally. Appropriate areas would be rewilded and homes/businesses would have insulation and renewable energy fitted to maximise comfort and efficiency. Agriculture and other high emissions industries would be supported to adopt new practices to reduce emissions and people would buy local to reduce food miles.

*Individual*

People's quality of life would improve. There will be stronger community resilience based on that demonstrated during the pandemic. We will be eating more local food and using more locally produced products, though not exclusively. People will travel less and interact with their neighbours more. Much work will be done from home rather than offices in the city. There will be more efficient public transport, even in rural areas and more active travel. My sector is forestry – Scotland's forests will increase greatly in area with a more diverse range of forest types than at present. They will range from commercial softwood plantations, through mixed multi-objective stands to rewilded large scale native forest, as a mosaic with other habitat types.

*Greener Melrose*

## 3.3 A successful just transition

Less air pollution, fewer private cars on the road meaning safer active travel and therefore even more active travel. Fewer incidences of asthma. For my community, more sharing of goods and services, for example neighbourhood tool libraries. More opportunities to shop and buy goods from my own neighbourhood, supporting local businesses. An economy measured by wellbeing.

*Individual*

**3.3.4** A few respondents suggested that COVID-19 has provided an opportunity for people in Scotland to experience some of the changes that would feature in a successful transition, demonstrating how lives could be improved by adopting such changes permanently.

### Transport

**3.3.5** Transport was a dominant theme in comments. In summary, the key goal is for Scotland to have left the car behind. Better provision of affordable, integrated public transport has encouraged people to move up the sustainable transport hierarchy and travel by bus and train. Increased active travel – by walking and cycling – has reduced air pollution and improved health. In rural areas, ‘on-demand’ community transport is more common. Many described greater use of electric or hydrogen fuelled vehicles, including ferries and planes, to improve connectivity with the islands. These improvements would be achieved following investment in the supporting infrastructure such as re-opening old lines and electrifying railways, creating cycle networks, and expanding an electric vehicle charging network.

Public transport would be free, with buses and ferries powered by hydrogen and any inter-island flights would use electric planes. Road infrastructure would support cycling, with people travelling by bicycle or tricycle, where possible, with car parking spaces replaced by weatherproof bike shelters. Electric cars could be available to carry heavier items and deliveries around local areas. Car share schemes and support for residents to purchase electric cars would be needed, where residents are unable to use bicycles or tricycles.

*Extinction Rebellion Orkney*

Our cities and towns are vibrant, healthy places that prioritise the movement of people via active travel.

*Individual*

### Housing and fuel poverty

**3.3.6** Hopes for improved housing was the second most prevalent theme. Scotland’s new homes have been carefully planned and built in a considered, environmentally friendly way and a few specified that in their vision, all new buildings are net-zero. Old housing stock is retrofitted to improve insulation and heating. Many suggested that these steps to a successful transition would reduce or eradicate fuel poverty.

## 3.3 A successful just transition

A successful transition to net-zero emissions would mean warm, healthy, affordable to heat, and net-zero carbon homes and communities throughout Scotland. These would be highly insulated homes, with appropriate ventilation, and low carbon or renewable heating technologies. Because the homes are so well insulated, heating demand is dramatically reduced and so are running costs. Fossil fuel heating will be phased out starting with off-gas homes and replacing it with low carbon or renewable heating technologies – heat pumps, heat networks, energy storage.

The transition has been delivered through a highly skilled supply chain, involving SME's all over Scotland, backed up by a robust quality assurance scheme. The supply chain includes installers, engineers, and manufacturers – who together have sustained and created thousands of jobs. The quality of programme management and delivery on the ground has led to export opportunities, providing further potential for more quality jobs.

Fuel poverty has been eradicated, and the housing sector as a whole has achieved net-zero emissions by 2045.

*Existing Homes Alliance Scotland*

### Land use, agriculture and food production

- 3.3.7** The third most common ambition was for changes in land use. Several respondents highlighted that a successful transition would result in greater forest cover, the restoration and protection of ecosystems, rewilding and better management of moorland. A few envisaged that grouse shooting would be stopped or banned.
- 3.3.8** More outdoor space, and greater use, access, protection and appreciation of new and existing green space was mentioned by some. Access to local green spaces or parks with plants and wildlife, community gardens, or children being able to play in the street, were all cited as evidence of a successful change.
- 3.3.9** Changes to agriculture highlighted by some respondents included using more efficient practices to reduce emissions; moving away from high emission livestock farming; less pesticide use; more organic farming; and smaller farms. A few conflicting ideas were shared in relation to fish farming – some called for it to be stopped, others for expansion.
- 3.3.10** Many reflected on the benefits of a local food supply in a successful transition. They hope to see more food grown at home, in allotments or in community gardens. In turn, supply chains would be more resilient with fewer imports and reduced associated emissions.

A successful transition would involve the protection of biodiversity and the restoration of ecosystems such as forests, peatlands, wetlands and oceans. This would include enhancing biodiverse forest cover rather than monoculture conifer plantations.

*Biofuelwatch*

## 3.3 A successful just transition

### The importance of community

**3.3.11** Many respondents felt that communities would play a central role in ensuring a successful transition, by facilitating decision making, providing services and possibly owning land and energy supplies. All these factors were cited as potentially generating employment, self-sufficiency, increased resilience and community cohesion.

New democratic structures devolving decision making and budgets to municipalities, to increase accountability within the political system and community ownership of what happens in our area.

*Individual*

Empowered democratic communities. We are a nation of active citizens with a vibrant system of small-scale local democracy. Communities have access to local land and resources and are able to devise and implement local solutions to create low carbon, resilient places.

*Transition Edinburgh*

### Renewable energy and decarbonisation

**3.3.12** A key feature of a successful transition for many is greater use of renewable, sustainable, green energy sources – more wind, solar, tidal, and hydro electricity generation. A few hoped for Scotland to become self-sufficient in renewable energy production, and potentially able to export energy. Some envisaged the complete elimination of fossil fuels including an end to oil extraction.

**3.3.13** Several respondents reiterated their desire for a cleaner environment, less pollution, better air quality, less litter, less noise and cleaner water. Related to this, a few respondents shared the view that a successful transition would see Scotland meeting its climate change targets, in line with Paris Agreement targets.

A successful transition would see a thriving renewable energy sector whereby Scotland is able to meet all of its energy needs from renewables, without the need for fossil fuels as backup, and is providing employment for thousands of people in truly green jobs.

There would have been significant investment in low carbon public transport and a move away from reliance on cars and major road building schemes to improve connectivity.

*Individual*

### Economic and employment opportunities

**3.3.14** Several respondents detailed their hopes for the creation of a thriving, resilient, sustainable economy, with local businesses (both shops and manufacturing) supported and flourishing. They envisaged opportunities to export knowledge, skills and expertise in renewables, the energy sector and green industries. A few commented that Scotland/north east Scotland will move to a more stable economy and away from the 'boom and bust' associated with the oil industry. Some reiterated their desire to shift to economic measurements based on wellbeing and social purpose rather than GDP.

## 3.3 A successful just transition

**3.3.15** Many described increased job opportunities resulting from a successful transition, particularly in the renewable energy, construction, heating and sustainable tourism sectors. Growth in local businesses was also described. These forms of employment would be high quality, satisfying, valued, secure and sustainable in the long-term, particularly for those who have transferred from the oil and gas sector.

**3.3.16** Several hope to see greater use of technology, especially improved access to broadband and mobile technology. Specific aspirations included older people being more IT literate, and the NHS making more use of tele-medicine to reduce travel requirements.

### The circular economy and sustainable lifestyles

**3.3.17** Respondents highlighted their desire to see a society with a changed mindset. Citizens are focused on the environment, empowered to make change and feel pride in having done so. They described an ambition to reduce consumerism and increase sustainable lifestyles. A fully functioning circular economy was mentioned by many, featuring extensive repair, reuse or recycling. More generally, some desired less waste or a zero-waste society, including more food waste recycling and reduced littering. A small number described a system where local authorities and the public play a lead in developing a circular economy by enshrining local sourcing and shorter supply chains in procurement.

**3.3.18** Several noted their wish for greater home working, shorter working hours, a 4-day week and more part-time working. Reducing unnecessary travel or travel for work or business and replacing this with digital communication was also seen as desirable.

### Policy and legislation

**3.3.19** Respondents hope a successful transition will result in the environment being central to all policy decisions, and in a national and regional framework of policies with a co-ordinated approach between government and local authorities. Specific policy suggestions which might feature included a small number calling for a universal basic income, a carbon budget for each person or legislation to limit and recycle waste.

### Reduced inequality

**3.3.20** Some respondents feel that success would include the reduction or elimination of poverty in Scotland. Others stated it would mean no-one had been left behind or be harmed by the transition. Some argued that the transition should focus on the most vulnerable and disadvantaged. Other specific hopes included better engagement with women, vulnerable groups, minority groups and people with disabilities; ending homelessness; reduced inequality in health outcomes; and greater appreciation of key workers.

### Improved health

**3.3. -21** Several respondents noted the improved physical and mental health which would result from other positive features of a successful transition. Improved air quality, more active travel and better diet would aid physical health. Alleviation of poverty and the associated distress, better housing, and greater use of the outdoors would aid mental health and wellbeing.

# 3.4 Actions for the Scottish Government

## 3.4 Actions for the Scottish Government

**3.4.1** Consultation question four asked about the role of Scottish Government in delivering a just transition to net-zero:

**What actions do you think the Scottish Government should take to manage the opportunities and challenges referenced above?**

**3.4.2** The analysis in this chapter focuses on actions for the Scottish Government. In their comments some respondents also referenced the opportunities and challenges inherent in transitioning to a net-zero economy; these themes are not repeated as they have been addressed in previous chapters.

### **Leadership, urgency and new approaches to policy and legislation**

**3.4.3** Calls for leadership and a sense of urgency were frequently identified in responses to this question. Many suggested that delivery of a just transition should be high on the list of national priorities and some commended the Commission in sustaining a focus on the shift to a net-zero economy.

**3.4.4** Several respondents urged the Scottish Government to be bold and set more radical targets for emission reductions. There were repeated calls for the development of a clear strategy and implementation plan that reflects the complexity and scale of change required. One respondent called for the introduction of a constitution that enshrines a commitment to live in balance with the natural world and another suggested that the Scottish Government should move towards a broader consideration of economic growth which recognises the wider positive economic and social impacts of reduced emissions.

**3.4.5** Comments on leadership included calls for the Scottish Government to divest public sector pensions from any investment in fossil fuel companies; to direct procurement systems to increase the spend on local, sustainable businesses; for impact assessment processes to focus on equity in transition; and to consider how connections between government directorates and policy portfolios could enhance decarbonisation efforts.

**3.4.6** Many respondents urged the Scottish Government to implement new legislative and policy approaches. The level of detail provided in these suggestions varied; in some cases, a proposition was put forward without extensive description of what this would entail. Comments around new approaches, policies and legislation are presented below.

### **Energy and emissions**

**3.4.7** There were wide ranging comments on energy and emissions. Some of these made clear links to economic and social opportunities and challenges. For example, in relation to energy and the economy some highlighted opportunities for growth in the renewable energy sector and others called for the Scottish Government to set out a vision that encourages business investment in the energy sector by providing clarity about changes envisaged in the medium to long-term. They asked the Scottish Government to support workforce transitions for those employed in the sector and some suggested that the fossil fuel industry should also bear the costs of re-skilling the workforce.

## 3.4 Actions for the Scottish Government

- 3.4.8** On social opportunities and challenges, comments included concerns that renewable energy and new technology or approaches to reduce emissions may not be affordable for all. A few focused on the challenge of changing behaviours and energy use, calling for the Scottish Government to introduce education and information campaigns about emissions reductions and the benefits that will arise from the transition. One respondent described 'a poverty premium' in relation to energy and other services, noting that 'an investment in rural and remote areas is required to ensure those living there can receive the same opportunities and services that those living in urban areas can benefit from'.
- 3.4.9** Many respondents focused on ways to reduce emissions, without linking their comments specifically to economic and social opportunities and challenges. These included calls for a decommissioning plan for the oil and gas sectors and a more targeted goal of achieving a 90% reduction in carbon emissions by 2035. Some suggested there should be an end to subsidies for oil and gas, though it should be noted this is reserved to the UK Parliament. A small number felt that diesel, petrol and plastic should be banned completely. A few observed that no more licenses should be issued for oil and gas exploration and extraction.
- 3.4.10** Some respondents advocated for the creation of new bodies to champion and influence the transition, for example a specific Scottish Climate Change service, a task force or a climate change assembly.
- 3.4.11** The Scottish Government was urged by some respondents to plan for more wind farms, to remove caps on solar and wind technology, to replace gas with hydrogen, remove restrictions on development rights, invest in hydro and tidal power, convert waste into clean energy, and implement recommendations in the Sea Change Report and the Just and Green Recovery Plan. One respondent called for the Scottish Government to include nuclear energy in its vision, another suggested that nuclear may have a role to play but is too risky to include as part of a long-term solution.
- 3.4.12** Other suggestions included identification of community test sites to convert the gas system from methane to hydrogen, encouraging local electricity generation through grants and subsidies and incorporating renewable energy into all new housing developments.
- 3.4.13** Mixed views about the Scottish Government's role in incorporating carbon capture and storage in the transition to a net-zero economy were evident. Some felt Scotland has an opportunity to take the lead in this emerging field and urged for greater investment in the sector's development. A few suggested it would be better to focus efforts on preventing carbon from being created in the first place.
- 3.4.14** Demands for innovation and investment were evident in many responses, including research and funding to support the development of renewable energy technology and to enhance Scotland's energy infrastructure. One respondent called for a specific focus on technology for older or remote properties, given the challenges of connecting these dwellings to efficient energy networks. Another suggested Scotland should establish a net-zero technology centre.
- 3.4.15** The Scottish Government was also urged to tighten energy regulation standards, introduce an energy charging regime that supports achievement of net-zero targets, and establish an important role for a publicly owned energy company (POEC). One respondent suggested that all future energy distribution systems should be buried or built underground to provide greater network capacity and resilience, following the example set by Denmark. Another called for the regulation of non-regulated energy markets.

## 3.4 Actions for the Scottish Government

**3.4.16** While many urged the government to take strong action to reduce emissions with immediate effect, an individual urged the Scottish Government not to tackle emissions, on the basis that they should 'get back to the real world'.

As the renewable energy sectors are growing across the UK, Europe and globally, and with the growing emphasis on, and commitment to, energy transition in the oil and gas industry, there are many opportunities to create new economic activity. These include new technology development and commercialisation, diversification of traditional industries and the creation of new businesses, all of which will create new jobs, and products and services that are saleable into both domestic and international markets.

The Scottish Government should work to ensure emerging pre-commercial technologies such as floating offshore wind, wave and tidal, hydrogen and geothermal energy have a route to market. Support will be required until these technologies have reached a stage of maturity where the technology can be scaled up and cost reduced to be competitive. Clear targets, identified development areas, and financial support mechanisms have enabled the deployment of fixed offshore wind at scale. It is also expected to be the cheapest form of electricity generation in the near future. If the success of fixed offshore wind can be repeated with other technologies it will greatly support the just transition – green power, new opportunities for communities, new employment and significant export potential.

*Aberdeen City Council*

### Land use

**3.4.17** There was wide ranging discussion in relation to land. For example, some considered the role of land reform in a transition, suggesting the Scottish Government could do more to support community ownership and use of local land, enabling communities to develop and implement initiatives contributing to the ambitions of a net-zero economy. One respondent called for a strong policy direction to ensure any planned development incorporates consideration of energy use and needs. Another highlighted the opportunity represented by the 4th National Planning Framework to contribute to a just transition, calling for a shift to long-term holistic thinking. More broadly, several urged the Scottish Government to end the destruction of peatland, to encourage rewilding, stop deforestation and focus on improved biodiversity.

### Food and goods production and waste management

**3.4.18** There were frequent references to food consumption, production and waste. A few respondents made explicit links to economic and social opportunities or challenges; others focused more broadly on ways to reduce waste.

**3.4.19** Economic challenges included the conflict between Scotland's existing economy, in which many businesses are reliant on new purchases, and the need for people to reduce consumption and reuse materials to reduce emissions. One participant highlighted twin economic benefits associated with composting: more opportunities for commercial composting, and improved soil quality leading to greater yield from soil. Social challenges included the difficulties of changing preferences and consumption of high emission products and foods (for example fast food with excess packaging) and the benefits linked to food, including better health from more nutritious eating.

## 3.4 Actions for the Scottish Government

**3.4.20** General comments on food and goods included discussion of sustainable approaches. There were calls for the Scottish Government to encourage people to buy local produce, to reduce overall consumerism, to subsidise food produced using sustainable methods, to make reforms to agricultural policy and legislation to reduce greenhouse gasses, or to encourage regenerative agricultural practices. One organisation highlighted the importance of giving consideration to and reconciling what can sometimes be competing policy demands.

**3.4.21** Other responses highlighted a need to offer support for small scale local farmers. Examples included financial incentives to encourage efforts to reduce food miles, investing in organic farming, encouraging greater production and consumption of plant-based foods and introducing a statutory requirement for labelling on foods to show greenhouse gas emission intensity. Some called for an end to high impact fishing.

Promotion of and support for healthier agricultural systems, using local growing/crofting communities, which promote increasing biodiversity. Move away from heavily subsidised, soil degrading large scale meat and dairy farming. Actively support a variety of natural growing approaches including permaculture, biodynamics, organic farming, biodiversity farming, agroforestry etc., Rewild the Scottish landscapes, creating jobs in doing so, and increase biodiversity as it is beneficial to human wellbeing (in enjoying spaces and foraging for example), supports wildlife and also makes more robust growing/farming spaces in the face of climate change.

*Climate Action Strathern*

Farming is a long-term business based on long-term investments and changes to farm practices will take time given the length of livestock production cycles, crop production cycles and the life expectancy of machinery etc. Climate change mitigation targets have an ambitious timescale and there is a danger of rushing through changes to the farming industry if an early start is not made to developing clear strategic policy for the future.

Policy should be clear and simple to the industry, support measures and schemes should have sufficient flexibility to cover differing situations across different farm types and regions, and they should be straightforward for farmers to adopt without the need to engage professional advisors.

*Scottish Tenant Farmers Association*

**3.4.22** General comments included calls for an end to schemes that encourage excess food purchasing and requests for single use plastics to be banned in Scotland. The Scottish Government was also asked to encourage and expand the role of recycling and reusing within the economy.

## 3.4 Actions for the Scottish Government

Food waste/surplus at a commercial level should mostly be driven by the market and bottom lines although mandatory waste reporting would also help drive this reduction. Reporting should be developed with special attention paid to 'waste' generated by price-wars and loss-leaders that is then diverted to food banks, further institutionalising the model. Food waste in the home has by far the biggest impact but we need a new paradigm to address this. There needs to be a radical rethink around messaging and how to communicate with householders. Bringing together a diverse range of stakeholders from across the food landscape, including nurses, landlords, planners, teachers, architects, etc., would help explore new ways of thinking. Where unavoidable food waste exists, there should be mandatory recycling including greater powers to challenge and ultimately fine residents for non-compliance. In the rental sector, landlords should also share responsibilities for ensuring tenants understand and comply with recycling requirements.

*Nourish Scotland*

### Transport

- 3.4.23** Calls for actions on transport appeared frequently. A few respondents made explicit reference to economic and social opportunities or challenges linked to transport. Others described overall changes to the system they wished to see.
- 3.4.24** Economic challenges included the difficulty of decarbonising an entire sector, the complexity of adjusting a system underpinned by long-term planning efforts and the significant task of achieving change in businesses reliant on existing transport systems in their delivery models.
- 3.4.25** Social challenges included concerns that costly changes in transport for the public – for example, encouraging purchase of electric cars – risk further inequality by widening the gap between rich and poor. A few highlighted opportunities and challenges associated with complex social changes that may lead to reduced reliance on transport; for example, how to organise, plan and resource changes to employment, shopping and essential services so that they are closer to places where people live. Many respondents focused on the health benefits of active travel.
- 3.4.26** Respondents urged the Scottish Government to introduce stricter regulations to reduce air travel. Examples included days without any flights or encouraging businesses to stop using air travel. One respondent requested investment in sustainable aviation fuels to reduce emissions, observing that this would be 'the quickest win (both in terms of economic boost and decarbonisation)'.
- 3.4.27** There were multiple references to public transport, including calls for the development of an electric transport system, for national ownership of public transport services, and for provision of subsidised or free transport at the point of consumption. A small number discussed Scotland's railways, calling for total electrification of the railway system and for train journeys to be cheaper and easier. Two called for expansion of the metro system.
- 3.4.28** The many comments on cars included an appetite for general discouragement of car use. A small number suggested cars should be banned in city centres; one felt city centres should be reserved for electric vehicles; one suggested parking could be made more expensive; another called for the introduction of road pricing models; one called for encouragement of home working to reduce commutes; one proposed two car-free days in cities per month; another suggested a limited number of tickets per year be issued for people driving the NC500 route.

## 3.4 Actions for the Scottish Government

- 3.4.29** Several respondents asked the Scottish Government to support the anticipated increase in electric car use by facilitating improved access to charging points and a small number observed the requirement to upskill the motor industry to provide services for electric vehicles.
- 3.4.30** Approaches to make roads safer were encouraged, with respondents outlining how such measures could reduce emissions and deliver wider social benefits. Examples included regular testing of drivers, larger penalties for poor drivers, presumed liability for drivers if there is an accident with a cyclist or pedestrian, more 20 mph speed limits and enhanced traffic restrictions.
- 3.4.31** The health benefits of active travel were frequently highlighted, with respondents noting that improved networks and expansion of walking and cycling paths would encourage this. Some urged the Scottish Government to withdraw from road building projects and reallocate this resource to fund active travel and sustainable transport infrastructure. One called for conversion of some roads or highways into bike routes; another for more resources to be allocated to implementing the national walking strategy; and one advocated the creation of a stimulus package for living locally, designed around 20-minute neighbourhoods.
- 3.4.32** A few highlighted the need for coordination and planning to enhance active travel and make local adjustments that would reduce dependence on vehicles, with public transport options and active travel a factor in any new development. Linked to this, one suggested that regional transport planning authorities are underfunded and would benefit from more resourcing and greater powers to implement change.

We need newly re-empowered Regional Transport Authorities that have power over the entire transport network (public transport, roads, traffic controls and land-use planning), and which are properly funding, with existing funding schemes (BSOGs, the Concessionary Card Scheme etc.) being channelled through the Regional Transport Authorities and not awarded to operators directly from central government. Most importantly, these Regional Transport Authorities also need revenue-raising powers (like Transport for London), so that money raised from traffic control measures is guaranteed to be re-invested in expanding and improving the public transport network.

*Get Glasgow Moving*

- 3.4.33** Within this discussion there were requests for the Scottish Government to nurture and promote a cycling culture. Examples included greater provision of cycle training in schools, grants for cycling groups, bike subsidies, facilities for cyclists in workplace settings and greater capacity for bike passengers on buses and trains. One suggested there could be a reward scheme for people who reduce their carbon footprint through active travel.
- 3.4.34** Shipping and ferries were mentioned in small numbers of responses; one suggested that ferries should be built in Scotland; and another called for joined up timetable planning between buses, trains and ferries.

## 3.4 Actions for the Scottish Government

### Infrastructure

- 3.4.35** Some respondents reflected on the infrastructure required for the significant changes anticipated in Scotland over the coming decades. They highlighted economic considerations for the Scottish Government to address, including how to finance new infrastructure projects. Positive social impacts from improved infrastructure, including better digital connectivity for rural areas, were also identified. One respondent called for 'long-term investment decisions in infrastructure, developing the business case through a counterfactual which fully takes account of the social and environmental costs'.
- 3.4.36** A few respondents urged the Scottish Government to assess Scotland's infrastructure in relation to achieving net-zero and expressions of support for the recommendations of the Scottish Infrastructure Commission were identified in some responses. One called for the Scottish Government to upgrade broadband connectivity across Scotland to enable communities to benefit from 'smart local energy systems', another highlighted new job opportunities that would arise from improved digital infrastructure, such as people in rural areas being better able to work from home.

The Scottish Government should support and facilitate investment in infrastructure such as ports, harbours, fabrication and manufacturing facilities, skills training and transition from other industries such as oil and gas. This will be needed to ensure that Scotland can secure and retain maximum local content in projects and create jobs in areas such as large-scale fabrication, construction and operations and maintenance. Growing domestic manufacturing and supply chains will help build on the country's resilience and future-proof against economic shocks including sectoral downturns and pandemics, while helping to secure and protect a strong skilled workforce. This is borne out by the challenges experienced in accessing imported goods as a result of COVID-19. This pandemic has created new economic issues that are going to make the emphasis on just transition even more important. The green technologies are growing areas of economic activity. They are key to creating new infrastructure, jobs and investment that will be required for national recovery, and so it is important that they are supported.

*Aberdeen City Council*

## 3.4 Actions for the Scottish Government

Transport is the largest single source of Scotland's greenhouse gas emissions and remains the largest obstacle to emissions reduction. The increase in cycling and walking during the pandemic shows the potential if these were made easier and safer. Applying Christie Commission principles, a comprehensive national plan of preventative spending on active travel will save the country money through mental and physical health improvements. Quality of life will improve joining planning decisions, and with investment in the planning, design, management and maintenance of green spaces by Councils. Only a radical transformation of public transport – free or low fares, more routes, improved frequency and integration, multi-modal ticketing, as well as greener – will be sufficient for people to shift from private cars. In the process, inequality will be reduced and access to the labour market opened up. This can be achieved by local authorities re-regulating and municipalising bus transport, using the powers in the Transport (Scotland) Act 2019, extending the powers and funds of regional transport authorities, and creating national bargaining arrangements to secure Fair Work in the transport sector.

*Unison Scotland*

### Economic development, planning and models

- 3.4.37** Respondents highlighted the potential for Scotland's economic strategy to underpin the success or failure of transition to a net-zero economy. Economic approaches with varied levels of ambition and detail were proposed. Specific suggestions included advocating a New Green Deal for Scotland; creation of a resource map to identify goods flowing in and out of Scotland; Scottish Government to measure gross national happiness and to implement the doughnut economic model; and money for prisons, police and the armed forces to be reallocated to sustainable economic development. One suggested the Scottish Government should 'use the successes of the Climate Challenge funded projects to re-focus the way that all money is spent by the Scottish Government, engage economically driven networks by subsidising ideas that help to shift goods and services to more sustainable goods and services'.
- 3.4.38** A small number called for the introduction of local currencies but did not provide details and one mentioned this in the context of distributing wealth into the economy.
- 3.4.39** Many comments focused on the crucial role in decarbonisation of planning and managing economic development. Respondents offered a broad range of propositions for the Scottish Government to implement. Several of these related to economic planning. There were repeated calls for the development of specific transition plans for different sectors. References to a costed economic transformation plan, produced by the Common Weal think tank, were found in several responses.
- 3.4.40** More broadly, respondents urged the Scottish Government to nurture green businesses; prohibit the import of goods which do not meet environmental standards; issue larger fines for polluting businesses; require businesses to produce accounts which provide an environmental risk assessment; and change product advertising to provide information about environmental impact. One respondent suggested Scottish Enterprise should support and encourage businesses to transition to models and ways of working that are aligned to the ambitions of a net-zero economy.

## 3.4 Actions for the Scottish Government

There needs to be discussion with all sectors to develop policies for sustainability which are then monitored and enforced. Tax needs to focus on the polluter pays principle and assistance needs to be given to poorer households to transition. When government assists companies, it should consider taking an equity stake to allow it to influence their policies for the public good. Transitional assistance may also be needed to support the process of change. People who are unemployed or who face higher costs due to the withdrawal of public services may need additional financial help. Procurement by the Scottish Government and local authorities should be revised to facilitate the engagement of smaller local organisations in service delivery and to avoid large companies dominating; they tend to be more focused on profit than meeting local need. It should also take account of the tax contribution made by companies to the UK and Scottish Governments.

*St Columba's by the Castle Episcopal Church*

- 3.4.41** Frequent calls were identified for sectoral adjustment plans and for investment in workforce training and development to support the transition. This discussion included an acknowledgement that those working in carbon intensive industries will need support to shift to new forms of employment, as well as wider reflections on the range of skills Scotland will need for a greener economy. The need to involve key stakeholders in the planning process, including businesses and trade unions, was highlighted. One respondent suggested that 'in order to protect workers while ensuring a fairer spread of the economic benefits, the Scottish Government must anticipate changes in the labour market and put in place strategic skills development and retraining programmes.'
- 3.4.42** On workforce planning, a small number urged the Scottish Government to implement a four-day working week and encourage working from home where possible, to reduce commuting and its environmental impact.
- 3.4.43** Many called on the Scottish Government to encourage innovation to support the transition to a green economy. Examples given included facilitating joint working by further education institutions and businesses to share knowledge, championing and showcasing good practice, offering incentives, encouraging entrepreneurs, investing in research and development for new technology and considering the role of data in assisting a transition.

Training and skills, inclusive labour market programmes and career development support should be delivered by colleges, universities and industry-based bodies as part of regional skills plans. Discussions with employers' federations, trade unions and training providers (of potential limits within the employer-based apprenticeship system of rapid growth in specific trades) should be initiated well in anticipation of this problem to be factored into the Just Transition Strategy. There is an urgent need to map the skills required in a fossil free economy and begin targeted programmes to address any gaps that would impede delivery.

*Friends of the Earth Scotland*

## 3.4 Actions for the Scottish Government

### Education and public awareness

**3.4.44** Many respondents urged the Scottish Government to engage in an information and awareness campaign to garner public support and understanding for the transition. They explained that this would support people to comply and help the public to understand what needs to change, what change will involve and what they will gain from the transition. Suggested ways to raise awareness included consultation, public information campaigns, engaging with community groups and using culture and the arts to communicate, resonate with and inspire the public.

**3.4.45** Often these comments included pleas for more focus on climate change in schools, so that future generations are engaged from an early age.

All schools should have gardens/areas enabling students with the opportunity to grow vegetables and gain a better understanding of the food cycle and local production. Classes and education should be offered in ecology, sustainability, supporting peers and their community.

*Individual*

### Financing the transition to net-zero

**3.4.46** The economic challenge of financing the transition to achieve net-zero was mentioned in many responses. In this discussion the contribution of expenditure and activity by the public sector to the process of reducing emissions was highlighted by some respondents.

**3.4.47** Many respondents spoke positively about the Scottish National Investment Bank and suggested it could play a role in the transition, for example by funding projects which contribute to achieving net-zero or by investing in green bonds. One respondent advocated for the creation of a sovereign wealth fund, built by expansion of renewable energy, but did not provide further detail about how this could work.

**3.4.48** On this theme, one respondent called for a mass decarbonisation programme of public buildings, schools, hospitals and prisons by 2040. Another suggested the Scottish Government should ensure all public sector vehicles – or those used by its contractors – are required to be low carbon with penalties for any breaches. One proposed that businesses with poor records of compliance with environmental policies should not be awarded any public sector contracts.

**3.4.49** Respondents acknowledged the role of taxation in achieving a net-zero economy. Suggestions related to taxation generally fell into one of two categories:

- tax to discourage activity contributing to emissions, and
- tax as a means to generate revenue to repurpose for the common good – such as investing in developing the green economy or redistributing wealth to support communities through the transition.

## 3.4 Actions for the Scottish Government

**3.4.50** Specific tax interventions relating to these two categories were provided by respondents and included taxation linked to the 'polluter pays' principle, progressive taxation (on wealth and on emissions) to address inequalities and taxation on food linked to harmful impacts on health or greenhouse gas emissions. Other requests included retention of 0% and 5% VAT rates on renewable energy installations; taxing households with more than two cars; a tax on Airbnbs; higher taxes on imports; shifting the burden of taxation from labour to the use of natural resources, including a land value tax; a tax on carbon; tax on goods with less than 30% recycled content; a model of taxation that encourages the use and adaptation of existing buildings over new developments; and tax breaks for locally sourced food delivery services. Other suggestions included encouraging and supporting renewable businesses by removing the increase in business rates that applies if a business installs onsite solar energy.

The taxation system favours new build construction over the retention, reuse and adaptation of existing buildings. The UK's Value Added Tax (VAT) system imposes a 20% tax rate on the repair, maintenance and refurbishment of existing buildings. New-build developments are tax free. Tax structures should be reviewed to provide parity for the use and adaptation of existing buildings. The plan-led system will be all the more important in meeting the challenges brought by the need to tackle both climate change and the economic recovery which is likely to be needed following the COVID-19 pandemic. The Scottish Government must reinforce the strong policy direction that any development and use of land is informed by a plan-led system. This must be underpinned by the policy principles of 'the right development in the right place' on an infrastructure first basis, including planning for our energy needs now and in the future. This will ensure that clear decisions are taken on where development should be directed, and the planning system should be resourced to support their implementation.

*Historic Environment Scotland*

The sector has moved at a fast pace to transition from a disposal culture to one which favours higher forms of waste treatment such as recycling, however, to maintain and accelerate this pace the sector will require continued support of policies which both incentivise and disincentivise certain practices. Landfill tax moves material away from landfill. Tax on goods without a 30% recycled content incentivises change and creates demand. Extended Producer Responsibility regimes, if well designed can ensure that the true costs of goods become apparent, forces producers to take responsibility for goods at end-of-life and can also provide support to on-going revenue costs of dealing with those goods at end-of-life.

*CIWM Scotland*

### Local Government

**3.4.51** A broad mixture of changes was proposed on the theme of promoting the role of local authorities in achieving Scotland's net-zero goals. These included legislation and policies in relation to urban planning, the introduction of regional sustainability councils and an overall change to the planning system so that decisions are considered in relation to their contribution to achieving net-zero. Other suggestions included simplifying recycling processes, minimising waste, offering repair services, progressing low emission zones across the country and for the Scottish Government to provide local authorities with duties and funding to improve air quality.

## 3.4 Actions for the Scottish Government

### Communities

- 3.4.52** The role for communities in supporting a transition was a key theme in many responses. Respondents anticipated a role for communities in supporting attitudes to change, behaviour change, fostering energy efficient ways of living and raising awareness of the need for a transition. These comments frequently included arguments in favour of circular economies and the role of individuals and communities in making the transition work, the role of community in enhanced wellbeing, civic empowerment and devolved decision making infrastructure (such as a Citizens Assembly) and the role of communities in local energy production and in small scale food growing.
- 3.4.53** A few highlighted an important need for the Scottish Government to work with and through local authorities to engage with local groups and communities. There was discussion of the place for the Community Empowerment Scotland Act (2015) and role of Community Planning Partnerships in shifting the balance of power and engaging communities in efforts to achieve a transition.

There should be priority, funding, and support given to communities to have their own communal growing schemes and land, whether that be throughout their community in an 'incredible edibles' way or a community garden etc. in line with the Community Empowerment (Scotland) Act 2015, and community composting schemes should be stimulated. Priority should be given to the creation of local food markets and shops carrying local produce. This would stimulate the rural economy, increase small scale farming, reduce transport costs and emissions, encourage entrepreneurship and foster a sense of pride in community.

*Individual*

### Housing

- 3.4.54** Some respondents anticipated significant changes to housing during the transition. From an economic perspective, they foresaw a need for investment to fund new approaches and to cover increased building and renovation costs. A few anticipated the creation of large numbers of new green jobs in housing, such as 'retrofitting buildings to meet insulation, water and energy exacting standards'. On social impacts, there were comments about the challenge of how to plan and achieve changes in housing. Some described positive social impacts arising from more energy efficient homes, such as a reduction in fuel poverty and lower costs for low-income households.
- 3.4.55** Often these comments focused on practical changes to homes and new house-building that could reduce emissions, such as introducing solar panel schemes for all houses in Scotland, offering grants or subsidies for people to improve the energy efficiency of existing homes and the adoption of Passivhaus standards. There were many comments about improving energy efficiency in homes, including calls for financial incentives to retrofit properties and to encourage owners and landlords to reduce household emissions.
- 3.4.56** There was also a strand of discussion about supporting local authorities – for example, through increasing their purchasing power – so they can purchase land and invest in green social housing schemes. Some urged the Scottish Government to learn from innovative approaches elsewhere, for example by offering subsidies to citizens for installing roof gardens, green roofs and living walls.

## 3.4 Actions for the Scottish Government

### Social Security

**3.4.57** Some respondents urged the Scottish Government to provide financial assistance to households with low levels of income. This was spoken of in general terms and in relation to a just transition; respondents explained that they expect basic costs to rise through the transition, with an adverse impact on low-income households. A few made specific calls for the introduction of a universal basic income.

### Collaborative approaches and political campaigns

**3.4.58** Calls for collaborative approaches to achieving net-zero were identified in several responses. Various stakeholders were mentioned, including multinational businesses, scientists, grassroots communities, landowners, the private sector, trade unions, campaign groups and involvement of the entire country through a specific national conversation on emissions. There was also mention of a need for greater cross-governmental exchange with a coordinated focus on reducing emissions at a UK, EU and international level. A small number of respondents urged the Scottish Government to identify and implement international examples of good practice.

Involve energy sector workers, climate activists, workers and communities in the process of building the new sustainable Scottish economy.

Scot.E3

# 3.5 Support for specific groups

## 3.5 Support for specific groups

**3.5.1** Question five asked for views about the groups affected by transition:

**Are there specific groups or communities that may be, or feel that they may be, adversely affected by a transition to a net-zero carbon economy? What steps can be taken to address their concerns?**

**3.5.2** Respondents' views on the groups that may be adversely affected typically fell into one of six categories: those working directly or indirectly in jobs linked to fossil fuels or carbon intensive industries; lower income households; vulnerable groups including people with protected characteristics; farmers and landowners; car users; and people living in rural or remote rural areas.

**3.5.3** In this chapter we summarise the comments about each group, key concerns and any solutions suggested by respondents.

### Fossil fuel production or carbon intensive industries

**3.5.4** Employees dependent on fossil fuel sectors were most commonly highlighted as facing adverse impacts from a transition to net-zero. This includes those working directly in oil, gas or petrochemical production and extends to those in carbon intensive industries such as heavy industry, construction, housing and haulage.

**3.5.5** Respondents suggested that opportunities in green industries could mitigate loss of employment. Some called for a structured transition plan for each sector of the workforce that may be impacted by the move to a net-zero economy, often suggesting that this should be developed in consultation with employees or union representatives. A small number highlighted workforce planning models for the Commission to consider, including Sea Change, Climate Emergency, Jobs and Managing the Phase-Out of UK Oil and Gas Extraction by Friends of the Earth<sup>10</sup> and the Lucas Plan<sup>11</sup>.

**3.5.6** It was highlighted that those currently in jobs directly or indirectly tied to fossil fuels would need specific financial assistance and support to acquire the skills to work in clean energy or carbon neutral industrial processes. Examples of supports included, job guarantees, income protection, apprenticeships, training incentives and investment in the growth of sectors and technologies that are not fossil fuel dependent, to encourage job growth.

**3.5.7** Some respondents reflected more broadly on impacts for the local and regional supply chain around oil and gas industries, and the potential for wider disruption should these sectors decline. Examples of local economies or communities which respondents felt could experience adverse impacts included Caithness and North Sutherland, Aberdeen and Aberdeenshire, Grangemouth, Cowdenbeath and Orkney and Shetland. Often, there were references to the enduring legacy of unemployment and social inequality associated with the demise of coal-mining industries and respondents urged the Commission to reflect on lessons learned from these experiences of unsuccessful economic restructuring.

<sup>10</sup> <https://foe.scot/resource/sea-change-climate-report/>

<sup>11</sup> <https://lucasplan.org.uk/story-of-the-lucas-plan/>

## 3.5 Support for specific groups

One obvious group who will be affected significantly by the move to net-zero are those who work in the fossil fuel sector. This will therefore affect the Aberdeen and Aberdeenshire communities, but not exclusively so. One has only to look at the Scottish communities affected by the energy transition associated with the decline of coal – such as Fife, Ayrshire, and Lanarkshire – to see how societal impacts can last for decades.

A further group which may have to sustain a greater share of the burden of energy transition are those who live in the vicinity of new infrastructure. As in France with nuclear power stations, such local interests can be compensated financially for that burden. Community benefit is also now a standard feature of Scottish wind farms. Such approaches are societally just and are to be encouraged.

*Individual*

There are still areas where a large part of the population work in fossil fuel industries who will be worried about the impact of the transition. We need to avoid the mistakes that were previously made in de-industrialisation in places like Glasgow. These types of industries should be encouraged to begin transitioning now and encourage retraining and support packages for their staff to transition.

*Individual*

### Lower income households

- 3.5.8** Lower income households were mentioned second most frequently in comments about groups which may experience adverse impacts from the transition to a net-zero economy. In some cases, this concern was linked to a view that people living in poverty face strict financial parameters which leave no room for manoeuvre in a period of change. For example, respondents anticipated that a transition would entail additional costs to upgrade heating systems, make homes more energy efficient or to embed new technology. Some suggested that the general cost of living may increase to reflect higher costs associated with changes in food production, transport systems and energy provision.
- 3.5.9** Some respondents said that carbon intensive industries are a significant provider of low paid employment. They argued that there will be a double burden for lower income households who face higher costs and potential unemployment as a result of job losses across these sectors.
- 3.5.10** To address these concerns, respondents called for close consideration of impacts and mitigating actions, focussed specifically on people with low levels of income. A small number urged the Commission to consider support mechanisms for lower income households, for example through subsidising any living costs associated with achieving the Scottish Government's goal to achieve net-zero. Respondents also advocated for support to assist a workforce transition for anyone employed in energy or carbon intensive sectors.
- 3.5.11** Community engagement activities and public information or awareness campaigns were also proposed as ways to support lower income households through the transition. One respondent highlighted the range of challenges that families living in poverty face, which are likely to take precedence over any focus on achieving net-zero. They observed that these households should not be alienated or excluded because of their level of engagement with the transition, suggesting engagement campaigns should reflect the context and lived experience of people's circumstances.

## 3.5 Support for specific groups

**3.5.12** Some respondents suggested that without a specific focus on lower income households, existing inequalities could be exacerbated. In this vein, a few advocated for a human rights-based approach to just transition, highlighting principles of non-discrimination, participation and accountability as particularly important. A small number pointed out that lower income households will be most adversely affected if nothing is done to tackle climate change.

Any group or community who is currently deprived or undervalued in some way, particularly households in SIMD lower categories and who therefore do not have the luxury of choice of healthier and more ethical, sustainable foods and services as they cost more. Eradicate so-called 'food deserts' in deprived areas, where there is very limited access to healthy food, and instead ensure it is more readily available and less expensive than unhealthy fast foods.

*Climate Action Strathearn*

### Cars and public transport

**3.5.13** Third most frequently mentioned in comments about adverse impacts was challenges for car owners and for public transport. Respondents expressed concerns that car owners would feel attacked and face additional costs, including further taxes on fuels or penalties for high emission vehicles. A small number anticipated restrictions on car users such as charges for driving in specific zones.

**3.5.14** Many suggested that a successful transition would entail a switch to electric vehicles. In this vein, a few respondents anticipated adverse impacts for the car industry and for anyone working in this sector.

**3.5.15** Many respondents called for recognition that people in rural areas depend on cars to access the employment and services they need. Several said that public transport is expensive and that the existing network of public and community transport is insufficient to meet current and future demand.

**3.5.16** Respondents put forward a range of solutions, including support for car manufacturers to produce electric vehicles. Some suggested that improvements in broadband would help reduce the need for business travel, contributing to an overall decrease in private car use. There were repeated calls for an expansion of Scotland's rail and bus networks and some suggested that public transport should be further subsidised or free at the point of use.

### Vulnerable groups

**3.5.17** Several respondents highlighted adverse impacts for groups with specific characteristics including people affected by homelessness, people with disabilities, BAME communities, women, people who are digitally excluded and older people. Many referenced existing inequalities experienced by these groups, such as poverty, exclusion, underrepresentation in decision making structures or poverty, suggesting these challenges could be exacerbated by the net-zero transition.

**3.5.18** Some respondents reflected that the unequal social impacts of the COVID-19 pandemic foreshadow challenges that may arise during the transition to net-zero. These include vulnerabilities to any changes in the availability or cost of public transport for those who rely on it, particularly people who may be isolated, ill or living in poverty.

## 3.5 Support for specific groups

**3.5.19** Mitigating actions identified by respondents included better design of social welfare and support systems including education, housing, health and transport. Again, there were calls for equality impact assessments when developing policies to combat climate change, and for consultation with communities with protected specific characteristics.

Social justice and climate justice are interlinked and the poor and vulnerable in our communities, and worldwide, will suffer most from the effects of climate change. Taxation, housing, transport, employment and food provision need to be planned to take account of health and social inequalities.

*Tweedgreen*

### Farmers and landowners

**3.5.20** Significant changes in land use were anticipated as part of a transition to net-zero, including a shift in the focus of agricultural production from livestock to crops. Some suggested that the agriculture sector is not prepared for the scale of change required and that some may perceive the transition as a threat to their culture and livelihood.

**3.5.21** A small number said agriculture's contribution to emissions was overestimated. Some expressed fears that farmers will be encouraged or forced to convert agricultural land into forests, arguing this will hamper biodiversity.

**3.5.22** Respondents' suggested solutions to these issues included research, education and training, and financial support such as fair pricing schemes, a guaranteed basic income, and subsidies and grants to, for example, encourage plant rather than livestock-based agriculture or a change in land use to recreation, nature conservation or rewilding. A few felt that farmers would need tailored support to assist them to adopt new methods, and that change in the sector could be supported by information campaigns promoting case studies and details about successful new models and approaches. Many of these comments called for close engagement and consultation with agricultural communities.

**3.5.23** Several respondents advocated for investment in small scale, local initiatives including crofts and community growing initiatives. There were repeat comments about the need for varied land use, including repurposing of land for recreation, conservation, or rewilding.

**3.5.24** A few respondents called for a specific plan which would include, for example, explicit targets and milestones for agriculture and land use so that the scale of change is understood. They suggested such a plan would need to communicate that the transition is essential for the common good and that change can be an opportunity.

Agricultural communities are already under siege on number of fronts – their first thought is that anything to do with climate change is bad for them, and this requires careful policy shifts as well as robust engagement if the sector is going to be able to contribute to net-zero ambition.

*The Highland Council*

## 3.5 Support for specific groups

### Rural or remote rural areas

- 3.5.25** Adverse impacts for people in rural or remote rural areas were frequently mentioned. These comments often highlighted the importance of car ownership in rural communities for access to employment and essential services. Some respondents expressed a concern that the interests of people in urban areas dominate decision making, urging the Commission not to forget people in rural communities.
- 3.5.26** Many comments alluded to poor infrastructure in remote areas, noting this has the potential to exacerbate inequalities during the transition. Examples included more expensive energy costs and slower broadband, which may limit any adjustments that are dependent on new technologies; for example, home based working. Many of the points raised about adverse impacts for households with low levels of income were mentioned in the context of those living in remote communities, with respondents noting high costs of living for people in rural areas.
- 3.5.27** A few respondents anticipated that traditional forms of rural employment such as deer stalking and grouse shooting will reduce during the transition. They highlighted that workers in these sectors may see the transition as a threat to their culture and livelihood.
- 3.5.28** Linked to the discussion on infrastructure and energy supply, a small number described the use of open fires, wood burning stoves and biomass boilers as low-cost heating in rural communities. They expressed a concern that these options will be removed in the future, forcing households into fuel poverty.
- 3.5.29** Suggested solutions to these challenges included a specific strategy to support rural communities through the transition. Respondents stated that the strategy would need to give consideration to economic growth, energy, infrastructure, transport, employment, healthcare and access to essential services. There were calls for active engagement and consultation with people in rural areas about the process of change and about how communities will be supported through it. One respondent suggested that as community benefit is now a standard feature of Scottish windfarms, this form of financial compensation should be encouraged for those in the vicinity of all new green energy infrastructure.
- 3.5.30** A small number of respondents highlighted that people in rural or remote rural areas will be most adversely affected if nothing is done to tackle climate change.

### Tourism and the aviation industry

- 3.5.31** Another theme in responses about adverse impacts concerned challenges for the tourism and aviation industries. Respondents anticipate a decline in short-haul flights, affecting all aspects of the aviation sector. Fewer international visitors would impact on Scotland's sizeable tourism market.
- 3.5.32** Suggested solutions to this included specific training to support people working in these industries to shift to new sectors and exploring provision of less carbon-intensive transport and tourism services. One respondent suggested that small tourist businesses such as hotels should be protected, as they can play an important role in local communities.

## 3.5 Support for specific groups

### No adverse impacts

**3.5.33** A small number of respondents saw no adverse impacts for any particular group, only a net gain for the country. These comments mentioned the creation of many new jobs in a green economy and the positive implications for social justice, in Scotland and on a global scale, should a just transition be achieved.

### Adverse impacts without a successful transition

**3.5.34** Adverse impact arising from no transition was also highlighted by some respondents. In these comments, respondents observed that all of society will be affected if climate change is not addressed, but that the most vulnerable will feel the worst effects. Impacts for people in developing economies whose farmland or forests are used to produce crops or livestock for global markets were also described. A small number highlighted the negative impacts of climate change on Scotland's historic buildings.

**3.5.35** To address this, respondents advocated for engagement with the public on the need for transition and for clear communication about the steps Scotland must take to achieve a net-zero economy.

# 3.6 Additional evidence

## 3.6 Additional evidence

**3.6.1** The final consultation question asked respondents if they wished to share further evidence with the Commission:

**Please provide here any other information, evidence, or research you consider relevant to the work of the Commission.**

**3.6.2** A multitude of examples, reports, books, websites and articles were shared with the Commission. This information typically fell into three groups: (1) scientific evidence illustrating the urgent need to achieve net-zero; (2) material discussing the political, philosophical or economic implications of managing climate change; or (3) examples of practice or models for the Commission to consider.

**3.6.3** The range of reference material provided by some individuals and organisations was extensive; for example, a single response provided evidence about climate change, social justice, energy production and sustainable economic models. Respondents provided varying levels of detail in their responses. Some simply shared a weblink or book title without explaining why they wanted the Commission to read this source while others provided a detailed discussion with multiple references in footnotes.

**3.6.4** Many participants reiterated points made elsewhere in their response or offered some general concluding comments. A small number thanked the Commission for their work so far. A few identified gaps in the available evidence base, advocating for research into a particular issue.

**3.6.5** References were collated and organised broadly by subject theme although in some cases a source spanned many relevant topics, particularly the books cited by some respondents.

**3.6.6** The volume of material for consideration cannot be covered in detail within this report<sup>12</sup>. Instead, this chapter focuses on key sources or evidence themes referenced in multiple comments, plus a sample of the many examples of practice or models signposted by respondents for the Commission to read.

### Climate change and protection of the environment

**3.6.7** Evidence included papers and reports by academics, journalists, communities of interest and campaign groups. There were references to scientific publications by the Intergovernmental Panel on Climate Change (IPCC), the Institute for Global Health, the Royal Scottish Geographical Society, plus news and commentary articles in The Guardian and Nature magazine.

**3.6.8** Several respondents referenced 'Our Common Home' a policy paper prepared by Common Weal, a think tank and collective movement. It sets out a series of steps to achieving net-negative carbon.

**3.6.9** Other forms of evidence included letters, such as that sent by the Committee on Climate Change to the Cabinet Secretary for Environment, Climate Change and Land Reform, and a letter sent by 200 US climate scientists to Congress.

<sup>12</sup> The Commission has also been provided with a full database of reference material.

## 3.6 Additional evidence

### Sustainable economic models and labour market adaptations

- 3.6.10** Several respondents signposted the Commission to the work of economist Kate Raworth, for example, the book 'Doughnut Economics' and her Ted Talks, which discuss ways to address economic, social and ecological challenges associated with climate change.
- 3.6.11** Links to the Preston Model and other systems of community wealth were shared by respondents. Approaches developed by the Wellbeing Economics Alliance including Katherine Trebeck and others were described, and reports by campaign groups such as Friends of the Earth, the Ellen MacArthur Foundation and GreenPeace.
- 3.6.12** There were repeat mentions of the many political, social and economic adjustments recently made in response to COVID-19. Respondents provided links to papers and articles on the theme of 'build back better', for example by Bella Caledonia, the United Nations and World Economic Forum.

### Energy

- 3.6.13** An extensive range of evidence related to energy was shared. This spanned issues such as hydrogen, harm from use of fossil fuels, biomass fuel, nuclear power, carbon capture, energy markets, gas, barriers to switching energy sources, fuel poverty, community renewable energy projects, new technology and the workings of the National Grid.
- 3.6.14** Evidence on improved energy demand and efficiency also appeared frequently, often in relation to heating. This included information about standards for new builds and improvements to existing housing stock.

### Agriculture and forestry, land ownership and land management

- 3.6.15** Several respondents shared articles and publications on carbon efficient approaches to food growing, including details of innovative approaches by local producers and examples from England, France and the USA. Food insecurity was also highlighted by some respondents, who signposted the Commission to a range of papers on this theme including reports by the Joseph Rowntree Foundation, and Food Foundation.
- 3.6.16** Discussion of peatland restoration, reforestation and community land ownership and management also appeared in responses to this question. There were several references to papers by campaign groups such as Reforesting Scotland, the WWF, the Woodland Trust, the Vegan Society, the Climate and Land Use Alliance and Community Land Scotland. A few respondents urged members of the Commission to read 'Rewilding' by Isabella Tree.

### Transport

- 3.6.17** Evidence about transport covered wide-ranging issues such as use of cars, public transport, aviation, walking, cycling, roads, transport poverty, infrastructure and planning. Documents shared with the commission included the National Transport Strategy, details about approaches in other countries and many publications by organisations such as Paths for All, Ice Bike, STSG, Transform Scotland, Transport for Quality of Life, Cycling Scotland, Living Streets and Sustrans.

## 3.6 Additional evidence

### Social justice and equality

**3.6.18** Publications by think tanks, communities of interest and campaign groups dominated the evidence in this theme. This included work by the IPPR's Economic Justice Commission, publications by the Transition Towns Movement and books such as 'Climate: A New Story' by Charles Eisenstein and 'What If?' by Rob Hopkins.

### Practice or models for the Commission to consider

**3.6.19** One respondent highlighted the work of the Industrial Biotechnology Innovation Centre (IBiolC), noting that biotechnology uses plant-based and waste resources to produce or process materials, chemicals and energy, offering green and sustainable alternatives to fossil fuels. IBiolC was described as 'a networking and support organisation that connects industry, academia and government to bring biotechnology processes and products to the global market offering scale-up facilities, talent development, funding provision and promotion of Scotland's assets'.

**3.6.20** An ongoing review of the role of community energy in the de-carbonisation of the energy system was described by another respondent, who explained that the 'focus is on empowering local community anchor organisations to be able to play a key role in helping drive energy demand reduction and contribute to a more 'flexible' energy system'. This respondent set out a five-year vision for community energy, including action to inspire and support local people to reduce energy demand and adopt low carbon behaviour; the development of local markets in energy supply; and local energy partnerships required by the National Community Energy Plan.

**3.6.21** Several respondents described community education, consultation and engagement models that they felt the Commission could learn from, including the Coalfields Longannet Initiative in partnership with Scottish Enterprise; South Seeds in Glasgow and Transition Edinburgh who highlighted that they are 'one of over 1,500 such community led local initiatives worldwide'.

### Gaps in existing research

**3.6.22** A few respondents described gaps in the evidence base for the Commission to investigate. These included: (1) the carbon sequestration opportunities offered by peatland; (2) specific consultation with disabled people and communities in rural and remote areas on the impact of the Just Transition; (3) identifying specific emission contributions from different sectors; (4) carbon capture research; (5) any positive impact on emission levels of changes brought about in response to COVID-19; and (6) further research into new technologies.

# 4. Conclusions

## 4. Conclusions

- 4.1** A range of informed individuals and stakeholders took part in the consultation. They appeared to be engaged and knowledgeable about a huge array of matters relating to a just transition, including both the economic and social impacts of change and the groups who are likely to be affected. Respondents were also able to outline their vision and ambitions for a successful transition and the actions required to achieve this. Together, these responses provide a useful evidence base for the Just Transition Commission to draw upon when developing their final report.
- 4.2** Reflecting their expert knowledge and specific interests, respondents' perspectives and evidence spanned a range of complex issues which cannot be summarised succinctly. For more detail, readers are encouraged to look to specific chapters, and to individual responses where permission was granted for publication. Examples of best practice and additional evidence cited by respondents should also be considered alongside this report.
- 4.3** Key themes in the discussion of moving to net-zero were the opportunity for a radical shift in Scotland's economy to focus on new, green, sustainable jobs and industries, particularly renewable energy. However, the challenge of managing the move away from oil and gas and ensuring workers in fossil fuels industries are adequately supported and re-skilled was widely acknowledged. Many highlighted opportunities for improved transport, sustainable land management, and the development of a circular economy. However, concerns around entrenched business interests, costs and the pace of change were expressed.
- 4.4** The transition is seen as an opportunity to create a greener, healthier and fairer Scotland with a greater focus on wellbeing. Respondents highlighted that improvements to housing and more use of public transport and active travel have the potential to dramatically improve health and availability and use of green space in Scotland. The transition to net-zero was also seen to be an opportunity to build and support strong, resilient communities that could drive changes such as increasing local food production and adapting working practices.
- 4.5** A significant challenge will be transforming public attitudes and behaviours, which requires clear leadership and communication to create a shared sense of purpose. Several highlighted that COVID-19 has shown people in Scotland that they can make significant lifestyle changes and demonstrated the benefits of doing so – for example cleaner air, spending more time outdoors or with family, and more engagement with local communities. The Commission and the Scottish Government were encouraged to act boldly and with urgency. A huge range of proposals to achieve net-zero were shared, many of which represent a radical change in policy for the Scottish Government.
- 4.6** While the severe consequences of climate change and the importance of moving to net-zero was an ever-present theme, the significant challenges in ensuring a just transition were acknowledged, including the need to ensure that no one is left behind or disadvantaged through the process of change. Overall, the key message from those who participated in the consultation was that decarbonisation of the economy offers the opportunity for growth, innovation, improved wellbeing and a healthier, fairer society.

# Appendix 1 – Call for Evidence questions

The Call for Evidence comprised to initial questions to collect participant information, five open-ended questions and a request for additional relevant information:

- Full name or organisation's name.
- Does your response relate to a specific sector?
- Q1. What do you see as the main economic opportunities and challenges associated with meeting Scotland's climate change targets?
- Q2. What do you think are the wider social (health, community etc.) opportunities and challenges associated with meeting Scotland's climate change targets?
- Q3. What would a successful transition to net-zero emissions look like for your sector/community?
- Q4. What actions do you think the Scottish Government should take to manage the opportunities and challenges referenced above?
- Q5. Are there specific groups or communities that may be, or feel that they may be, adversely affected by a transition to a net-zero carbon economy? What steps can be taken to address their concerns?
- Q6. Please provide here any other information, evidence, or research you consider relevant to the work of the Commission.

## Appendix 2 – Profile of respondents by sector

Sector	Number of respondents
Individual – sector unknown	67
Individual – response does not relate to a specific sector	50
Energy (inc. renewables and O&G)	26
Built Environment, Housing (inc. fuel efficiency)	16
Transport (inc. Aviation)	15
Land Use	13
Environment/Climate	13
Other	13
Community initiative/development	10
Third sector/campaigning organisation	10
Local Authority Response	8
Health	7
Other public body	5
Multiple	5
Waste Management	4
Trade Union (some in partnership with Climate orgs)	4
Education	3
Membership association	3
Food	2

## Appendix 3 – Question 6 sources cited

Question six asked respondents to provide any other information, evidence, or research they considered relevant to the work of the Commission. The table below lists the various reports, books, websites and articles which were cited. Note that all reference details are as provided by respondents and therefore we cannot guarantee their accuracy. Sources are listed in alphabetical order by author's name or the name of the issuing organisation where that information has been provided. We have grouped all sources by theme in alignment with the themes summarised in Chapter 7: Additional evidence. These are as follows:

1. Climate Change and the Protection of the Environment
2. Sustainable Economic Models and Labour Market Adaptations
3. Energy
4. Agriculture and Forestry, Land Ownership and Land Management
5. Transport
6. Social Justice and Equality

The content of some sources could reasonably be categorised under multiple themes. We have listed each source once and taken a view as to the most relevant category to group it within.

<b>Table 1: Climate Change and the Protection of the Environment</b>
Christian Aid, 'New Deal for Climate Justice'
Citizens Advice Scotland, 'Changing Behaviour in a Changing Climate,' <a href="https://www.cas.org.uk/publications/changing-behaviour-changing-climate">https://www.cas.org.uk/publications/changing-behaviour-changing-climate</a>
Climate Just – Joseph Rowntree Foundation, <a href="https://www.climatejust.org.uk/">https://www.climatejust.org.uk/</a> – Mary Robinson Foundation, <a href="https://www.climatejust.org.uk/">https://www.climatejust.org.uk/</a>
Climate Policy, <a href="https://www.tandfonline.com/doi/full/10.1080/14693062.2020.1728209">https://www.tandfonline.com/doi/full/10.1080/14693062.2020.1728209</a>
Climate Ready Clyde, 'Climate Risk and Opportunity Assessment – Key Findings', 2019 <a href="http://climatereadyclyde.org.uk/wp-content/uploads/2018/11/Climate-Ready-Clyde-Climate-Risk-and-Opportunity-Assessment-Key-findings-and-next-steps.pdf">http://climatereadyclyde.org.uk/wp-content/uploads/2018/11/Climate-Ready-Clyde-Climate-Risk-and-Opportunity-Assessment-Key-findings-and-next-steps.pdf</a>
Committee on Climate Change (CoCC), 'Take Urgent Action on Six Key Principles for a Resilient Recovery', <a href="https://www.theccc.org.uk/publication/letter-building-a-resilient-recovery-from-the-covid-19-crisis-to-roseanna-cunningham-msp/">https://www.theccc.org.uk/publication/letter-building-a-resilient-recovery-from-the-covid-19-crisis-to-roseanna-cunningham-msp/</a>
Commonweal, policies e.g. 'Our Common Home'  <a href="http://www.fairopoly.com">www.fairopoly.com</a> – shows how cities COULD use air quality legislation to drive buildings to reduce emissions.
Forestry Commission Scotland, 'The economic contribution of the forestry sector in Scotland', <a href="https://forestry.gov.scot/images/corporate/pdf/economic-contribution-forestry-2015.pdf">https://forestry.gov.scot/images/corporate/pdf/economic-contribution-forestry-2015.pdf</a>
Friends of the Earth Scotland, Platform and Oil Change International, 'Sea Change: Climate Emergency, Jobs and Managing the Phase-Out of UK Oil and Gas Extraction'

# Appendix 3 – Question 6 sources cited

**Table 1: Climate Change and the Protection of the Environment**

Polly Higgins, 'Earth is Our Business'
Institute for Global Health
Intergovernmental Panel on Climate Change (IPCC), 'Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty', Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.).
<a href="https://mossmorran.org.uk/about/">https://mossmorran.org.uk/about/</a> (no specific research cited)
Greg Muttitt & Sivan Kartha, <i>Equity, Climate Justice, and Fossil Fuel Extraction: Principles for a Managed Phase Out</i> , <a href="http://priceofoil.org/2020/06/01/equity-climate-justice-and-fossil-fuel-extraction-principles-for-a-managed-phase-out/">http://priceofoil.org/2020/06/01/equity-climate-justice-and-fossil-fuel-extraction-principles-for-a-managed-phase-out/</a>
<a href="https://www.nature.com/articles/d41586-019-03595-0">https://www.nature.com/articles/d41586-019-03595-0</a> (Planetary boundaries)
Net-Zero: The UK's contribution to stopping global warming, Committee on Climate Change May 2019, <a href="https://www.theccc.org.uk/wp-content/uploads/2019/05/Net-Zero-The-UKs-contribution-to-stopping-global-warming.pdf">https://www.theccc.org.uk/wp-content/uploads/2019/05/Net-Zero-The-UKs-contribution-to-stopping-global-warming.pdf</a>
Power Circle ( <a href="https://powercircle.org.uk/">https://powercircle.org.uk/</a> ) and Connected Response presentation: 'A new approach to the circular energy economy,' June 2020. <a href="https://powercircle.org.uk/blog-2/">https://powercircle.org.uk/blog-2/</a>
Resilience, <a href="https://www.resilience.org/stories/2020-06-08/collapse-of-civilisation-is-the-most-likely-outcome-top-climate-scientists/">https://www.resilience.org/stories/2020-06-08/collapse-of-civilisation-is-the-most-likely-outcome-top-climate-scientists/</a>
Royal Scottish Geographical Society (RSGS), 'Climate Emergency Summit 6: COVID-19 and a Green Recovery,' <a href="https://www.rsgs.org/informing-policy">https://www.rsgs.org/informing-policy</a>
The Royal Society – Keeping global Warming to 1.5oC, Challenges and Opportunities for the UK, 2018 <a href="https://royalsociety.org/-/media/policy/Publications/2018/keeping-global-warming-to-1-5-C--challenges-opportunities.pdf">https://royalsociety.org/-/media/policy/Publications/2018/keeping-global-warming-to-1-5-C--challenges-opportunities.pdf</a>
Scottish Council for Development and Industry, 'Building Scotland's Green Recovery'
Scottish Environment LINK, 'Response to Advisory Group's Call for Views,' <a href="https://www.scotlink.org/wp-content/uploads/2020/05/Response-to-Call-for-Views-FINAL.pdf">https://www.scotlink.org/wp-content/uploads/2020/05/Response-to-Call-for-Views-FINAL.pdf</a>

# Appendix 3 – Question 6 sources cited

**Table 1: Climate Change and the Protection of the Environment**

<p>Karen Turner, Antonios Katris, Gioele Figus and Ragne Low, 'Potential Wider Economic Impacts of the Energy Efficient Scotland programme,' May 2018 <a href="https://strathprints.strath.ac.uk/63819/">https://strathprints.strath.ac.uk/63819/</a></p> <p>Turner, K., Alabi, O., Low, R., &amp; Race, J. (2019). Reframing the Value Case for CCUS: Evidence on the Economic Value Case for CCUS in Scotland and the UK (Technical Report). Glasgow: University of Strathclyde, <a href="https://strathprints.strath.ac.uk/67391/">https://strathprints.strath.ac.uk/67391/</a></p> <p>Turner, K., Race, J., &amp; Sweeney, G., (2019). The economic opportunity for a large-scale CO2 management industry in Scotland. Scottish Enterprise. Available at: <a href="http://www.evaluationsonline.org.uk/evaluations/Documents.do?action=download&amp;id=937&amp;ui=basic">http://www.evaluationsonline.org.uk/evaluations/Documents.do?action=download&amp;id=937&amp;ui=basic</a></p> <p>Turner, K., Katris, A., and de Vries, F.P., (2018). Beyond Carbon Leakage: Off-Shoring of Employment and GDP in Decarbonizing International Supply Chains (Working Paper). Glasgow: University of Strathclyde. <a href="https://strathprints.strath.ac.uk/66208/">https://strathprints.strath.ac.uk/66208/</a></p> <p>Turner, K., Alabi, O., Low, R., &amp; Race, J. (2019). Reframing the Value Case for CCUS: Evidence on the Economic Value Case for CCUS in Scotland and the UK (Technical Report). Glasgow: University of Strathclyde. <a href="https://doi.org/10.17868/67391">https://doi.org/10.17868/67391</a></p>
<p>Sea Change – Climate Emergency, Jobs and Managing the Phase-out of UK Oli and Gas Extraction (2019) <a href="https://foe.scot/resource/sea-change-climate-report/">https://foe.scot/resource/sea-change-climate-report/</a></p>
<p>Stop Ecocide, <a href="https://www.stopecocide.earth/">https://www.stopecocide.earth/</a></p>
<p>UN Human Rights Special Procedures Special Rapporteur's 'Framework Principles on the Right to a Healthy Environment,' <a href="https://www.ohchr.org/Documents/Issues/Environment/SREnvironment/FrameworkPrinciplesUserFriendlyVersion.pdf">https://www.ohchr.org/Documents/Issues/Environment/SREnvironment/FrameworkPrinciplesUserFriendlyVersion.pdf</a></p>
<p>Woodland Trust's Emergency Tree Plan: <a href="https://www.woodlandtrust.org.uk/media/47692/emergency-tree-plan.pdf">https://www.woodlandtrust.org.uk/media/47692/emergency-tree-plan.pdf</a></p>
<p>Letters</p> <ul style="list-style-type: none"> <li>- CCC letter to Roseanna Cunningham MSP on 'Building a resilient recovery from the COVID-19 crisis': <a href="https://www.theccc.org.uk/wp-content/uploads/2020/05/CCC-to-Cabinet-Secretary-Roseanna-Cunningham-COVID-19-recovery.pdf">https://www.theccc.org.uk/wp-content/uploads/2020/05/CCC-to-Cabinet-Secretary-Roseanna-Cunningham-COVID-19-recovery.pdf</a></li> <li>- Letter by the Committee on Climate Change to the Cabinet Secretary for Environment, Climate Change and Land Reform</li> <li>- Letter from 200 US climate scientists to U.S Congress (May 2020), <a href="https://assets.documentcloud.org/documents/6889670/Scientist-Letter-to-Congress-8May20.pdf">https://assets.documentcloud.org/documents/6889670/Scientist-Letter-to-Congress-8May20.pdf</a></li> </ul>
<p>Best Practice Examples</p> <ul style="list-style-type: none"> <li>- Aberdeen's Net-Zero Vision and Infrastructure Plan: Item 9, <a href="https://committees.aberdeencity.gov.uk/documents/s109162/Appendix%201%20-%20Aberdeen%20Energy%20Transition%20Vision.pdf">https://committees.aberdeencity.gov.uk/documents/s109162/Appendix%201%20-%20Aberdeen%20Energy%20Transition%20Vision.pdf</a> <a href="https://committees.aberdeencity.gov.uk/documents/s109163/Appendix%202%20-%20Infrastructure%20Plan.pdf">https://committees.aberdeencity.gov.uk/documents/s109163/Appendix%202%20-%20Infrastructure%20Plan.pdf</a></li> <li>- New Zealand's announcement on \$1.1 billion investment to create 11,000 environment jobs in our regions: <a href="https://www.doc.govt.nz/news/media-releases/2020-media-releases/investment-to-create-11000-environment-jobs-in-our-regions/">https://www.doc.govt.nz/news/media-releases/2020-media-releases/investment-to-create-11000-environment-jobs-in-our-regions/</a></li> </ul>

# Appendix 3 – Question 6 sources cited

**Table 2: Sustainable Economic Models and Labour Market Adaptations**

<p>Architecture and Design Scotland,          – ‘Caring Places Report,’ <a href="https://www.ads.org.uk/wp-content/uploads/CaringPlacesReportV1.12019.pdf">https://www.ads.org.uk/wp-content/uploads/CaringPlacesReportV1.12019.pdf</a>          – ‘Planning at a Local Authority Scale,’  <a href="https://www.ads.org.uk/wp-content/uploads/Planning-at-a-Local-Authority-Scale-V1.2.pdf">https://www.ads.org.uk/wp-content/uploads/Planning-at-a-Local-Authority-Scale-V1.2.pdf</a></p>
<p><a href="https://buildingbiology.co.uk/">https://buildingbiology.co.uk/</a></p>
<p>Build Back Better          – Build Back Better in Scotland  <a href="https://bellacaledonia.org.uk/2020/05/19/build-back-better-whats-it-going-to-take-scotland/">https://bellacaledonia.org.uk/2020/05/19/build-back-better-whats-it-going-to-take-scotland/</a>          – Build Back Better UN <a href="https://www.un.org/en/un-coronavirus-communications-team/un-urges-countries-%E2%80%98build-back-better%E2%80%99">https://www.un.org/en/un-coronavirus-communications-team/un-urges-countries-%E2%80%98build-back-better%E2%80%99</a>          – Build Back Better World Economic Forum  <a href="https://www.weforum.org/agenda/2020/04/how-to-build-back-better-after-COVID-19/">https://www.weforum.org/agenda/2020/04/how-to-build-back-better-after-COVID-19/</a></p>
<p>Charles Eistenstien, ‘Climate: A New Story’</p>
<p>Club of Rome Planetary Emergency Plan  <a href="https://clubofrome.org/wp-content/uploads/2020/02/PlanetaryEmergencyPlan_CoR-4.pdf">https://clubofrome.org/wp-content/uploads/2020/02/PlanetaryEmergencyPlan_CoR-4.pdf</a></p>
<p>Community Land Scotland,          – ‘Submission to the Advisory Group on Economic Recovery,’ <a href="https://www.communitylandscotland.org.uk/2020/06/community-land-scotland-sets-out-its-vision-for-the-economic-recovery/">https://www.communitylandscotland.org.uk/2020/06/community-land-scotland-sets-out-its-vision-for-the-economic-recovery/</a>          – with Community Woodlands Association), ‘Built-in Resilience: Community Landowners’ Responses to the COVID-19 Pandemic’, <a href="https://www.communitylandscotland.org.uk/wp-content/uploads/2020/06/Built-in-Resilience-Community-Landowners-Response-to-the-COVID19-Crisis.pdf">https://www.communitylandscotland.org.uk/wp-content/uploads/2020/06/Built-in-Resilience-Community-Landowners-Response-to-the-COVID19-Crisis.pdf</a></p>
<p>The Caithness and North Sutherland Regeneration Partnership (CNSRP), ‘The North Highland ROSE (Region of Sustainability Excellence) Business Plan’ (Point of contact: Peter Faccenda CNSRP Programme Manager, E Mail: <a href="mailto:peter.faccenda@hient.co.uk">peter.faccenda@hient.co.uk</a>)</p>
<p>ECOLISE ‘Reshaping the Future – how local communities are catalysing, social, economic and ecological transformation in Europe’: <a href="https://www.ecolise.eu/wp-content/uploads/2016/02/Status-Report-on-Community-led-Action-on-Sustainability-Climate-Change-in-Europe-2019.pdf">https://www.ecolise.eu/wp-content/uploads/2016/02/Status-Report-on-Community-led-Action-on-Sustainability-Climate-Change-in-Europe-2019.pdf</a></p>
<p>EEIG, ‘Rebuilding for Resilience,’ <a href="https://www.theeeig.co.uk/">https://www.theeeig.co.uk/</a></p>
<p>The Ellen MacArthur Foundation, ‘Circular Economy’, <a href="https://www.ellenmacarthurfoundation.org/">https://www.ellenmacarthurfoundation.org/</a></p>
<p>‘EU Circular Economy Action Plan’ <a href="https://ec.europa.eu/environment/circular-economy/">https://ec.europa.eu/environment/circular-economy/</a></p>
<p>Christiana Figueres and Tom Rivett-Carnac, ‘The Future we Choose’,  <a href="https://globaloptimism.com/the-future-we-choose/#:~:text=The%20Future%20We%20Choose%20is,Figueres%20and%20Tom%20Rivett%20Carnac.&amp;text=or%20our%20finest.-,The%20Future%20We%20Choose%20is%20an%20inspiring%20manifesto%20from%20Global,and%20what%20we%20can%20do">https://globaloptimism.com/the-future-we-choose/#:~:text=The%20Future%20We%20Choose%20is,Figueres%20and%20Tom%20Rivett%20Carnac.&amp;text=or%20our%20finest.-,The%20Future%20We%20Choose%20is%20an%20inspiring%20manifesto%20from%20Global,and%20what%20we%20can%20do</a></p>
<p>Friends of the Earth</p>

# Appendix 3 – Question 6 sources cited

Table 2: Sustainable Economic Models and Labour Market Adaptations
Greenpeace
Green Economy Coalition, 'COVID-19 Ten Priority Options for a Just, Green and Transformative Economy', <a href="https://www.greeneconomycoalition.org/assets/reports/GEC-Reports/PIGE-COVID-10PriorityOptionsforaJustGreenTransformativeRecovery.pdf">https://www.greeneconomycoalition.org/assets/reports/GEC-Reports/PIGE-COVID-10PriorityOptionsforaJustGreenTransformativeRecovery.pdf</a>
The Guardian, <a href="https://www.theguardian.com/commentisfree/2020/jun/28/pandemic-britain-hunger-boris-johnson">https://www.theguardian.com/commentisfree/2020/jun/28/pandemic-britain-hunger-boris-johnson</a>
Halliday, Sandy, 'Sustainable Construction,' (second edition)
ILO, 'Guidelines for a Just Transition,' <a href="https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/documents/publication/wcms_432859.pdf">https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/documents/publication/wcms_432859.pdf</a>
IOP Science, <a href="https://iopscience.iop.org/article/10.1088/1748-9326/ab7461">https://iopscience.iop.org/article/10.1088/1748-9326/ab7461</a>
Inclusion Scotland, 'Scotland's People Led Policy', <a href="https://inclusionScotland.org/what-we-do/policy/people-led-policy/">https://inclusionScotland.org/what-we-do/policy/people-led-policy/</a>
Just Transition Commission, – 'Interim Report 2020', <a href="https://www.gov.scot/publications/transition-commission-interim-report/">https://www.gov.scot/publications/transition-commission-interim-report/</a> – Partnership Briefings: • The Just Transition Challenge in Scotland, <a href="https://foe.scot/resource/the-just-transition-challenge-in-scotland/">https://foe.scot/resource/the-just-transition-challenge-in-scotland/</a> • Publicly Owned Energy Company, <a href="http://www.parliament.scot/S5_EconomyJobsFairWork/Inquiries/EEFW-S5-18-POEC-35-JustTransitionPartnership.pdf">http://www.parliament.scot/S5_EconomyJobsFairWork/Inquiries/EEFW-S5-18-POEC-35-JustTransitionPartnership.pdf</a> • Paving the Way for a Just Transition, <a href="https://foe.scot/resource/paving-way-for-just-transition/">https://foe.scot/resource/paving-way-for-just-transition/</a>
Robin McAlpine, 'Common Weal vision for a Green New Deal for Scotland: Our Common Home Plan,' <a href="https://bit.ly/gnd7may">https://bit.ly/gnd7may</a>
Chris Morgan, 'Sustainable Renovation'
National Geographic, <a href="https://www.nationalgeographic.com/environment/urban-expeditions/green-buildings/surprising-ways-green-buildings-improve-health-sustainability/">https://www.nationalgeographic.com/environment/urban-expeditions/green-buildings/surprising-ways-green-buildings-improve-health-sustainability/</a>
<a href="https://www.nature.com/articles/s41467-020-16941-y">https://www.nature.com/articles/s41467-020-16941-y</a>
Oxfam reports on Doughnut Economics models for UK and for Scotland <a href="https://policy-practice.oxfam.org.uk/publications/oxfam-humankind-index-the-new-measure-of-scotlands-prosperity-second-results-293743">https://policy-practice.oxfam.org.uk/publications/oxfam-humankind-index-the-new-measure-of-scotlands-prosperity-second-results-293743</a>
Ann Pettifor, 'The Case for the Green New Deal', Verso, London, 2019.

# Appendix 3 – Question 6 sources cited

**Table 2: Sustainable Economic Models and Labour Market Adaptations**

Kate Raworth,

- 'The Doughnut Economy', 2012
- 'Doughnut economics: 7 ways to think like a 21st century economist'
- TED talk: 'A healthy economy should be designed to thrive not grow', <https://www.youtube.com/watch?v=Rhcrbcg8HBw>
- TED talk: Why it's time for 'Doughnut economics', <https://www.youtube.com/watch?v=1BHOflzxPjI>
- 'Amsterdam City Doughnut' <https://www.kateraworth.com/2020/04/08/amsterdam-city-doughnut/>

Dr. Philip Revell and Elizabeth Dinnie,

'Community resilience and narratives of community empowerment in Scotland' Community Development Journal, Volume 55, Issue 2, April 2020, Pages 218–236, <https://doi.org/10.1093/cdj/bsy038>

RIAS, 'The Role of the Built Environment in Creating Social, Economic and Environmentally Sustainable Places.'

RTPI

- 'Plan The World We Need: The contribution of planning to a sustainable, resilient and inclusive recovery – <https://www.rtpi.org.uk/research/2020/june/plan-the-world-we-need/>
- 'Delivering the Value of Planning' – <https://www.rtpi.org.uk/research/2016/july/delivering-the-value-of-planning/>
- 'Planning for Smart Energy' – <https://www.rtpi.org.uk/research/2019/july/planning-for-smart-energy/>
- 'Planning as 'Market Maker': How Planning is Used to Stimulate Development in Germany, France and the Netherlands' – <https://www.rtpi.org.uk/research/2015/june/planning-as-market-maker-how-planning-is-used-to-stimulate-development-in-germany-france-and-the-netherlands/>
- 'Planning and Tech: Planning for the Growth of the Technology and Advanced Manufacturing Sectors' – <https://www.rtpi.org.uk/policy/2016/november/planning-and-tech-planning-for-the-growth-of-the-technology-and-advanced-manufacturing-sectors/>
- 'A Smarter Approach to Integrated Infrastructure Planning' – <https://www.rtpi.org.uk/integratedinfrastructure>
- 'Poverty, Place and Inequality' – <https://www.rtpi.org.uk/policy/2016/february/poverty-place-and-inequality/>

Scottish Communities Climate Action Network (SCCAN),

- 'Climate Action Pioneers Project,' <https://www.scottishcommunitiescan.org.uk/climate-action-pioneers-interim-report/>
- 'Vision for Scotland' <https://www.scottishcommunitiescan.org.uk/vision-for-scotland-2024/>

Adam Smith, 'An Inquiry into the Nature and Causes of the Wealth of Nations,' 1776

Fiona Stevenson, 'Housing Fit For Purpose'

Nicola Sturgeon TED talk: 'Why governments should prioritise wellbeing' [https://www.ted.com/talks/nicola\\_sturgeon\\_why\\_governments\\_should\\_prioritize\\_well\\_being](https://www.ted.com/talks/nicola_sturgeon_why_governments_should_prioritize_well_being)

# Appendix 3 – Question 6 sources cited

**Table 2: Sustainable Economic Models and Labour Market Adaptations**

Katherine Trebeck,

- Wellbeing Economics Alliance
- 'Wellbeing Economics and Amsterdam City Doughnut,' <https://bit.ly/we25june>
- The Doughnut Economics Action Lab City Profile tool

Katherine Trebeck, Jeremy Williams, 'The Economics of Arrival', Policy Press University of Bristol

Vivid Economics, 'A UK Investment Strategy: Building Back a Resilient and Sustainable Economy,' 2020, [https://www.wwf.org.uk/sites/default/files/2020-06/UK\\_investment\\_strategy\\_resilient\\_economy.pdf](https://www.wwf.org.uk/sites/default/files/2020-06/UK_investment_strategy_resilient_economy.pdf)

What Works Scotland, 'Transforming communities? Exploring the roles of community anchor organisations in public service reform, local democracy, community resilience and social change', <http://whatworksscotland.ac.uk/publications/exploring-the-roles-of-community-anchor-organisations-in-public-service-reform/>

The Wellbeing Economy

- <https://wellbeingeconomy.org>
- <https://wellbeingeconomy.org/ten-principles-for-building-back-better-to-create-wellbeing-economies-post-COVID>
- <https://wellbeingeconomy.org/wp-content/uploads/2020/04/WEAll-Briefing-Linwood-as-a-microcosm-FINAL-1.pdf> (case study of Linwood community and their wellbeing economy)

UKGBC, 'Circular Economy Guidance for Construction Clients.'

Zero Waste Scotland <https://www.zerowastescotland.org.uk/>

- 'Designing Out Waste'
- (for Scottish Government), 'Making Things Last'

# Appendix 3 – Question 6 sources cited

**Table 2: Sustainable Economic Models and Labour Market Adaptations**

Best Practice Examples

- Amsterdam, <https://www.amsterdam.nl/en/policy/sustainability/circular-economy/>
- Architecture and Design Scotland,
  - Fraser Avenue, Inverkeithing, <https://www.ads.org.uk/wp-content/uploads/Fraser-Avenue-Case-Study.pdf>
  - The Rockfield Community Garden, <https://www.ads.org.uk/wp-content/uploads/Stalled-Spaces-Scotland-Oban-Communities-Trust-Argyll-and-Bute.pdf>
  - Woodside Multi-Storey Flats Refurbishment, <https://vimeo.com/418531581>
- Berlin, <https://circular.berlin/>
- Circular economy Iceland, <https://www.facebook.com/circulareconomyiceland/>
- Community wealth building North Ayrshire <https://www.north-ayrshire.gov.uk/Documents/Consul/Community-Wealth-Building.pdf>
- The Future of Commerce, <https://www.the-future-of-commerce.com/2020/01/08/circular-economy-examples/>
- Green Municipal Bonds, [https://www.un-ilibrary.org/international-trade-and-finance/finance-for-city-leaders-handbook\\_87836f5d-en](https://www.un-ilibrary.org/international-trade-and-finance/finance-for-city-leaders-handbook_87836f5d-en)
- London Transformation Initiative
- The 'Preston Model' of community wealth building, 'Community Wealth building – lessons from the Preston Model', <https://cles.org.uk/publications/how-we-built-community-wealth-in-preston-achievements-and-lessons/>
- Transition Edinburgh, [www.transitionedinburgh.org.uk](http://www.transitionedinburgh.org.uk)

# Appendix 3 – Question 6 sources cited

Table 3: Energy
Age Scotland, 'Housing Report 2020,': <a href="http://age.scot/housingreport2020">age.scot/housingreport2020</a>
Author not specified, 'Examining societal barriers to energy transition in South Africa – Opportunities for energy justice and solar energy?', PhD, University of St Andrews
BEIS Select Committee, 'Energy Efficiency: building towards net-zero,' <a href="https://publications.parliament.uk/pa/cm201719/cmselect/cmbeis/1730/173002.htm">https://publications.parliament.uk/pa/cm201719/cmselect/cmbeis/1730/173002.htm</a>
Biofuelwatch, 'Bioenergy with Carbon capture and storage report' (2015), <a href="https://www.biofuelwatch.org.uk/wp-content/uploads/BECCS-report-web.pdf">https://www.biofuelwatch.org.uk/wp-content/uploads/BECCS-report-web.pdf</a>
Built Environment Forum Scotland (BEFS) <ul style="list-style-type: none"> <li>- Douglas Robertson for BEFS, 'Why Flats Fall Down: Navigating shared responsibilities for their repair and maintenance,' <a href="https://www.befs.org.uk/wp-content/uploads/2020/01/BEFS-Why-Flats-Fall-Down-November-2019.pdf">https://www.befs.org.uk/wp-content/uploads/2020/01/BEFS-Why-Flats-Fall-Down-November-2019.pdf</a></li> <li>- Energy in Owner Occupied Homes Consultation Response, <a href="https://www.befs.org.uk/wp-content/uploads/2020/04/BEFS-Energy-OO-Homes-Consultation.pdf">https://www.befs.org.uk/wp-content/uploads/2020/04/BEFS-Energy-OO-Homes-Consultation.pdf</a></li> <li>- Response to AGER, <a href="https://www.befs.org.uk/wp-content/uploads/2020/05/BEFS-AGER-Response.pdf">https://www.befs.org.uk/wp-content/uploads/2020/05/BEFS-AGER-Response.pdf</a></li> <li>- Response to consultation on Developing Scotland's Circular Economy <a href="https://www.befs.org.uk/wp-content/uploads/2020/02/BEFS-Circular-Economy.pdf">https://www.befs.org.uk/wp-content/uploads/2020/02/BEFS-Circular-Economy.pdf</a></li> </ul>
Centre for Energy Policy (CEP) all research publications, policy briefs and blogs accessible via, <a href="https://www.strath.ac.uk/humanities/centreforeenergypolicy/ourpublications/">https://www.strath.ac.uk/humanities/centreforeenergypolicy/ourpublications/</a>
Citizens Advice Scotland, <ul style="list-style-type: none"> <li>- 'The Estimated Costs of Improving the Energy Efficiency of Scotland's Homes,' <a href="https://www.cas.org.uk/publications/estimated-costs-improving-energy-efficiency-scotlands-homes">https://www.cas.org.uk/publications/estimated-costs-improving-energy-efficiency-scotlands-homes</a></li> </ul>
Common Weal <ul style="list-style-type: none"> <li>- Baker, K.J., &amp; Mould, R., 'Just Warmth: Developing equitable and sustainable district heating systems in Scotland', A Common Weal policy paper, 2019, <a href="https://commonweal.scot/policy-library/just-warmth">https://commonweal.scot/policy-library/just-warmth</a></li> <li>- Baker, K.J., Morgan, G, Mould, R, &amp; Wright, I., Powering Our Ambitions: The role of Scotland's Publicly Owned Energy Company and the case for a Scottish Energy Development Agency, A Common Weal policy paper,; <a href="https://commonweal.scot/sites/default/files/2019-02/National%20Energy%20Company.pdf">https://commonweal.scot/sites/default/files/2019-02/National%20Energy%20Company.pdf</a></li> </ul>
Distributed Modular Generation, 'Statement of Feasibility' <a href="https://drive.google.com/file/d/1jhr9tSH9NRWxl-KPaXlvuF1AlivEBaYo/view?usp=drivesdk">https://drive.google.com/file/d/1jhr9tSH9NRWxl-KPaXlvuF1AlivEBaYo/view?usp=drivesdk</a>
Ecolise, Reshaping the Future – how local communities are catalysing, social, economic and ecological transformation in Europe: <a href="https://www.ecolise.eu/wp-content/uploads/2016/02/Status-Report-on-Community-led-Action-on-Sustainability-Climate-Change-in-Europe-2019.pdf">https://www.ecolise.eu/wp-content/uploads/2016/02/Status-Report-on-Community-led-Action-on-Sustainability-Climate-Change-in-Europe-2019.pdf</a>

# Appendix 3 – Question 6 sources cited

**Table 3: Energy**

Energy Action Scotland

- Keith Baker and Fraser Stewart, 'Down to the Wire: Research into support and advice services for households in Scotland reliant on electric heating', January 2018 accessed at [https://new.theclaymoreproject.com/uploads/entities/1230/files/Publications/down\\_to\\_the\\_wire\\_-\\_technical\\_report\\_-\\_eas\\_gcu\\_dr\\_fraser\\_stewart.pdf](https://new.theclaymoreproject.com/uploads/entities/1230/files/Publications/down_to_the_wire_-_technical_report_-_eas_gcu_dr_fraser_stewart.pdf)
- EAS submission to the Economy, Energy and Fair Work Committee on the Heat Networks (Scotland) Bill – [https://www.parliament.scot/S5\\_EconomyJobsFairWork/Inquiries/EEFW-S5-20-HN-07-EAS.pdf](https://www.parliament.scot/S5_EconomyJobsFairWork/Inquiries/EEFW-S5-20-HN-07-EAS.pdf)

European Academies' Science Advisory Council (EASAC) on Forest Bioenergy and Carbon Neutrality (June 2018)

[https://easac.eu/fileadmin/PDF\\_s/reports\\_statements/Carbon\\_Neutrality/EASAC\\_commentary\\_on\\_Carbon\\_Neutrality\\_15\\_June\\_2018.pdf](https://easac.eu/fileadmin/PDF_s/reports_statements/Carbon_Neutrality/EASAC_commentary_on_Carbon_Neutrality_15_June_2018.pdf)

EH Journal, <https://ehjournal.biomedcentral.com/articles/10.1186/1476-069X-8-47>

Energy Saving Trust with FAIR academics, FAIR project, <https://www.creds.ac.uk/fair/>

Food and Drink Federation, 'Decarbonisation of Heat Across the Food and Drink Manufacturing Sector,' <https://www.fdf.org.uk/publicgeneral/fdf-slr-report-decarbonising-heat-to-net-zero.pdf>

Green Finance Institute, 2020, 'Financing Energy Efficient Buildings: the path to retrofit at scale,' <https://www.greenfinanceinstitute.co.uk/news/report-financing-energy-efficient-buildings-the-path-to-retrofit-at-scale/>

The Guardian,

- <https://www.theguardian.com/environment/2019/may/18/climate-crisis-heat-is-on-global-heating-four-degrees-2100-change-way-we-live>
- <https://www.theguardian.com/environment/2020/jun/26/leading-scientist-criticises-uk-over-its-climate-record>

# Appendix 3 – Question 6 sources cited

**Table 3: Energy**

Hydrogen – various

- German National Hydrogen Strategy
- EU Hydrogen Strategy
- 'Hydrogen supply chain evidence base', Element Energy Ltd, 2018, [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/760479/H2\\_supply\\_chain\\_evidence\\_-\\_publication\\_version.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/760479/H2_supply_chain_evidence_-_publication_version.pdf)
- 'The dawn of green hydrogen/Maintaining the GCC's edge in a decarbonized world', PWC, 2020, <https://www.strategyand.pwc.com/m/en/reports/2020/the-dawn-of-green-hydrogen.html>
- 'Hydrogen Roadmap Europe', the Hydrogen Industry view, 2019, [https://www.fch.europa.eu/sites/default/files/Hydrogen%20Roadmap%20Europe\\_Report.pdf](https://www.fch.europa.eu/sites/default/files/Hydrogen%20Roadmap%20Europe_Report.pdf)
- 'The Green Hydrogen Economy in the Northern Netherlands', Noordelijke Innovation Board, 2017, <https://www.ebnn-nieuw.nl/wp-content/uploads/2019/11/NIB-BP-EN-DEF-webversie.pdf>
- 'Hydrogen Strategy for Northern Germany', Ministries of Economy and Transport of the North German Coastal States, 2019, <http://carbonneutralcities.org/wp-content/uploads/2020/02/North-German-Hydrogen-Strategy.pdf>
- 'Renewable Smart Hydrogen for a Sustainable Future', Interreg North West Europe – GenComm, 2017, <http://hydrogenireland.org/wp-content/uploads/2020/05/GenComm-SMART-H2-Positon-Paper-March-2018.pdf>.
- 'A Hydrogen Roadmap For Germany', Fraunhofer Institute, 2019, <https://www.fraunhofer.de/content/dam/zv/de/ueber-fraunhofer/wissenschaftspolitik/Positionen/2019-10-a-hydrogen-roadmap-for-germany.pdf>

IPBES (2019): Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science–Policy Platform on Biodiversity and Ecosystem Services. E. S. Brondizio, J. Settele, S. Díaz, and H. T. Ngo (editors). IPBES secretariat, Bonn, Germany.

The Lancet, 'The Lancet Countdown Report 2019', <https://www.lancetcountdown.org/2019-report/>  
The Lancet and University College London (UCL) Institute for Global Health, 'A Commission on climate change' (2008) <https://linkinghub.elsevier.com/retrieve/pii/S0140673609609223>

Lenton, Timothy, Johan Rockström, Owen Gaffney, Stefan Rahmstorf, Katherine Richardson, Will Steffen and Hans Joachim Schellnhuber (2019), 'Climate tipping points – too risky to bet against' <https://www.nature.com/articles/d41586-019-03595-0>  
<https://www.theccc.org.uk/publication/land-use-policies-for-a-net-zero-uk/#supporting-research-and-data>

National Grid, 'ESO Forward Plan' <https://www.nationalgrideso.com/document/166441/download>

New Economics Foundation, 'Re-energising Manufacturing: Industrial policy for renewables manufacturing in Scotland,' <https://neweconomics.org/2019/11/re-energising-manufacturing>

Oil Change International, The case for public ownership of the fossil fuel industry, <https://thenextsystem.org/learn/stories/case-public-ownership-fossil-fuel-industry>

# Appendix 3 – Question 6 sources cited

**Table 3: Energy**

OGUK,

- 2019 Economic Report, <https://oilandgasuk.co.uk/product/economic-report/>
- 2019 Energy Transition Report, <https://oilandgasuk.co.uk/wp-content/uploads/2019/12/OGUK-Energy-Transition-Outlook-2019.pdf>
- 2020 Business Outlooks <https://oilandgasuk.co.uk/product/business-outlook-report/>
- 2020 Production Emissions Targets Report, <https://oilandgasuk.co.uk/product/production-emissions-targets-report/>

OPITO

- Energy Skills Alliance, <https://www.energyvoice.com/opinion/207514/embracing-change-and-learning-for-the-future-an-energy-skills-alliance-for-the-21st-century/>
- Workforce Research and Reports, <https://www.opito.com/policy-and-research/research>

Opportunity North East – energy work including Energy Transition Zone, <https://www.opportunitynortheast.com/energy>

<https://www.peelenvironmental.co.uk/news-blog/2020/3/5/plans-for-uk-first-plastics-to-hydrogen-facility-at-protos-approved>

[www.powerhouseenergy.net](http://www.powerhouseenergy.net)

Scottish Communities Can, 'Vision for Scotland',

<https://www.scottishcommunitiescan.org.uk/vision-for-scotland-2024/>

Scottish Communities Climate Action Network (SCCAN)

- Climate Action Project, <https://www.scottishcommunitiescan.org.uk/climate-action-pioneers-interim-report/>
- Dr Philip Revell (SCCAN convener), 'Community resilience and narratives of community empowerment in Scotland', Philip Revell, Elizabeth Dinnie on Community Development Journal, Volume 55, Issue 2, April 2020, Pages 218–236, <https://doi.org/10.1093/cdj/bsy038>

Scottish Ecological Design Association (SEDA), 'Design Guides (Sustainable, Renovation, Deconstruction, Airtightness, Toxic Chemical Reductions in Buildings)'

# Appendix 3 – Question 6 sources cited

**Table 3: Energy**

<p>Scottish Government,          – ‘Big Climate Change Conversations’ report and findings,  <a href="https://www.gov.scot/publications/report-findings-big-climate-conversation/">https://www.gov.scot/publications/report-findings-big-climate-conversation/</a>          – <a href="https://www.scottishcommunitiescan.org.uk/climate-action-pioneers-weaving-a-new-story/">https://www.scottishcommunitiescan.org.uk/climate-action-pioneers-weaving-a-new-story/</a>          – ‘Developing regulation of energy efficiency of private sector housing (REEPS): modelling the improvements to the target stock – main research report,’  <a href="https://www.gov.scot/publications/developing-regulation-energy-efficiency-private-sector-housing-reeps-modelling-improvements-target-stock-main-research-report/">https://www.gov.scot/publications/developing-regulation-energy-efficiency-private-sector-housing-reeps-modelling-improvements-target-stock-main-research-report/</a>          – ‘Energy Efficient Scotland: Improving energy efficiency in owner occupied homes,’  <a href="https://consult.gov.scot/housing-and-social-justice/energy-efficient-scotland-owner-occupier-proposals/">https://consult.gov.scot/housing-and-social-justice/energy-efficient-scotland-owner-occupier-proposals/</a>          – ‘Scottish Greenhouse Gas Emissions,’ 2017,  <a href="https://www.gov.scot/publications/scottish-greenhouse-gas-emissions-2017/pages/3/">https://www.gov.scot/publications/scottish-greenhouse-gas-emissions-2017/pages/3/</a>          – Scottish Household Condition Survey, 2018,  <a href="https://www.gov.scot/publications/scottish-house-condition-survey-2018-key-findings/">https://www.gov.scot/publications/scottish-house-condition-survey-2018-key-findings/</a></p>
<p>Scottish Parliamentary Working Group on Tenement Maintenance,  <a href="https://www.befs.org.uk/policy-topics/buildings-maintenance-2/">https://www.befs.org.uk/policy-topics/buildings-maintenance-2/</a></p>
<p>Taylor &amp; Francis Online, <a href="https://www.tandfonline.com/doi/full/10.1080/21650020.2014.955210">https://www.tandfonline.com/doi/full/10.1080/21650020.2014.955210</a></p>
<p>Turner, Karen, Who Ultimately Pays for and Who Gains from The Electricity Network Upgrade for EVs          Karen Turner, Oluwafisayo Alabi, Christian Calvillo, Gioele Figus, Antonios Katris. May, 2019.  <a href="https://strathprints.strath.ac.uk/67741/">https://strathprints.strath.ac.uk/67741/</a></p>
<p>UK FIRES, ‘Absolute Zero Report’, commissioned by the UK government, written across 5 universities, published Nov 2019</p>
<p>Unison, ‘Warm homes into the future (2014),  <a href="https://www.unison.org.uk/content/uploads/2014/07/On-line-Catalogue225542.pdf">https://www.unison.org.uk/content/uploads/2014/07/On-line-Catalogue225542.pdf</a></p>
<p>Warmworks, 2020, <a href="https://www.warmworks.co.uk/">https://www.warmworks.co.uk/</a></p>
<p>Weghmann, V, ‘Going Public: The Failure of Energy Liberalisation,’ <a href="https://www.epsu.org/article/going-public-decarbonised-affordable-and-democratic-energy-system-europe-new-epsu-report">https://www.epsu.org/article/going-public-decarbonised-affordable-and-democratic-energy-system-europe-new-epsu-report</a></p>
<p>What Works Scotland, ‘Transforming communities? Exploring the roles of community anchor organisations in public service reform, local democracy, community resilience and social change’,  <a href="http://whatworksscotland.ac.uk/publications/exploring-the-roles-of-community-anchor-organisations-in-public-service-reform/">http://whatworksscotland.ac.uk/publications/exploring-the-roles-of-community-anchor-organisations-in-public-service-reform/</a></p>
<p>Wheeler, B. and Sharpe, R. et al (2018): Modelling the Impact of Fuel Poverty and Energy Efficiency on Health, <a href="https://www.fuelpovertylibrary.info/content/modelling-impact-fuel-poverty-and-energy-efficiency-health-1">https://www.fuelpovertylibrary.info/content/modelling-impact-fuel-poverty-and-energy-efficiency-health-1</a></p>

# Appendix 3 – Question 6 sources cited

**Table 3: Energy**

Letters

- Letter signed by 800 scientists to the EU Parliament on forest biomass (Jan 2018) ([http://www.pfpi.net/wp-content/uploads/2018/04/UPDATE-800-signatures\\_Scientist-Letter-on-EU-Forest-Biomass.pdf](http://www.pfpi.net/wp-content/uploads/2018/04/UPDATE-800-signatures_Scientist-Letter-on-EU-Forest-Biomass.pdf)):
- 'The Biomass Delusion: Position Statement on Forest Biomass Energy', signed by over 120 environmental organisations (Oct 2018) (<https://environmentalpaper.org/the-biomass-delusion/>)

**Best Practice Examples**

- Denmark buying its electrical network
- Denmark installing district heating as a social good
- Everoze case studies, <http://everoze.com/case-studies/>
- Iceland's 'Energy as a Service' model
- Local energy trading market, Orkney, <https://www.kaluza.com/first-local-energy-trading-market-launched-on-orkney-islands/>
- National Community Energy Plan, Coalfields Longannet Initiative delivered in partnership with Scottish Enterprise
- Norway banning cruise liners from World Heritage Sites
- OGA, Energy Integration Project, <https://www.ogauthority.co.uk/the-move-to-net-zero/energy-integration/>
- OGTC, North Sea Energy Vision Initiative, <https://www.theogtc.com/>

**Table 4: Agriculture and Forestry, Land Ownership and Land Management**

Climate and Land Use Alliance, 'Five Reasons the Earth's Climate Depends on Forests' (Statement from 40 scientists, Oct 2018), <https://www.climateandlandusealliance.org/scientists-statement/>

Community Land Scotland

- Submission to the Advisory Group on Economic Recovery, <https://www.communitylandscotland.org.uk/2020/06/community-land-scotland-sets-out-its-vision-for-the-economic-recovery/>
- 'Built-in Resilience: Community Landowners' Responses to the COVID-19 Pandemic', joint report with Community Woodlands Association, <https://www.communitylandscotland.org.uk/wp-content/uploads/2020/06/Built-in-Resilience-Community-Landowners-Response-to-the-COVID19-Crisis.pdf>

Davies, G.M. et al. 2016 'The role of fire in UK peatland and moorland management: the need for informed, unbiased debate', Phil. Trans. R. Soc. B 371: 20150342. <http://dx.doi.org/10.1098/rstb.2015.0342>

European Environment Agency Report No 17/2019, [https://www.eea.europa.eu/publications/marine-messages-2/at\\_download/file](https://www.eea.europa.eu/publications/marine-messages-2/at_download/file)

# Appendix 3 – Question 6 sources cited

**Table 4: Agriculture and Forestry, Land Ownership and Land Management**

Extinction Rebellion Scotland, <https://xrscotland.org/2020/02/extinction-rebellion-scotland-join-protect-the-mhoine-to-call-for-international-support-in-rejecting-space-hub-sutherland-planning-application/>

FAO, 'Fuel and Energy Use in the Fisheries Sector – Approaches, inventories and strategic implications', 2015 <http://www.fao.org/3/a-i5092e.pdf>

Farmers For Stock-Free Farming (<https://farmersforstockfreefarming.org/>) lays out the rationale for shifting to stock-free agriculture, case examples of farmers/crofters who have already transitioned, and lists 100 ways to farm stock-free. References:

- <https://science.sciencemag.org/content/360/6392/987.full#:~:text=Reducing%20food%E2%80%99s%20environmental%20impacts%20through%20producers%20and%20consumers,impacts%20up%20the%20supply%20chain.%20Processors%2C%20distributors%2C%20>
- <https://www.tabledebates.org/research-library/how-low-can-we-go>
- <https://iopscience.iop.org/article/10.1088/1748-9326/aa6cd5>
- [https://www.finder.com/uk/uk-diet-trends?\\_ga=2.159763325.1980977180.1566535152-2100258465.1565068082](https://www.finder.com/uk/uk-diet-trends?_ga=2.159763325.1980977180.1566535152-2100258465.1565068082)
- [https://www.about.sainsburys.co.uk/~/\\_media/Files/S/Sainsburys/pdf-downloads/future-of-food-08.pdf](https://www.about.sainsburys.co.uk/~/_media/Files/S/Sainsburys/pdf-downloads/future-of-food-08.pdf)
- <https://www.theguardian.com/food/2019/jul/19/plant-based-milk-the-choice-for-almost-25-of-britons-now>
- <https://atlasofthefuture.org/project/oatly/>
- <https://www.reportlinker.com/p05796153/Hemp-Milk-Market-Global-Outlook-and-Forecast.html>
- <https://animal.law.harvard.edu/wp-content/uploads/Eating-Away-at-Climate-Change-with-Negative-Emissions%E2%80%9393%E2%80%93Harwatt-Hayek.pdf>
- <https://www.foodstandards.gov.scot/business-and-industry/industry-specific-advice/farming-and-primary-production/animal-feed#whatanimalseat>
- <https://www.gov.scot/publications/final-results-june-2019-agricultural-census/>
- <https://verticalfuture.co.uk/>
- <https://www.bda.uk.com/resource/plant-based-diet.html>
- [https://apps.who.int/iris/bitstream/handle/10665/68899/WHO\\_CDS\\_CPE\\_ZFK\\_2004.9.pdf](https://apps.who.int/iris/bitstream/handle/10665/68899/WHO_CDS_CPE_ZFK_2004.9.pdf)
- <https://www.kelpcrofting.com/>
- <https://farmersforstockfreefarming.org/>
- <https://www.gov.scot/publications/scottish-greenhouse-gas-emissions-2017/>
- <https://www2.gov.scot/Topics/Statistics/Browse/Agriculture-Fisheries/Publications/FBI>
- <https://static1.squarespace.com/static/585c3439be65942f022bbf9b/t/5d7fe0e83d119516bfc0017e/1568661791363/RethinkX+Food+and+Agriculture+Report.pdf>

Flanagan, N., Wang, H., Winton, S., Richardson, C. (2020). 'Low-severity fire as a mechanism of organic matter protection in global peatlands: thermal alteration slows decomposition. Duke Research Data Repository' <https://doi.org/10.7924/r4s46nm6p>

# Appendix 3 – Question 6 sources cited

**Table 4: Agriculture and Forestry, Land Ownership and Land Management**

Food and Agriculture Organization of the United Nations Rome, 'Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication,' 2015, <http://www.fao.org/3/a-i4356en.pdf>

Food Foundation

Harwatt H & Hayek M, 'Eating Away at Climate Change with Negative Emissions', 2019, Harvard University, <https://animal.law.harvard.edu/wp-content/uploads/Eating-Away-at-Climate-Change-with-Negative-Emissions%E2%80%93Harwatt-Hayek.pdf>

Highland Council and Highland & Moray FLAG, 'Highland Region Aquaculture and Fisheries Socio-Economic Study: Socio-economic profile and Importance', 2019

IPCC Special Report on the Ocean and Cryosphere in a Changing Climate, 2019, [https://www.ipcc.ch/site/assets/uploads/sites/3/2019/09/SROCC\\_SPM\\_HeadlineStatements.pdf](https://www.ipcc.ch/site/assets/uploads/sites/3/2019/09/SROCC_SPM_HeadlineStatements.pdf)

International Institute for Environmental Development, Arthur, R, Heyworth, S, Pearce, J and Sharkey, W, 'The cost of harmful fishing subsidies', (2019), IIED Working Paper., 2019 [https://www.researchgate.net/publication/333104744\\_The\\_cost\\_of\\_harmful\\_fishing\\_subsidies](https://www.researchgate.net/publication/333104744_The_cost_of_harmful_fishing_subsidies)

IUCN

– Position statement Peatlands and Trees, 2020: <https://www.iucn-uk-peatlandprogramme.org/sites/default/files/2020-04/IUCN%20UK%20PP%20Peatlands%20and%20trees%20position%20statement%202020.pdf>

– Peatland strategy, 2018: [https://www.iucn-uk-peatlandprogramme.org/sites/default/files/2019-07/2018\\_UK%20Peatland%20Strategy\\_DIGITAL\\_1.pdf](https://www.iucn-uk-peatlandprogramme.org/sites/default/files/2019-07/2018_UK%20Peatland%20Strategy_DIGITAL_1.pdf)

Joseph Rowntree Foundation

Journal of Cleaner Production, 'Combined climate and nutritional performance of seafoods', Volume 230, 1 September 2019, Pages 402–411, <https://www.sciencedirect.com/science/article/pii/S0959652619313162>

Work at Knepp in Sussex, Trees for Life in the Highlands, and Borders Forest Trust in the South of Scotland.

Landworkers Alliance, 'Agricultural effects on emissions', [https://landworkersalliance.org.uk/wp-content/uploads/2018/10/Farming-Food-and-the-Climate-Crisis\\_v2.pdf](https://landworkersalliance.org.uk/wp-content/uploads/2018/10/Farming-Food-and-the-Climate-Crisis_v2.pdf)

Marine Scotland, 'Exploration of Optimisation Modelling in the Scottish Nephrops Fleet', Policy Brief 2020, <https://www.gov.scot/binaries/content/documents/govscot/publications/research-and-analysis/2020/01/exploration-optimisation-modelling-scottish-nephrops-fleet-policy-brief/documents/marine-scotland-exploration-optimisation-modelling-scottish-nephrops-fleet-policy-brief/marine-scotland-exploration-optimisation-modelling-scottish-nephrops-fleet-policy-brief/govscot%3Adocument/marine-scotland-exploration-optimisation-modelling-scottish-nephrops-fleet-policy-brief.pdf>

# Appendix 3 – Question 6 sources cited

Table 4: Agriculture and Forestry, Land Ownership and Land Management
NINA, Duncan Halley, Presentation to Scottish Parliament on Southwest Norway model, <a href="https://www.nina.no/Portals/NINA/Bilder%20og%20dokumenter/Nyheter/Engelsk/Landscape%20history%20and%20land%20use%20in%20SW%20Norway%20-%20Duncan%20Halley%20.pdf">https://www.nina.no/Portals/NINA/Bilder%20og%20dokumenter/Nyheter/Engelsk/Landscape%20history%20and%20land%20use%20in%20SW%20Norway%20-%20Duncan%20Halley%20.pdf</a>
Monbiot's articles on sheep farming
Professor William Moomaw: 'Intact Forests in the United States: Proforestation Mitigates Climate Change and Serves the Greatest Good' (June 2019), <a href="https://www.frontiersin.org/articles/10.3389/ffgc.2019.00027/full">https://www.frontiersin.org/articles/10.3389/ffgc.2019.00027/full</a>
Nature Scot, 'Muirburn Code', <a href="https://www.nature.scot/professional-advice/land-and-sea-management/managing-land/upland-and-moorland/muirburn-code">https://www.nature.scot/professional-advice/land-and-sea-management/managing-land/upland-and-moorland/muirburn-code</a>
NWWAC, 'UK Scallop Management Conference report', 2019 <a href="http://www.nwwac.org/_fileupload/Papers%20and%20Presentations/2019/Madrid_2019/FINAL_UK%20scallop%20management%20conference_summary%20report_Mar19.pdf">http://www.nwwac.org/_fileupload/Papers%20and%20Presentations/2019/Madrid_2019/FINAL_UK%20scallop%20management%20conference_summary%20report_Mar19.pdf</a>
Open Seas, 'Blog: Our Seas will change – what should we do about it?', <a href="https://www.openseas.org.uk/news/our-seas-will-change-what-should-we-do-about-it/">https://www.openseas.org.uk/news/our-seas-will-change-what-should-we-do-about-it/</a>
Perrine and Charles Herve-Gruyer, 'Miraculous Abundance: One Quarter Acre, Two French Farmers, and Enough Food to Feed the World' (Paperback), <a href="https://www.fermedubec.com/english/">https://www.fermedubec.com/english/</a>
Reforestation Scotland
Revive Coalition for Grouse Moor Reform (general research, so specific piece mentioned)
SAGS, Growing Scotland 2007; Grow your own allotment site 2017; Plan to Grow (2019) <a href="http://www.sags.org.uk">www.sags.org.uk</a>
The Scotsman, <a href="https://www.scotsman.com/news/scottish-news/extinction-rebellion-condemn-scottish-spaceport-plans-reckless-1995286">https://www.scotsman.com/news/scottish-news/extinction-rebellion-condemn-scottish-spaceport-plans-reckless-1995286</a>
Scottish Creel Fishermens Federation, 'Correcting The Misallocation Of Nephrops Stocks In Scottish Inshore Waters: Untapping A Vast Economic (And Environmental) Potential,' <a href="http://www.scottishcreelfishermensfederation.co.uk/report/CORRECTING%20THE%20MISALLOCATION%20OF%20%20NEPHROPS%20STOCKS%20-%20SH2.pdf">http://www.scottishcreelfishermensfederation.co.uk/report/CORRECTING%20THE%20MISALLOCATION%20OF%20%20NEPHROPS%20STOCKS%20-%20SH2.pdf</a>
Scottish Government <ul style="list-style-type: none"> <li>- 'Future of Fisheries Management, National Discussion Paper', 2019 <a href="https://www.gov.scot/publications/national-discussion-paper-future-fisheries-management-scotland/">https://www.gov.scot/publications/national-discussion-paper-future-fisheries-management-scotland/</a></li> <li>- 'Allotments, guidance for local authorities' <a href="https://www.gov.scot/publications/part-9-community-empowerment-scotland-act-2015-allotments-guidance-local-authorities-section-119-duty-prepare-food-growing-strategy/pages/11/">https://www.gov.scot/publications/part-9-community-empowerment-scotland-act-2015-allotments-guidance-local-authorities-section-119-duty-prepare-food-growing-strategy/pages/11/</a></li> </ul>

# Appendix 3 – Question 6 sources cited

**Table 4: Agriculture and Forestry, Land Ownership and Land Management**

Scottish Natural Heritage, 'Assessment of carbon budgets and potential blue carbon stores in Scotland's coastal and marine environment', Report No 761, <https://www.nature.scot/sites/default/files/Publication%202014%20-%20SNH%20Commissioned%20Report%20761%20-%20Assessment%20of%20carbon%20budgets%20and%20potential%20blue%20carbon%20stores%20in%20Scotland%27s%20coastal%20and%20marine%20environment.pdf>

SEDA

- Design guides, <https://www.seda.uk.net/design-guides>
- Design guide on retrofitting, <https://static1.squarespace.com/static/5978a800bf629a80c569eef0/t/5beca5f021c67c2280e66de3/1542235691571/Guide+to+Domestic+Retrofit.pdf>

Sustainable Inshore Fisheries Trust, 'Regional Inshore Fishery Groups: Policy, Practice And Problems', 2018 <https://www.sift-uk.org/wp-content/uploads/2019/03/The-Reform-of-RIFGs-SIFT-December-2018.pdf>

Isabella Tree, 'Rewilding'

The Vegan Society, 'Grow Green: Solutions for the Farm of the Future', 2017, [https://www.vegansociety.com/sites/default/files/Grow%20Green%202%20Full%20Report\\_0.pdf](https://www.vegansociety.com/sites/default/files/Grow%20Green%202%20Full%20Report_0.pdf)

Woodland Crofts, [www.woodlandcrofts.org](http://www.woodlandcrofts.org)

Woodland Trust

WWF

**Best Practice Examples**

- <http://www.caledonia.org.uk/socialland/earthsha.htm>
- <https://scotlandthebread.org/>
- <https://www.tarland.org.uk/community/tarland-development-group/tarland-community-garden/>
- <http://www.turrielfieldveg.co.uk/>
- <https://www.vitalveg.co.uk/about-vital-veg>

# Appendix 3 – Question 6 sources cited

<b>Table 5: Transport</b>
Cycling Scotland
Glasgow Connectivity Commission Report
Ice Bike, <a href="https://www.icebike.org/car-free-cities/">https://www.icebike.org/car-free-cities/</a>
Living Streets
<p>Paths for All</p> <ul style="list-style-type: none"> <li>- Call for ideas ahead of National Planning Framework 4 <a href="https://www.pathsforall.org.uk/news/news-post/call-for-ideas">https://www.pathsforall.org.uk/news/news-post/call-for-ideas</a></li> <li>- National Walking Strategy and Action Plan <a href="https://www.pathsforall.org.uk/mediaLibrary/other/english/final-walking-strategy-action-plan-10-sept-2019.pdf">https://www.pathsforall.org.uk/mediaLibrary/other/english/final-walking-strategy-action-plan-10-sept-2019.pdf</a></li> <li>- 'New housing is failing people and forcing car dependency' <a href="https://www.pathsforall.org.uk/news-post/new-housing-is-failing-people-and-forcing-car-dependency">https://www.pathsforall.org.uk/news-post/new-housing-is-failing-people-and-forcing-car-dependency</a></li> <li>- 'Public Opinion Survey 2019,' <a href="https://www.pathsforall.org.uk/resource/public-opinion-survey-2018">https://www.pathsforall.org.uk/resource/public-opinion-survey-2018</a></li> <li>- 'Scotland's perfect storm of opportunity' <a href="https://www.pathsforall.org.uk/blog/blog-post/ian-findlay-cbe-scotlands-perfect-storm-of-opportunity">https://www.pathsforall.org.uk/blog/blog-post/ian-findlay-cbe-scotlands-perfect-storm-of-opportunity</a></li> </ul>
National Transport Strategy
OU Open Road Programme, Dumfries and Galloway, Report to the Scottish Government (Final Report February 2004)
Poverty and Inequality Commission, 'Transport and Poverty in Scotland,' 2019 <a href="https://povertyinequality.scot/publication/transport-and-poverty-in-scotland-report-of-the-poverty-and-inequality-commission/">https://povertyinequality.scot/publication/transport-and-poverty-in-scotland-report-of-the-poverty-and-inequality-commission/</a>
Research Gate, 'The Effect of Cycle Lanes on Cycling Numbers and Safety', <a href="https://www.researchgate.net/publication/322160029_">https://www.researchgate.net/publication/322160029_</a>
<p>Sustainable Aviation,</p> <ul style="list-style-type: none"> <li>- 'Decarbonisation Road-Map' report, <a href="https://www.sustainableaviation.co.uk/wp-content/uploads/2020/02/SustainableAviation_CarbonReport_20200203.pdf">https://www.sustainableaviation.co.uk/wp-content/uploads/2020/02/SustainableAviation_CarbonReport_20200203.pdf</a></li> <li>- 'Sustainable Aviation Road-Map'</li> </ul>
STSG, <a href="https://stsg.org/">https://stsg.org/</a>
Sustrans, 'Our Response to the UK Government's Decarbonising Transport Report,' <a href="https://www.sustrans.org.uk/our-blog/news/2020/march/our-response-to-the-uk-government-s-decarbonising-transport-report/">https://www.sustrans.org.uk/our-blog/news/2020/march/our-response-to-the-uk-government-s-decarbonising-transport-report/</a>

# Appendix 3 – Question 6 sources cited

**Table 5: Transport**

Transform Scotland,

- <http://transformscotland.org.uk/wp/wp-content/uploads/2020/06/EEFW-Committee-Transform-Scotland-evidence-2020-06-29.pdf>
- 'Creating Walkable Communities in Scotland'  
<http://transformscotland.org.uk/wp/wp-content/uploads/2019/02/Creating-walkable-communities-in-Scotland-Paths-for-All-briefing-for-Transform-Scotland-2018-12-11.pdf>
- 'Just Recovery: reversing the lockdown inequalities'  
<http://transformscotland.org.uk/blog/2020/06/04/just-recovery-reversing-the-lockdown-inequalities/>

Transport for Quality of Life

- 'Building a world-class bus system for Britain' (2016) [https://www.transportforqualityoflife.com/u/files/160120\\_Building\\_a\\_world-class\\_bus\\_system\\_for\\_Britain\\_FINAL1.pdf](https://www.transportforqualityoflife.com/u/files/160120_Building_a_world-class_bus_system_for_Britain_FINAL1.pdf)
- 'A Radical Transport Response to the Climate Emergency', 2019  
<https://www.transportforqualityoflife.com/u/files/8%20A%20Radical%20Transport%20Response%20to%20the%20Climate%20Emergency.pdf>

Transport Scotland

- 'National Transport Strategy, 2020'  
<https://www.transport.gov.scot/our-approach/national-transport-strategy/>
- 'Scottish Transport Statistics' no 38, 2019, <https://www.transport.gov.scot/publication/scottish-transport-statistics-no-38-2019-edition/chapter-1-road-transport-vehicles/>
- 'Strategic Transport Projects Review 2'  
<https://www.transport.gov.scot/our-approach/strategy/strategic-transport-projects-review-2/>

UK Government, 'Decarbonising Transport, Setting the Challenge, Department for Transport', 2019, [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/876251/decarbonising-transport-setting-the-challenge.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/876251/decarbonising-transport-setting-the-challenge.pdf)

# Appendix 3 – Question 6 sources cited

Table 6: Social Justice and Equality
Brown, H. and Nading, A.M. (2019) 'Introduction: human animal health in medical anthropology. Medical anthropology quarterly', 33(1), <a href="https://anthrosource.onlinelibrary.wiley.com/doi/full/10.1111/maq.12488">https://anthrosource.onlinelibrary.wiley.com/doi/full/10.1111/maq.12488</a>
Charles Eisenstein, 'Climate: A New Story'
Citizens Advice Scotland, – 'Bad Company,' <a href="https://www.cas.org.uk/publications/bad-company">https://www.cas.org.uk/publications/bad-company</a> – 'Response to Advisory Group on Economic Recovery,' <a href="https://www.cas.org.uk/publications/citizens-advice-scotlands-submission-advisory-group-economic-recovery">https://www.cas.org.uk/publications/citizens-advice-scotlands-submission-advisory-group-economic-recovery</a> – 'Speaking Up: Understanding fuel poverty support needs,' <a href="https://www.cas.org.uk/publications/speaking-understanding-fuel-poverty-support-needs">https://www.cas.org.uk/publications/speaking-understanding-fuel-poverty-support-needs</a>
Commonweal – 'Carbon Free, Poverty Free' report <a href="https://commonweal.scot/new-policy-paper-carbon-free-poverty-free">https://commonweal.scot/new-policy-paper-carbon-free-poverty-free</a> – 'Our Common Home Plan' <a href="https://commonweal.scot/policy-library/common-home-plan">https://commonweal.scot/policy-library/common-home-plan</a> – 'Rebuild: Back to Better' – 'Resilient Scotland' report <a href="https://commonweal.scot/resilience">https://commonweal.scot/resilience</a>
Greener Practice <a href="https://www.greenerpractice.co.uk/">https://www.greenerpractice.co.uk/</a>
Caroline Hickman, 'The Rise of Eco-Anxiety', University of Bath (2019), <a href="https://www.bath.ac.uk/announcements/rise-of-eco-anxiety-affecting-more-and-more-children-says-bath-climate-psychologist/">https://www.bath.ac.uk/announcements/rise-of-eco-anxiety-affecting-more-and-more-children-says-bath-climate-psychologist/</a>
Rob Hopkins, 'What If?'
Humanitarian Disarmament, 'An Open Letter on COVID-19 and Humanitarian Disarmament' <a href="https://humanitarianandisarmament.org/COVID-19-2/open-letter-on-COVID-and-humanitarian-disarmament">https://humanitarianandisarmament.org/COVID-19-2/open-letter-on-COVID-and-humanitarian-disarmament</a>
ICAN (the International Campaign to Abolish Nuclear Weapons), <a href="https://www.icanw.org/the_treaty">https://www.icanw.org/the_treaty</a>
Instagram on Racial Inequality and Climate Change, <a href="https://www.instagram.com/tv/CB9QabMn-7T/?igshid=4c0a5b0ybvs">https://www.instagram.com/tv/CB9QabMn-7T/?igshid=4c0a5b0ybvs</a>
IPPR's Economic Justice Commission
The Jimmy Reid Foundation, 'Trident and its Successor Programme' (2016)
Medact – <a href="https://www.medact.org/project/COVID-19-response/">https://www.medact.org/project/COVID-19-response/</a> – <a href="https://www.medact.org/2019/resources/briefings/patients-not-passports/">https://www.medact.org/2019/resources/briefings/patients-not-passports/</a> – Webinar: Arms trade and COVID-19, <a href="https://www.youtube.com/watch?v=8ltMELsLxlk&amp;feature=youtu.be">https://www.youtube.com/watch?v=8ltMELsLxlk&amp;feature=youtu.be</a>
Nature, <a href="https://www.nature.com/articles/s41467-020-16941-y">https://www.nature.com/articles/s41467-020-16941-y</a>

# Appendix 3 – Question 6 sources cited

<b>Table 6: Social Justice and Equality</b>
NHS Scotland, 'Health inequalities: What are they? How do we reduce them?', 2015 <a href="http://www.healthscotland.scot/media/1086/health-inequalities-what-are-they-how-do-we-reduce-them-mar16.pdf">http://www.healthscotland.scot/media/1086/health-inequalities-what-are-they-how-do-we-reduce-them-mar16.pdf</a>
Nuke Investment Scotland, 'Don't Bank on the Bomb' <a href="https://nukedivestmentscotland.org/">https://nukedivestmentscotland.org/</a>
Physicians for Social Responsibility, <a href="https://www.psr.org/issues/nuclear-weapons-abolition/disarmament-public-health/">https://www.psr.org/issues/nuclear-weapons-abolition/disarmament-public-health/</a>
Scottish Government, – 'No One Left Behind Strategy,' <a href="https://www.gov.scot/publications/one-left-behind-next-steps-integration-alignment-employability-support-scotland/">https://www.gov.scot/publications/one-left-behind-next-steps-integration-alignment-employability-support-scotland/</a> – 'Every Child, Every Chance; Tackling Child Poverty Action Plan 2018–22', <a href="https://www.gov.scot/publications/child-chance-tackling-child-poverty-delivery-plan-2018-22/">https://www.gov.scot/publications/child-chance-tackling-child-poverty-delivery-plan-2018-22/</a>
Scottish Greens: Green New Deal , <a href="https://greens.scot/sites/default/files/GreenNewDeal-Web.pdf">https://greens.scot/sites/default/files/GreenNewDeal-Web.pdf</a>
Wainwright, Hilary (2020) 'Swords into ploughshares; planes into ventilator parts, Red Pepper. <a href="https://www.redpepper.org.uk/swords-into-ploughshares/">https://www.redpepper.org.uk/swords-into-ploughshares/</a>
Letters – Just and Green Recovery Letter to the First Minister, signed by 82 different civil society organisations. <a href="https://foe.scot/resource/just-green-recovery-letter-first-minister/">https://foe.scot/resource/just-green-recovery-letter-first-minister/</a>
<b>Best Practice Examples</b> – Lambeth GP Food Co-op, <a href="http://lambeth.gpfoodcoop.org.uk/">http://lambeth.gpfoodcoop.org.uk/</a>



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

© Crown copyright 2021

**OGL**

This publication is licensed under the terms of the Open Government Licence v3.0 except where otherwise stated. To view this licence, visit [nationalarchives.gov.uk/doc/open-government-licence/version/3](https://nationalarchives.gov.uk/doc/open-government-licence/version/3) or write to the Information Policy Team, The National Archives, Kew, London TW9 4DU, or email: [psi@nationalarchives.gsi.gov.uk](mailto:psi@nationalarchives.gsi.gov.uk).

Where we have identified any third party copyright information you will need to obtain permission from the copyright holders concerned.

This publication is available at [www.gov.scot](http://www.gov.scot)

Any enquiries regarding this publication should be sent to us at  
The Scottish Government  
St Andrew's House  
Edinburgh  
EH1 3DG

ISBN: 978-1-80004-460-9 (web only)

Published by The Scottish Government, January 2021

Produced for The Scottish Government by APS Group Scotland, 21 Tennant Street, Edinburgh EH6 5NA  
PPDAS805186 (01/21)

W W W . G O V . S C O T