

**RURAL
AND POST-
INDUSTRIAL
PERSPECTIVES
ON THE JUST
TRANSITION**

Participatory futures in Dumfries and
Fife

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We are the RSA. The royal society for arts, manufactures and commerce. Where world-leading ideas are turned into world-changing actions. We're committed to a world that is resilient, rebalanced and regenerative, where everyone can fulfil their potential.

The RSA has been at the forefront of significant social impact for over 260 years. Our proven change process, rigorous research, innovative ideas platforms and unique global network of changemakers, work collectively to enable people, places and the planet to flourish.

We invite you to be part of this change. Join our community. Together, we'll unite people and ideas in collective action to create opportunities to regenerate our world.



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About the Scottish Government's ESJTP

The Scottish Government has committed to regional and sectoral just transition plans. The Energy Strategy and Just Transition Plan (ESJTP) is the first of these. It will provide a whole system vision for Scotland's future energy system, defining a pathway that enables us to meet our legally binding net zero greenhouse gas emissions targets and secure a fair and just transition. A whole system approach to energy means taking a view of not just the energy system and its components, but how those components fit together and interact with one another. This approach can help to ensure that we maximise benefits, avoid unintended consequences, and minimise costs from our transition to net zero.

We define our ambitions as:

Our mission

Enabling people, places and the planet to flourish.

Our vision

A world that is resilient, rebalanced and regenerative, where everyone can fulfil their potential.

How we deliver our work

We unite people and ideas in collective action to create opportunities to regenerate our world.

We are

A unique global network of changemakers enabling people, places and the planet to flourish.

To develop the Energy Strategy and Just Transition Plan, we are taking a range of approaches to build agreement among citizens, places, businesses and workers about priorities and where we most need to see action. The variety of approaches reflects our need to hear from a wide range of different groups, often with very different levels of background knowledge and/or opportunities to get involved. For example, we want to create opportunities to hear the thoughts and perceptions of workers and communities who will be impacted by the changing energy system but are not normally linked into climate/energy policy discussions. And of course, we need to gather energy industry and technical expertise and views. Energy industry, environmental, business, trades union voices, local authorities and delivery agencies will all be fundamental, but our approach recognises that many more voices need to be heard.

Executive summary

Participatory futures approaches aim to involve a diverse range of citizens in exploring and shaping different possible futures. These approaches can help to better incorporate lived experience into decision making and help build legitimacy in just transition planning by giving a voice to communities that will be most impacted by change.

In partnership with the Scottish Government, the RSA hosted workshops in Fife and Dumfries to explore how changes to the energy system could impact these areas and bring together citizens to collectively imagine better futures. This report details our workshop methodology, key findings and their relevance for the Scottish Government's Energy Strategy and Just Transition Plan, and a series of recommendations for how to involve communities in just transition planning.

Each workshop was held as a full day, in-person workshop and we worked in partnership with local institutions and community organisations to recruit participants, with the aim of convening a wide range of stakeholders, including citizens and workers whose voices are not usually heard in policy dialogues.

We had three main aims which were crucial in informing the design of our workshops. We wanted to build participants' understanding of issues relating to a changing energy system. We wanted to surface different perspectives, opportunities, and concerns, rooted in lived experience, to inform the ESJTP. Lastly, we wanted to create an inclusive and engaging experience for participants, in order to help build connections across communities while giving people an opportunity to have fun and think differently about their local area.

Each workshop consisted of three main activities:

- **Rooting in place:** an active listening exercise designed to surface participants' perceptions of local needs, ecology, history, assets and opportunities – and their experience of past industrial transitions.
- **Exploring drivers of change:** a foresight exercise that aims to identify and explore the implications of new technologies and societal changes for the local area and encourage participants to think from multiple perspectives, including local wildlife and natural ecosystems.
- **Creative visioning:** reflective group discussions on the changes needed for a just transition and a creative activity based on The Thing From The Future game, which asked participants to produce speculative newspaper headlines, postcards, and objects from a desirable future.

Levenmouth in Fife is a post-industrial community that has been impacted by the decline of coal mining. While our engagement Dumfries offers an opportunity to understand what a just transition could look like for rural communities in Scotland.

To help build participants' understanding of issues that will shape the just transition in Scotland, we developed a set of driver cards that simplified new technologies and other social, economic, environmental, and political drivers of change – based on strategy documents, detailed policy positions and other inputs to the Scottish Government's ESJTP. The workshop discussions then focused on modal transport shifts, domestic heating innovations and building retrofit and renewable energy production.

Figure 1: Key findings from exploring drivers of change activity

Domain	Key findings
Renewable energy	<ul style="list-style-type: none"> • Broad support for greater renewable energy production but scepticism of whether communities will directly benefit (eg perception that local job creation will be limited). • A perceived need for greater incentives and investment to support oil and gas workers to retrain. • Concerns about the concentration of onshore wind turbines in Dumfries, and negative impacts on the landscape, noise and light pollution and road infrastructure, as well as controversial planning rules. • Support for the development of a wider range of forms of renewable or low-carbon energy projects, including geothermal, tidal, and nuclear power. • Interest in smaller scale forms of renewable energy production (eg individual wind turbines and solar panels), and business models that provide communities with direct financial compensation for exporting renewable electricity to the grid.
Transport	<ul style="list-style-type: none"> • Excitement for how modal transport shifts to enable 20-minute neighbourhoods,¹ which could improve quality of life, create new economic opportunities, including tourism, and support the transition to a circular economy. • However, several barriers to modal transport shifts include a lack of public transport infrastructure, which has led to communities feeling increasingly isolated. • Recent investments in transport infrastructure need to be more tailored to the needs of communities (eg better intra-rural bus networks). • Concerns around electric vehicles (EVs) for individual use centred around current costs and affordability.
Domestic heating	<ul style="list-style-type: none"> • Strong support for improvements to domestic heating systems, given challenges with the cost of living crisis. • Perceived lack of agency for private renters and social housing tenants to make these improvements and frustration with a lack of action or support from landlords. • High upfront costs identified as a barrier to home improvements and perceived issues with the structure of current financial incentives. • Recommendations that local authorities play a greater role in regulating and standardising improvements to protect homeowners and tenants. • In Dumfries there is a unique opportunity to reuse local sheep wool for insulating homes, reducing waste, and benefitting the local economy.

¹ 20-minute neighbourhoods are places that are designed to enable residents to meet their day-to-day needs within a 20-minute walk from their home; through access to safe walking and cycling routes, or by public transport. For more information see: www.climatechange.org.uk/research/projects/20-minute-neighbourhoods-in-a-scottish-context/

The visioning section of the workshop was designed to take participants on a journey towards building desirable futures that were related to the changes that had been explored in earlier discussions. While some speculative artefacts focused on a distinct theme, many artefacts provided a holistic representation of the future, depicting worlds that bring together new technologies, changes to the natural environment, and changes to ways of living. The artefacts included:

- Artefacts depicting community owned and controlled renewable energy projects eg unlimited free green hydrogen (Fife).
- A whole house energy management system using smart technology (Dumfries).
- Sustainable public transport infrastructure including a tram (Dumfries) and solar powered buggies (Fife).
- Postcards imagining a green Fife, clear blue rivers and the return of whales (Fife).
- A newspaper headline imagining that all consumer products (eg TVs) are produced locally using recycled materials (Fife).
- Artefacts imagining how communities will adapt to rising sea levels and other direct impacts of climate change (Dumfries).

These visions depicted by citizens can help in understanding how both day-to-day life and wider systems could look in a future where a just transition has been achieved, which is a crucial starting point in understanding exactly what policies, behaviours and systems need to change. For example, many of these artefacts depict the types of technological innovation that are more socially desirable. While other artefacts highlight a closer and more respectful relationship with nature and the need to emphasise different economic development strategies, including those related to ecotourism or the circular economy.

Across our engagement we found that communities have a clear desire to be more involved in decision making and practical action related to the just transition, but feel a lack of agency at present. This report also puts forward a series of recommendations for how to ensure effective community engagement in just transition planning. These recommendations are informed by our impact evaluation and wider learnings from workshop design and delivery.

Figure 2: Key takeaways for just transition community engagement

Practice	Recommendations
Partnerships and recruitment	<ul style="list-style-type: none">• Partner with local institutions and community organisations to tap into existing networks, encourage local capability building and establish shared ownership.• Provide flexible incentives to enable diverse participation and reward people for their time, effort, and contribution.• Scale wide-reaching community engagement activities that are hosted outside of formal workshop contexts (eg local community events and festivals).
Designing participatory futures	<ul style="list-style-type: none">• Build in time for ongoing, sustained, and meaningful engagement to develop trusted relationships with communities and allow for greater input into just transition planning (eg feedback on detailed policy positions).• Experiment with immersive and imaginative approaches to facilitate deeper engagement (eg serious games, creative storytelling, theatre and performance).• Embed regenerative perspectives into participatory futures, by inviting people to think longer term and consider the interdependency of humans, other living beings and ecosystems.• Explore ways to open-source tools and resources to support community groups to conduct their own participatory futures workshops.
Impact evaluation	<ul style="list-style-type: none">• Adopt a wider range of approaches to evaluate the process and impact of engagement to explore, in greater depth, the contribution of participatory futures activities to the observed outcomes.• Collaborate with participatory and regenerative futures practitioners to define a shared evaluation framework.

Introduction

From more renewable electricity being produced by wind turbines to a shift from gas boilers to heat pumps in our homes, the shift to net zero will require rapid transformation across the economy and society, impacting our jobs, the way we live, and the places we live in. The notion of a 'just transition' was incorporated into the 2015 Paris Agreement as a way of signalling the importance of maximising positive social impacts of climate policies for workers and communities and minimising any negative repercussions.² The Scottish Government defines a just transition as a way to support "a net zero and climate resilient economy in a way that delivers fairness and tackles inequality and injustice".³

Scotland has already taken world-leading action by embedding just transition into domestic climate change legislation and committing to a series of just transition plans across different sectors. Later this year, the Scottish Government will publish a new Energy Strategy and Just Transition Plan for consultation. This will provide a vision and route map for Scotland's future energy system, looking at the different ways energy generation, distribution and demand could fit together in a net zero Scotland.⁴

In partnership with the Scottish Government, the RSA hosted a series of participatory futures workshops over the summer of 2022. The workshops aimed to input into this work by bringing together diverse groups of citizens to explore how changes to the energy system could impact communities, collectively imagine what a just transition could look like for their local area and identify priority areas for action.

We held our workshops in two regions of Scotland that are likely to be significantly impacted by the transition to net zero – but which will experience this transition very differently. Levenmouth in Fife is a post-industrial community that has previously been impacted by the decline of coal mining, while our engagement in Dumfries offers an opportunity to better understand what a just transition could look like for rural communities. The RSA's event series complemented other engagement that the Scottish Government held across the country, including in major energy hubs such as Aberdeen.

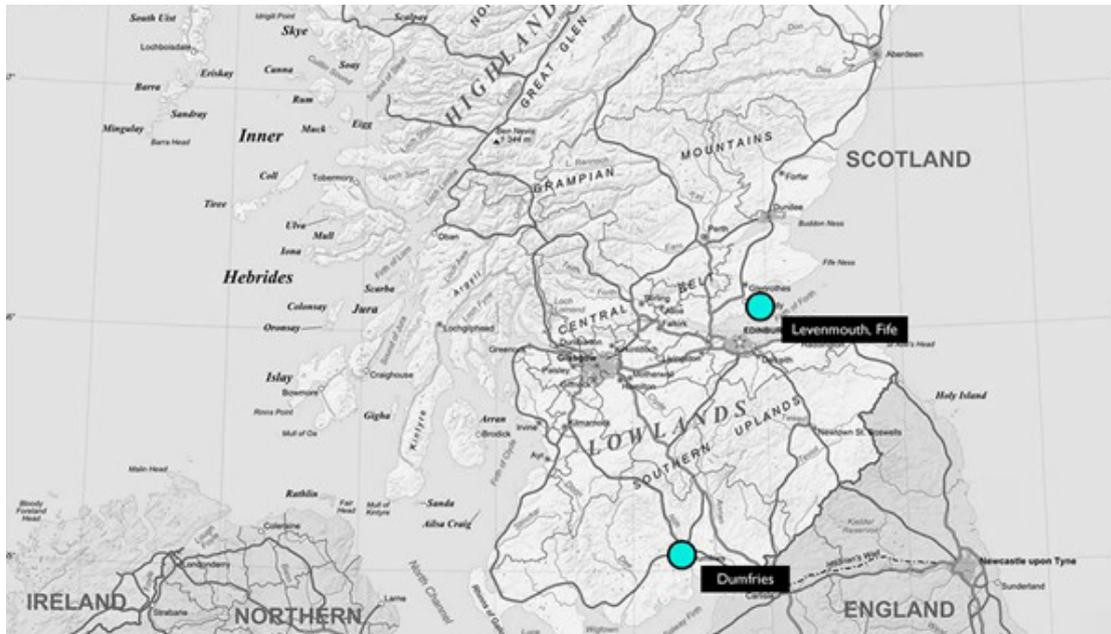
2 UNFCCC (2020) Just transition of the workforce, and the creation of decent work and quality jobs [online] UNFCCC. Available at: unfccc.int/documents/226460

3 Scottish Government (2021) Just Transition - A Fairer, Greener Scotland: Scottish Government response. [online] Available at: www.gov.scot/publications/transition-fairer-greener-scotland/pages/2/

4 Scottish Government (2022) Supporting Scotland's Just Transition [online] Available at: www.gov.scot/news/supporting-scotlands-just-transition/

Why a participatory and regenerative futures approach?

Figure 3: Map showing locations of the two workshops held



Futures thinking offers a range of tools for identifying and examining alternative possibilities for the future (typically in the form of trends, weak signals, or scenarios) and facilitating groups in envisioning preferable futures, to support decision making in the present.⁵ The 'participatory turn' in futures and foresight recognises the need to democratise a field that has sometimes been dominated by experts. Nesta defines participatory futures as "a range of approaches for involving citizens in exploring or shaping potential futures".⁶ These approaches have been used previously in many policy contexts including by the European Commission to set their Horizon 2020 research and innovation funding agenda,⁷ by Mexico City authorities to crowdsource a new constitution,⁸ and in the town of Marcoussis in France to support agenda setting for a UN supported sustainability action plan.⁹

- 5 Whereas trends are clearly established patterns of events or behaviours that illustrate the general direction of a change over time, weak signals are more nascent developments (eg technological breakthroughs, new ways of living) that suggest new possibilities for the future.
- 6 Ramos, J et al (2019) Our futures: by the people, for the people. How mass involvement in shaping the future can solve complex problems. Available at: www.nesta.org.uk/report/our-futures-people-people/
- 7 Rosa, AB, Kimpeler, S, Schirrmester, E et al (2021) Participatory foresight and reflexive innovation: setting policy goals and developing strategies in a bottom-up, mission-oriented, sustainable way. *European Journal of Futures Research* 9, 2 [online] Available at: doi.org/10.1186/s40309-021-00171-6
- 8 OPSI (2018) Crowdsourcing the Mexico City Constitution [online] Available at: oecd-opsi.org/innovations/crowdsourcing-the-mexico-city-constitution/
- 9 Gouache, C (2021) Imagining the future with citizens: participatory foresight and democratic policy design in Marcoussis, France. *Policy Design and Practice* 5 (1), pp66-85. Available at: www.tandfonline.com/doi/full/10.1080/25741292.2021.1930687

One argument for participatory futures is that involving citizens with lived experience leads to more robust foresight. Greater diversity of perspective means fewer 'conceptual blind spots' when thinking about the future. This can help decision makers better anticipate the unexpected consequences of major societal transitions and make policy systems more resilient to shocks.

However, there are other reasons why these approaches are critical in the context of a just transition. Participatory futures can help build legitimacy in local and national policymaking by giving a voice to communities that will be most affected by transitions that will take place. This is considered a key lesson from other just transition initiatives such as those in Germany and Canada that aimed to build a consensus around the phasing out of coal. The task force on a Just Transition for Canadian Coal Power Workers and Communities travelled to 15 communities across Alberta, Nova Scotia, New Brunswick, and Saskatchewan to engage with workers and their families, local employers and business representatives, trade unions and local authorities.¹⁰ The Scottish Government also defines a just transition as both an outcome and a "process that must be undertaken in partnership with those impacted by the transition to net zero".¹¹

Participatory futures workshops can also have a transformative impact on participants by building their imaginative capacity: several case studies from the field demonstrate that participants feel a greater sense of agency and optimism about the future.¹² During our workshops we supported participants to collectively develop visions for their local area and bring these to life using creative approaches. According to our workshop evaluation survey form, most participants felt more able to imagine what a future energy system could look like in 2045 and felt more empowered to create positive change as part of their community.

All our workshop activities were also informed by the RSA's regenerative design practice. This practice stems from the recognition that "to shape an equitable future we must find a new way of imagining our place within the world, one where everything is connected".¹³ A regenerative mindset is one that recognises the interconnectedness of humans, other living beings and ecosystems, which rely on one another. Restoring and rebalancing these relationships is needed to address the social and environmental challenges we face.

To bring a regenerative lens into these place-based workshops, participants were encouraged to consider the interdependencies of the relationships we hold with the 'more than human' as well as the responsibility we have as stewards of future generations. During the workshops we asked participants to think about the impacts of technologies and societal changes relevant to net zero from the perspectives of local wildlife and natural landscapes including the Scottish wildcat and River Leven - perspectives that are often missing from discussions around a just transition and other policy debates.

10 European Commission (2019) Task force on Just Transition for Canadian Coal Power Workers and Communities [PDF] Available at: energy.ec.europa.eu/topics/oil-gas-and-coal/eu-coal-regions/resources/task-force-just-transition-canadian-coal-power-workers-and-communities_en

11 Scottish Government (2021) Op cit.

12 Cruz, S, Sharpe, A and Young, D (2022) "Our Future is Where the Heart is:" How Futures Literacy Can Enhance Youth Voice and the Case of Youth Policy Development in Laos. *Journal of Futures Studies* 27 (1). Available at: jfsdigital.org/2022-2/vol-27-no-1-september-2022/our-future-is-where-the-heart-is-how-futures-literacy-can-enhance-youth-voice-and-the-case-of-youth-policy-development-in-laos/

13 Warden, J (2021) *Regenerative Futures: From sustaining to thriving together* [online] London: RSA. Available at: www.thersa.org/reports/regenerative-futures-from-sustaining-to-thriving-together

This report details the insights from these workshops and wider community engagement in Dumfries and Fife.

- This report first provides a thematic analysis of rural and post-industrial perspectives on the changing energy system. In this section we give an overview of the workshop activities designed to support participants to explore different possibilities for the future and then provide summaries of discussions relating to energy production, transport, and domestic heating.
- We then present our creative visioning approach. We examine several speculative newspaper headlines, postcards and objects from desirable futures that were developed by participants during the workshops and consider their relevance for just transition planning.
- The final section gives an overview of wider learnings and recommendations for community engagement relating to the just transition. Meaningful participation is critical in the context of the just transition, and we hope that, going forward, the approaches demonstrated in our workshops will provide a model for community voice in decision making that can be replicated across Scotland and other parts of the world.

Rural and post-industrial perspectives on a changing energy system

Exploring drivers of change

To help build participants' understanding of issues that will shape the just transition in Scotland, we developed a set of driver cards that simplified new technologies and other social, economic, environmental, and political drivers of change. The development of these driver cards was based on a review of various materials provided by the Scottish Government – including strategy documents, detailed policy positions and a scenario modelling exercise conducted by the Energy Systems Catapult.¹⁴ In addition to this, the RSA conducted desk research to understand potential implications for communities, employment and the environment. Finally, to ensure the driver cards felt relevant to each local area, we carried out additional research to identify local issues and inspiring case studies.

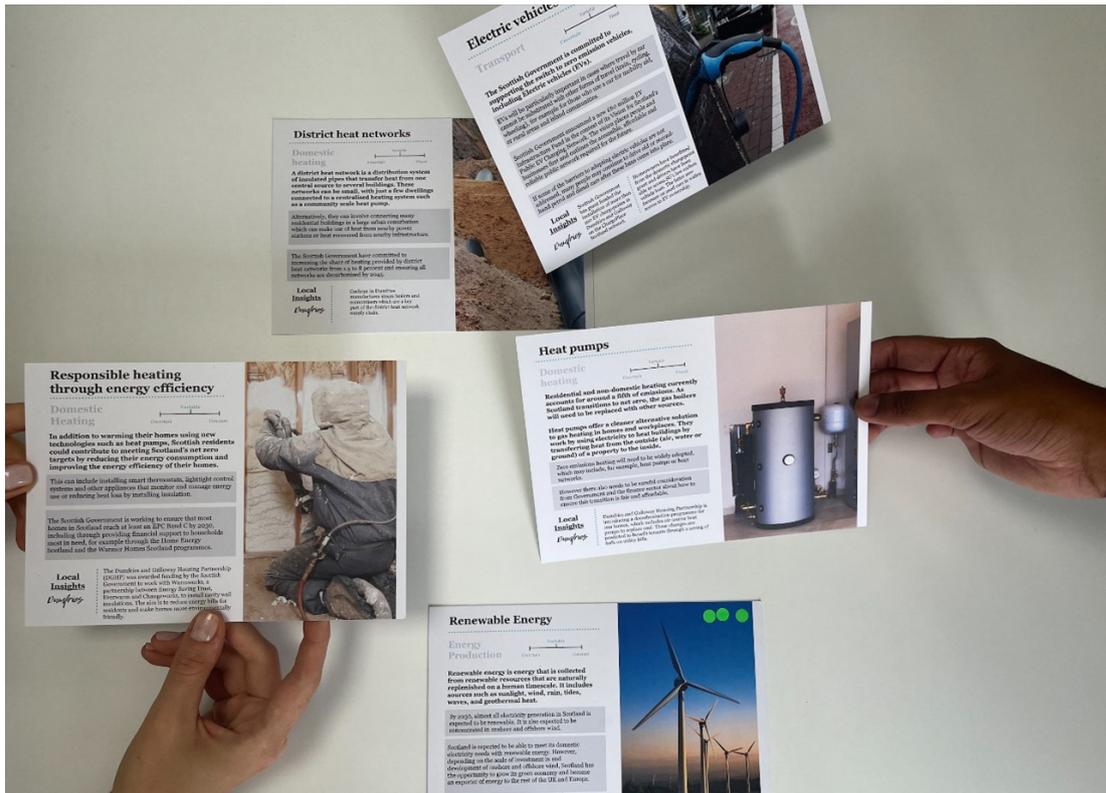
The final 10 driver cards were reviewed and edited by teams across the Scottish Government and included a range of drivers that broadly related to four domains of the energy system: energy production, domestic heating, transport, and negative emissions technologies.

Figure 4: Driver cards by domain

Driver	Domain
District heat networks	Domestic heating
Heat pumps	Domestic heating
Responsible heating and retrofit	Domestic heating
Decline of fossil fuels	Energy production
Wind power economy	Energy production
Hydrogen economy	Energy production
Carbon capture and storage	Negative emissions technologies
Biomass	Negative emissions technologies
Electric vehicles	Transport
Modal transport shifts	Transport

Each driver card presented a brief description of use cases, a set of local insights relating to the area and up to three potential just transition implications relating to Scotland's National Just Transition Outcomes.

¹⁴ Thirkill, A, Milne, S and McKinnon, S (2022) Scottish whole energy system scenarios [PDF] Available at: www.climatexchange.org.uk/media/5419/cxc-scottish-whole-energy-system-scenarios-may-2022.pdf



Before exploring the driver cards, participants took part in an active listening exercise. This was designed to set the tone for the day by providing an opportunity for participants to connect with each other and reflect on the history, assets and potential of the local area and their experiences of past transitions. Participants were provided with a question guide developed by the RSA. They were encouraged to choose two questions that felt relevant to discuss in pairs before sharing back with the wider group.

ROOTING IN PLACE

<p>What makes your place different to its neighbours?</p> <p>What gives you pride?</p> <p>What did your grandparents hope for the future of this place?</p> <p>What do you hope for the younger generations?</p>	<p>Which communities live in this place?</p> <p>How are they different or unique?</p> <p>What industry / activities take place here?</p> <p>How have these shifted through time?</p>	<p>What do you see as the boundaries of this place and why?</p> <p>What is the landscape like?</p> <p>Where does the energy in your place come from?</p> <p>How is the energy used?</p>
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Box 1: Rooting in place: rural and post-industrial contexts

In Fife, participants recounted with pride how Methil was once the greatest coal exporting port in Scotland and used to ship over 3m tons of coal annually. But the port and the beaches are now empty. Participants also told us how **“Methil used to have a thriving high street”** but that **“the decline was social, not just economic”** as they no longer felt like such a tight knit community. However, there was also a sense of cautious optimism associated with recent green hydrogen and renewable energy projects. One participant told us that **“the area hit rock bottom, but now things seem like they are starting to change; 20 years ago, it felt like there was no future, now there is a little future”**.

Dumfries is a market town close to the Scottish border. During our workshop, participants highlighted a sense of identity and community in Dumfries that is unique to the rural areas. Participants reflected on the importance of the natural landscape to the local area, suggesting that farming and nature are a large aspect of everyone’s lives. The area is close to Scotland’s first UNESCO biosphere and more than one in ten workers are employed in agriculture.¹⁵ They also suggested that **“there is a sense of energy in rural places that isn’t in cities”**. Participants felt that rural communities offered a ‘safe space’ for innovation and during the workshop explored creative ideas such as developing local supply chains for insulating homes using sheep’s wool.

In the driver card activity, participants first briefly discussed all 10 driver cards and prioritised three that they felt were most relevant to their place for further discussion. Participants were then asked to reflect on the opportunities the drivers presented for the local area and what actions needed to be taken by different stakeholders for these opportunities to be realised. The discussions focused on transport shifts, domestic heating and retrofit and renewable energy production.

Figure 5: Tally chart showing driver card prioritisation across Fife and Dumfries workshop groups

Driver card	Fife	Dumfries
Modal transport shifts		
Responsible heating and retrofit		
Wind power economy		
District heat networks		
Hydrogen economy		
Heat pumps		
Biomass		
Decline of fossil fuels		
Carbon capture and storage		
Electric vehicles		

¹⁵ RSA analysis of the Business Register and Employment Survey (BRES).

During this activity we also introduced prompts to encourage people to think from different perspectives. Each group had the same set of 'hats' available for them to 'wear' while discussing the driver cards. The hats represented different stakeholders that might be impacted by these changes. The hats included: an oil and gas engineer, an NHS worker, a climate activist, a single parent on benefits, a small business owner, an elderly resident, an animal farmer and a 16-year-old student. However, we also encouraged participants to consider the perspectives of local wildlife and natural landscapes, including the River Leven and razorbill seabird in the Fife workshop, and the Galloway Biosphere and Scottish wildcat in Dumfries. In both areas, we also encouraged participants to think from the perspective of a person born in 2050 in order to give future generations a seat at the table. These approaches took inspiration from a range of organisations that have written about life-centered design,¹⁶ including The Long Time Project¹⁷ and Moral Imaginations.¹⁸



In addition to our main workshops, we also used driver cards as part of our public engagement at the Dumfries Agricultural Show. We presented the cards and asked people to use up to three dots to vote on the changes that they would most like to happen, with 22 people taking the time to talk to us in more depth on their views on the different cards, their place, and their expectations for net zero. This proved an effective way of getting insights from 'unusual suspects': participants included several farmers that were there to survey agricultural machinery on display as well as the owner of a local alpaca farm.

16 Robinson, C (2018) Beyond human-centred design, to? [blog] Medium. Available at: cassierobinson.medium.com/beyond-human-centred-design-to-501a994f3123

17 The Long Time Project (2020) The Long Time Tools: Tools to cultivate long-termism in institutions [website] For more information see: www.thelongtimeproject.org/#about

18 Tickell, P (2021) The Manifesto for Moral Imagination [blog] Medium. Available at: medium.com/moral-imaginations/a-manifesto-for-moral-imagination-dbf62f0cb7aa

Figure 6: Driver card prioritisation at Dumfries Agricultural Show

Driver card	Vote count
Renewable energy	17 ½
Decline of fossil fuel	15 ½
Hydrogen economy	12
Modal transport shift	10
Heating efficiency	10
District heat networks	8
Biomass	4
EV	3
Heat pumps	3
Carbon capture and storage	0

Energy production

Key takeaways – energy production

- 1** Broad support for greater renewable energy production but scepticism around whether communities will directly benefit (eg perception that local job creation will be limited).
- 2** Perceived need for greater opportunities, incentives and investment to support oil and gas workers to retrain.
- 3** Concerns about the concentration of onshore wind turbines in Dumfries, and negative impacts on the landscape, noise and light pollution and road infrastructure, as well as controversial planning rules.
- 4** Support for the development of a wider range of forms of renewable or low-carbon energy projects, including geothermal, tidal, and nuclear power.
- 5** Interest in smaller scale forms of renewable energy production (eg individual wind turbines and solar panels), and business models that provide communities with direct financial compensation for exporting renewable electricity to the grid.

In both Dumfries and Fife, people recognised the need for increased renewable energy production. There was a shared sense of pride for the many innovative projects that could be found in the two areas. Participants in Fife pointed out that the workshop was conducted **“under the shadow”** of what used to be the largest wind turbine, being now the sixth largest. The Levenmouth Demonstration Turbine (ORE) is a world-leading wind turbine used for research and development. A resident highlighted that there have been **“lots of firsts in Fife”**, referring to innovative projects like the ORE turbine and H100, a ‘world first’ project to heat 300 homes with 100 percent green hydrogen.¹⁹ Similarly, in Dumfries one participant told us they were happy to live in a place **“powered by renewables”**. They identified the presence of well-paid jobs in the region and appreciated that they had the opportunity to study hydro renewables at Dumfries and Galloway college.

¹⁹ InvestFife (2021) H100 Fife [website] For more information see: www.investfife.co.uk/casestudies/h100-world-first-green-hydrogen/

However, participants in both areas also expressed scepticism about the extent to which the community would benefit from local renewable energy projects. Participants reflected on previous experiences, specifically the use of the Levenmouth Demonstration Turbine by Samsung. Initial excitement in this development was quelled as it was felt that the company left the area without creating many jobs or wider benefits for the community. Participants in Dumfries also expressed their frustration that people do not have access to the energy generated in the area and suggested that **“employment opportunities are not so significant”**. At the Dumfries show, there was a focus on wind power, which was perceived as excessively concentrated in the area. One person questioned why there was no reward going directly to individuals recognising that, while **“wind farm money”** was supporting certain community projects they were involved with, nothing was **“going in [their] pocket”**.

Related concerns were voiced around the functioning of the grid. Multiple people were frustrated with the way Scottish renewable energy production is connected to the UK grid, with one person describing this as an **“attempt to quite physically stitch together England and Scotland”**. Others pointed more generally at the need for better grid infrastructure to support increased electricity capacity. Indeed, opposition to wind turbines was worsened by the fact that there are moments where the grid **“can’t handle”** the amount of Scottish renewable energy produced.

The lack of benefit for the community especially from wind power was particularly frustrating for participants in Dumfries, who felt the area **“got none of the advantages and all of the disadvantages.”** The negative impacts of wind farms identified included changes to the landscape, noise, and light pollution, especially at night. One attendee at the show told us they would want to support renewable energy production, but turbines **“destroy the Scottish landscape”**. Many people also took issue with the system of planning permission. One concern was the permissions were too lax and tended to disadvantage ordinary people rather than, for example, the ‘foreign-owned’ big forestry companies. Further, the regular development of new wind farms ‘wrecked’ the road for ordinary vehicles. However, some residents expressed a desire for installing individual turbines and solar panels but felt that upfront costs were too high, and expressed a need for stronger and better financial incentives from the government.

Discussions tended to converge around onshore and offshore wind, which the Scottish Government has suggested will continue to account for the majority of renewable energy production. However, participants in both places identified other sources of renewable or low-carbon energy that they felt were more fitting for their area, either for historical or for physical, geological reasons. In Dumfries, several members of the public commented on the absence of a focus on nuclear power as a clean energy source and expressed frustration at the Scottish Government’s stance on this issue. Various attendees at Dumfries highlighted that they had family members that used to be employed at Chapelcross, the nearby power plant that is currently undergoing decommissioning. In Fife, people referred to the opportunities presented by tidal power, and geothermal power, including through use of former mining sites.

In line with its industrial past, in Fife we heard specific concerns for the role of workers in the transition away from oil and gas and towards renewables. Participants identified as an existing asset the high number of engineers in the area that could go into renewables. However, it was also highlighted that currently as a worker it is easier to work in oil and gas, and expressed the need for more incentives, reskilling, and investment to drive people towards renewables. One participant told us: **“my boyfriend works locally, for a big oil and gas firm, he wants to move to renewables but there aren’t many opportunities. What are the incentives and opportunities for people like him to support this transition?”**

In both Dumfries and Fife there was strong excitement for different uses of hydrogen, including to heat homes reliably and cheaply and as a more powerful source of fuel than electricity for vehicles. When considering a shift towards hydrogen production from the perspective of an oil and gas worker, a participant in Fife highlighted the benefit of protecting certain jobs in this sector. There was consensus that to reap the various benefits, including environmental benefits, of this type of energy **“it would have to be green hydrogen”**.

Biomass is particularly relevant to Dumfries because of the abundance of forestry in the region. Some workshop participants suggested that sustainable and diverse biomass programmes could have positive spill overs for restoration of woodland habitat and the provision of more prey for wild animals. However, the nearby biomass plant in Lockerbie was seen as controversial, **“asking farmers to grow wood for biomass when [land] could have been used for food”**. In the case of the plant there was also concern around how ‘clean’ biomass fumes could be, but with a notion that the Lockerbie plant seemed **“relatively clear”**. The use of land by ‘foreign’ (non-local) companies for forestry was also cause for frustration.

Transport

Key takeaways – transport

- 1** Excitement for how modal transport shifts to enable 20-minute neighbourhoods, which could improve quality of life, create opportunities for tourism and support the transition to a circular economy.
- 2** However, several barriers to modal transport shifts include a lack of public transport infrastructure, which has led to communities feeling increasingly isolated.
- 3** Recent investments in transport infrastructure need to be more tailored to the needs of communities (eg better intra-rural bus networks).
- 4** Concerns around electric vehicles for individual use centred around current costs and affordability.

In both areas, transport was highlighted as a central issue for the community. Modal transport shifts were associated with two related opportunities: 20-minute neighbourhoods and a local circular economy. There was widespread excitement for the concept of the 20-minute neighbourhood. Participants in Fife highlighted that it would provide opportunities to reconnect the community and bring in more tourism, with positive spill overs for the local economy. They also felt that a 20-minute neighbourhood could have positive implications for elderly people in the community, who might otherwise spend a big part of the day travelling to do their shopping.

Similarly, participants were excited by the opportunity for more local production and consumption of goods and services. Participants felt that this would not only reduce emissions and waste but have positive impacts for the community and local economy. Participants in Dumfries invoked the need for strong action to reduce food waste and the impact of carbon-emitting transport. For example, participants discussed how local food produce (particularly meat and dairy) is often exported outside of the county before being brought back in for consumption. In Fife, people focused on the opportunities that might arise from a shift away from a 'disposable culture' and a move towards circularity which could **“create local enterprise around fixing and repairing products”**.

Participants clearly recognised the importance of moving away from individual fossil-fuelled car use but were aware of the barriers that they faced in enacting these changes, one being a lack of public transport infrastructure. Participants in Dumfries felt cut off both from town centre and from rural neighbours. Indeed, one participant told us that Dumfries already **“feels like an island”**. While an attendee at the Dumfries show complained they were in the process of losing yet another bus route that used to serve them and suggested that this **“is going to isolate communities even more”**.

While recent public investment in transport was welcomed, participants felt that spending was not always tailored to the needs of the community. In Fife, several participants were part of a group campaigning to re-establish a rail link in Leven. One issue that came up in discussions was that the current plans for the rail link would cut through various active travel routes, including cycle paths. A member of the campaign group told us they are working to address this and ensure more generally that the station will be accessible for people in the community. Another participant in Fife was further concerned that previous priorities in public spending **“often favoured wealthier communities”** by concentrating on road and rail, leaving behind infrastructure that supports lower income households, such as buses. There was a strong appetite for subsidised bus travel.

Similarly, in Dumfries participants acknowledged the practical challenges in developing or improving transport systems in rural areas but expressed their frustration at the lack of listening to what routes and what systems people really needed in rural areas. Examples included home delivery services for elderly residents, accessible transport for people with physical disabilities, etc. At the Dumfries show, an attendee highlighted the need for improved bus transport, but warned it should not feel like a blanket imposition from urban into rural areas. They lamented that too often investment in public transport is framed around connecting urban centres to rural areas, with no connection within and between the latter.

Another perceived barrier to modal transport shifts was daily time pressures associated with employment commitments. One participant in Fife told us: **“if you start work at 6am in Alloa, you are not going to be taking the bus”**. Another suggested that **“if you are unemployed, the DWP tells you that if there is a job available within one hour you have to take it”**. An attendee at the Dumfries show faced a 120 mile commute every day, which also put a strain on their already vulnerable finances through high fuel prices. While they **“hate using a car”** they **“had to”**, as public transport was not viable as an alternative due to bad connectivity which made their commute several hours long.

The use of electric vehicles for individual travel was met with mixed views. The main concern was affordability, with the cost of EVs deemed prohibitively high in both places. Attendees at the Dumfries show also suggested out that EVs were not fit for the needs of local businesses, such as that for more powerful machines like tractors. There was hope that a shift directly towards hydrogen powered vehicles could overcome this limitation, while one attendee mentioned the development of a Swedish electric logging machine as a favourable example of an EV.

Domestic heating

Key takeaways – domestic heating

- 1** Strong support for improvements to domestic heating systems, given current challenges with the cost of living.
- 2** Perceived lack of agency for private renters and social housing tenants to make these improvements, and frustration with a lack of action or support from landlords.
- 3** High upfront costs identified as a barrier to home improvements and perceived issues with the structure of current financial incentives.
- 4** Recommendations for local authorities to play a greater role in regulating and standardising improvements to protect homeowners and tenants.
- 5** In Dumfries there is a unique opportunity to reuse local sheep wool for insulating homes, reducing waste, and benefitting the local economy.

In this domain, people talked about the opportunities and challenges relating to heat pumps, retrofitting and energy efficiency, as well as district heat networks. Changes in domestic heating were particularly salient given the current cost of living and energy crisis, with many homes in these areas being off grid and residents concerned about the winter to come. One participant highlighted how this context really underlined the need for intervention: **“now is the time to get on board as sadly people now need the energy savings”**. This meant that participants were overwhelmingly in favour of improvements to domestic heating systems. They assumed that changes could bring not only climate-related advantages, but individual advantages in terms of lowered bills and more reliable heating systems.

However, participants felt they had constrained agency to make these improvements to their homes. Private renters, those in social housing, and the wider community identified many constraints in carrying out these shifts. At the Dumfries show, one person, a tenant of a housing association, expressed clear frustration at the lack of action in changing heating systems by the Dumfries & Galloway Housing Partnership

(currently Wheatley Homes South), even after their requests that changes be made. The person mentioned that, as a tenant, they had **“absolutely no say”** in decisions around heating. They also described how they had fallen through the cracks of support offered – as someone working full time and a social housing tenant, they did not receive support from the Warmer Homes project but faced rising fuel, heating, National Insurance, and food costs. Warmer Homes Scotland supports households struggling to heat their home to install a range of energy saving improvements.²⁰

A private tenant, in a different socio-economic situation, complained about similar issues. The attendee rented their property as they would not otherwise **“be able to afford such a nice country house”**. The house was off grid for not only heating but water, sewage and power, and the landlord had no interest in putting in the costly investment to changing the heating and other systems. The practical challenges for off grid homes were also highlighted in Fife, where participants suggested that [specific] support was needed for these types of properties.

There were also suggestions that there is a role of responsibility by local authorities in ensuring quality across homes, protecting residents and tenants who carried out or accepted the shifts that the government is wanting to see. This could be done through the regulation and standardisation of provision. Participants suggested that all homes should have **“the same great standard”** and that an aggregated, local approach was needed to understand what works.

Renters and non-renters alike felt unable to enact changes also because of the high upfront cost needed to install heat pumps or introduce retrofitting. A participant in Fife told us that changes in heating **“need to be cheaper – currently if you don’t have the money, you can’t make the choice”**. Multiple people at the agricultural show had made use of financial incentives granted as support but criticised their current shape, and felt that more and better tailored support was needed. One person, who already had a grant for roof insulation and was applying for a grant for installing solar panels, recognised that they could only do so because they had the savings to incur the upfront cost, which is then recovered in 10 years.

There was particular interest in local approaches to retrofitting and energy efficiency. In Dumfries this was tied to circularity in the economy and local resources. Participants discussed the opportunities coming from animal and food waste from the farming and agricultural sector to be innovatively re-utilised for retrofitting. One of the participants was particularly frustrated by seeing the picture of the driver card which depicted a worker utilising chemical agents to insulate panels for houses - **“we have so much sheep wool that goes to waste!”** It was acknowledged that while the right infrastructure for processing the wool effectively is currently missing, this could happen with investment alongside local and national commitments.

20 Home Energy Scotland (2022) Warmer Homes Scotland: in detail [online] Available at: www.homeenergyscotland.org/find-funding-grants-and-loans/warmer-homes-scotland/

Collectively imagining a just transition

Creating artefacts from the future

The visioning section of the workshop was designed to take participants on a journey towards building desirable futures related to the changes that had been explored earlier in the day. The methodology took inspiration from *The Thing From The Future*, a game developed by Situation Lab that challenges players to creatively describe hypothetical objects from different futures. *The Thing From The Future* encourages out of the box, creative and critical thinking.²¹ It is an example of experiential futures, a practice that aims to bring the future to life in a tangible way.²² In this context, the author of the game, Stuart Candy, has described how the activity is meant to help to facilitate a “hypothetical, exploratory mindset, affording players not only permission to think along heterodox lines, but offering the specific materials of imagination with which to do so”.²³ Further, the artefact generation inherent in the game is seen as a sort of ‘reverse archaeology’.

While in the original game players are given a variety of prompts related to different scenarios and moods, in order to create and describe their future artefact, we wanted participants to start from a shared understanding of the characteristics of desirable futures. For this reason, we started the activity with a discussion around what a just transition could look and feel like for their local area. Participants were first asked to reflect on earlier activities and think about what they would like to see in the future, what a future world that was both plausible and aspirational would look and feel like, and to choose a word that represented it.

On each table in both workshops, we provided templates for three different artefacts:

- A postcard from the future: here participants were invited to write a postcard to their present self, explaining their life and place in their desired future, how they got there, and what steps were taken. They were also encouraged to express gratitude for setting on a path towards this future.
- A front-page story from the future: participants were given the chance to construct a newspaper headline celebrating an event in 2050. They had space to include an illustration of the event, and a brief explanation of how the community reached their goal.
- An object from the future: participants were asked to design an object that might exist in the future they had envisioned and give a brief explanation of its function and benefits.

21 Situation Lab (2017) *The Thing From The Future* [online] Available at: situationlab.org/project/the-thing-from-the-future/

22 Candy, S (2018) *Experiential Futures: A brief outline*. The sceptical futurist [blog] Available at: futuryst.blogspot.com/2018/10/experiential-futures-brief-outline.html

23 Candy, S (2018) *Gaming Futures Literacy*. In R Miller (ed) *Transforming the Future* [online] London: Taylor Francis. Available at: www.taylorfrancis.com/chapters/oa-edit/10.4324/9781351048002-7/gaming-futures-literacy-stuart-candy

The remainder of this section presents several of these artefacts that participants developed and considers their relevance for just transition planning. While some objects focused on a distinct theme, many artefacts provided a holistic representation of the future, depicting worlds that bring together new technologies, changes to the natural environment, and changes to ways of living. This is in line with the findings from the field of participatory futures that this approach often brings about future visions that are more holistic and less technical than traditional foresight exercises. Research by Rosa et al shows that citizens' participation in futures exercises can provide visions that are "unencumbered by policy silos and connect the importance of multiple sectors collaborating to the addressing of local needs".²⁴

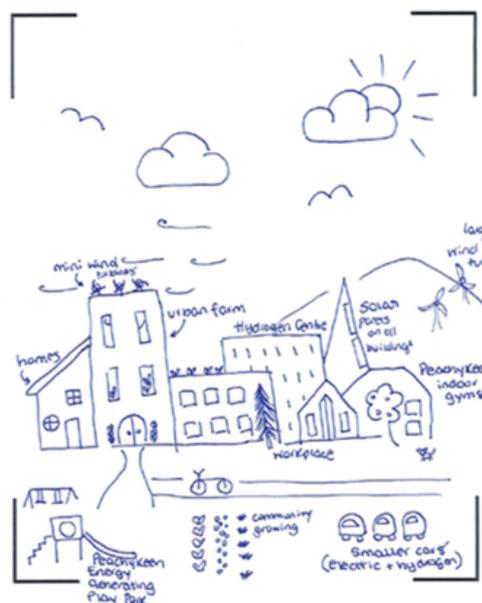
One example is an artefact titled by its author 'The grass is greener'. It depicts a version of Fife 28 years after Scotland's climate pledge. The headline describes a world where people are living with nature, where there is a centre in which the community lives, works, shops, and socialises. In addition to this, the depiction of the town centre includes elements from the driver cards that participants had discussed earlier in the day. There are wind turbines, solar panels, hydrogen centres, as well as smaller, electric and hydrogen powered cars.

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The grass is greener!

Newspaper headline: Fife

28 years after Scotland's climate pledge, statistics have proved that the grass is greener when we come together with a common goal to live with nature, by incorporating greenery in our daily lives. The town centre has become the hub of the community where we live, work, shop and socialise.



These artefacts, taken together, and the detail with which they were created, show the depth of insights that can be gained from participatory futures activities. The artefacts and citizens' visions can help in understanding how both day-to-day life and wider systems could look in a future where a just transition has been achieved. This is a crucial starting point in understanding what exactly needs to change in terms of policies, behaviours and systems to realise a just transition.

24 Rosa, AB, Kimpeler, S, Schirrmester, E et al (2021) Op cit.

Clean technologies

Theme	Artefacts from 2045	Considerations for just transition planning
Clean technologies	<ul style="list-style-type: none"> Artefacts depicting community owned and controlled renewable energy projects (eg unlimited free green hydrogen in Fife). A very useful box: a whole house energy management system using smart technology including voice activation (Dumfries). Sustainable public transport infrastructure including a tram (Dumfries), driverless monorail (Fife) and solar powered buggies (Fife). 	<ul style="list-style-type: none"> How might we support the creation and scaling of community energy projects? How might we enable households to use energy more efficiently, including through the use of smart technologies? How might we promote the development of radically new kinds of sustainable public transport infrastructure (eg micro-mobility)?

Various artefacts developed by participants reflected how clean technologies could help their area achieve a just transition. These spanned across the different domains that we had explored in previous activities: many artefacts related to renewable energy production, domestic heating and energy efficiency, and transport.

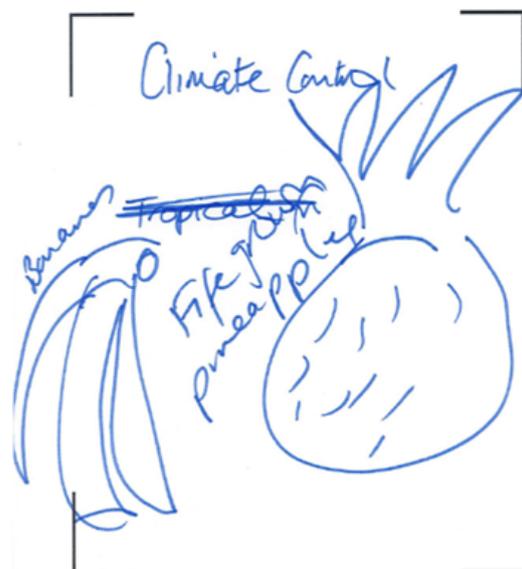
In terms of energy production, there was a clear appetite for renewables. Artefacts also illustrated the desire for energy to be fair and affordable, locally produced and consumed, and owned and controlled by communities. For example, one newspaper headline from the future suggested that all residents in Fife achieved provision of unlimited free energy through the introduction of green hydrogen in every new home. In another artefact developed by a resident in Fife, the old mining pits are put to use for renewables, and the water is used for geothermal power. Other artefacts suggested that solar panels were powering community-owned buses and cars, community centres, all buildings. Wind power showed up at both an industrial level, and individual or community level: large-scale wind farms were described alongside smaller wind turbines powering homes or urban farms.

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Unlimited free energy announced

Newspaper headline: Fife

Every new home has installed hydrogen mass produced from renewable sources. Domestic and industrial energy consumption strikes new low. Fife agriculture diversifies into tropical fruit.



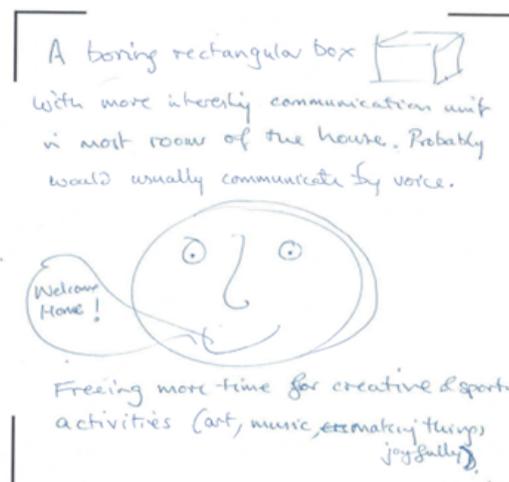
Improvements in domestic heating and energy efficiencies were shown to be important. One object represented a **“whole-house energy management system”** that would oversee electricity, lighting, hot water and building heating, minimising heat loss/gain. The new smart technology, including voice activation, also meant that the benefits are not only in terms of decreased energy use. They also allowed more time for users for other creative activities and leisure time. This was a reflection of the perceived wider benefits of changes in heating systems, including in terms of affordability, health and wellbeing.

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A useful box

Object: Dumfries

A whole-house energy management system. This would oversee: electricity use, lighting, hot water, building heating. It would minimise heat loss/gain from rooms not currently in use and have lots more functionality.



Changes to transport reflected the salience of this topic earlier in the workshops. Several artefacts developed by participants explored concerns that had been surfaced previously. These artefacts depicted futures in which travel was affordable and clean, thanks to the spread of hydrogen vehicles, EVs and solar powered cars. Indeed, one postcard from the future from Fife celebrated the complete replacement of fossil fuelled transport with a **“green hydrogen infrastructure”**. In most artefacts, cars were generally portrayed as smaller and community owned. Other sustainable modes of micro-mobility included **“solar powered buggies”**.

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Dear Andrew

Postcard: Fife

Life is good, thankfully we don't have to wear shades or sunscreen, well only in a balmy summer. Talking of which, it is holiday time and the once fossil fuelled transport system has been replaced with a green hydrogen infrastructure – still need a helmet for my hydrogen powered, quite literally, recycled bicycle. The urban farming and clean technology units in our local areas are fantastic – who thought you could grow a banana in Fife!



The innovative clean technologies enabling these changes and the focus on public transport as a way to benefit communities were combined in two very similar artefacts that were created independently in the two different places: in Dumfries, a participant created a tram and a in Fife, someone designed a very similar driverless hybrid bus/monorail. This had relevance to the discussion that participants had around the importance of better public transport that fulfil the needs of the community.

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Tram

Object: Dumfries



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Driverless monorail

Object: Fife



Environmental restoration

Theme	Artefacts from 2045	Considerations for just transition planning
Environmental restoration	<ul style="list-style-type: none"> • Postcards from the future imagining a green Fife, clear blue rivers and trees and the return of whales (Fife). • Artefacts imagining the flourishing of local community gardens and urban farming (Fife). 	<ul style="list-style-type: none"> • How might we create opportunities for community-led ecotourism in post-industrial communities? • How might we reimagine green spaces in towns and cities to support health and wellbeing?

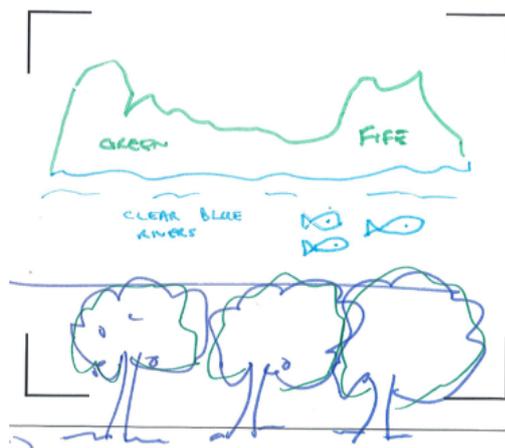
Several visions related to changes in the way that land, local species and natural environment is valued in the place. The natural environment was connected to happiness, wellbeing and learning to live with nature in different ways. Participants in Fife discussed the desire for a future in which the River Leven was cleared up, and both salmon and fly fishers were returning to the area. Other physical changes to areas included an increase of green spaces that were available to the community, fulfilling a variety of functions. Artefacts in both Fife and Dumfries of the future local landscape mostly included trees, flowers, and dedicated green spaces. Nature emerged as a symbol of hope in several artefacts. A postcard from the future depicted a green Fife with **“clear blue rivers”** and trees. The participant highlighted a specific relationship between this future and the present: **“the best time to plant a tree/distil a whisky: 20 years ago”**.

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Time to get moving to get here

Postcard: Fife

Time to get moving to get here – be where you want for free. The best time to plant a tree or distil whisky was 20 years ago.



An important function of green spaces was also surfaced in terms of contributing to the self-sufficiency and sustainability of places in relation to food production. One vision focused squarely on growing sustainably, and community gardens in Fife, explicitly connecting this type of growing with intergenerational food security and sustainable eating. Several other artefacts included orchards, community growing, and vertical farming.

Growing sustainable: community garden striving

Newspaper headline: Fife

Fruit trees back in bloom offering free food for those passing by to bring back home.

The gardens of communities are flourishing: the young and old are enjoying food security and sustainable eating. Bon appétit Methil.



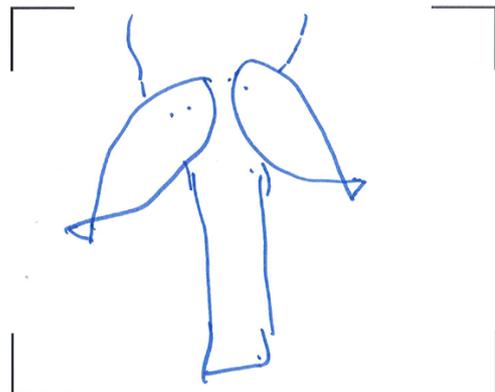
In Fife, the restoration of the river was a focus of discussion throughout the day, as participants felt that it could bring benefits in terms of tourism and opportunities for leisure to the community. Participants hoped that these opportunities could be realised through community-led projects, that made use of the assets of the place, like the coast, the river, and local history, similar to the tidal-powered Levenmouth Whale Project. This is a community-led development, in which art, engineering and green tourism have come together to create a unique attraction, drawing visitors to the area.²⁵ Whales were also tied to environmental restoration of the sea, as there had been sightings of whales near the port of Methil. One postcard from the future described how the whales had returned and stayed at the end of the pier, which was now bustling with visitors.

This artefact showed a positive resolution to some of the concerns expressed earlier the day. Participants also welcomed the opportunities for local employment from tourism. However, they underlined that the community needed to be involved as there was a fear that projects like the reopening of the rail link in Leven or the Whale Project might end up servicing the visitor economy more than the needs of the local community.

The whales

Postcard: Fife

Heh me,
Just a wee note from the future. You won't believe the change here. Remember those whales they talked about pre-pandemic, well they are here now right at the end of the Leven Pier. The whole prom is road free, the people come off the train and along the prom or pier on foot or the numerous solar powered buggies.



²⁵ Levenmouth Whale Project (2020) The project [website] For more information see: levenmouth-whale.co.uk/the-project/

Regenerative lifestyles

Theme	Artefacts from 2045	Considerations for just transition planning
Regenerative lifestyles	<ul style="list-style-type: none"> • A newspaper headline imagining a future where consumer products (eg TVs) are produced locally using recycled materials (Fife). • A newspaper headline detailing the spread of eco-developments that combine sustainable buildings with shared community living (Fife). • Artefacts imagining how communities will adapt to rising sea levels and other direct impacts of climate change (Dumfries). 	<ul style="list-style-type: none"> • How might we build circularity into local economic development strategies and regeneration plans? • How might we reimagine housing developments to promote community connections? • How might we build the capabilities of local communities as part of our climate resilience strategies?

Several of the artefacts pointed towards an awareness that the changes that were discussed throughout could enable wider lifestyle shifts. These artefacts illustrated regenerative ways of producing, consuming, and living in that they “consider the nested, natural and social systems in which a community is situated”.²⁶

One way in which this was presented in the artefacts was through a clear preference for shifts towards a circular economy. In Dumfries, there had been throughout the day a focus on concerns around the level of waste that came, in part, through inefficiencies in the system of production and consumption. One postcard from the future celebrated the landmark moment in which Dumfries achieved its goal of **“producing 100 percent of the food, products and materials within 100 miles of Dumfries with zero waste, as all materials are reused and repaired”**. In Fife, an artefact depicted a customer buying a TV from a local shop **“a stone’s throw”** from their house, in a future in which the majority of consumer products were **“produced locally, reducing haulage and transit impact”**. The participant also explained during the workshop that the TV came with a lifetime repair guarantee.

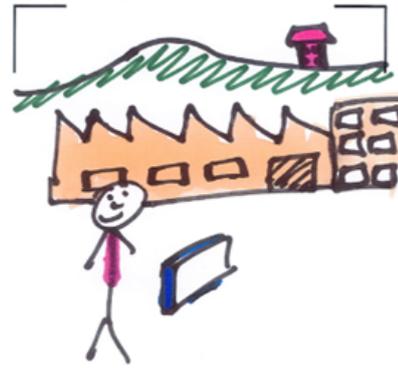
26 Ortiz, N (2022) A regenerative design approach to shaping a just transition in Scotland [blog] RSA. Available at: www.thersa.org/blog/2022/10/a-regenerative-design-approach-to-shaping-a-just-transition-in-scotland

RSA

100% re-claimable and clean target now reached

Newspaper headline: Fife

All consumer products are now being produced from re-claimable materials using 100% clean energy with zero packaging. The majority are also produced locally reducing haulage and transit impact.



JUMP WITH TERRY.
FROM LOCAL SUPPLY
ONLY A STONE'S THROW
FROM HIS HOUSE

However, changes advocated for went deeper than merely changes to production and consumption of goods and encompassed a move towards alternative lifestyles that are more in tune with nature and the environment. One newspaper headline imagined a future where **“eco-developments”** had spread across Fife. In this future, energy efficiency was combined with sustainable building materials, with the function of supporting community living. This includes the sharing of tools and skills, and chores such as laundry and cooking. Another artefact, a postcard from the future, titled Utopia by its author, depicted a self-sustaining community in Fife that does **“no harm to the environment, the animals or each other”**.

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10,000th community living eco development goes live

Newspaper headline: Fife

Fife celebrates the opening of its 10,000th community living eco development. Designed to be a completely sustainable building that uses minimal energy and promotes community living with shared laundry, cooking, bike and cars.



A set of artefacts imagined an even deeper level of change to the ways that people would live in the two regions. These included very real concerns with how climate change might impact the physical and social landscape of their place. In this sense, while most discussions earlier in the workshop focused on mitigation of climate change effects through reducing emissions, these artefacts surfaced people's vision for adaptation to climate change in Scotland. Several of the visions turned to wide-ranging changes in ways of living as a demonstration and tool for resilience.

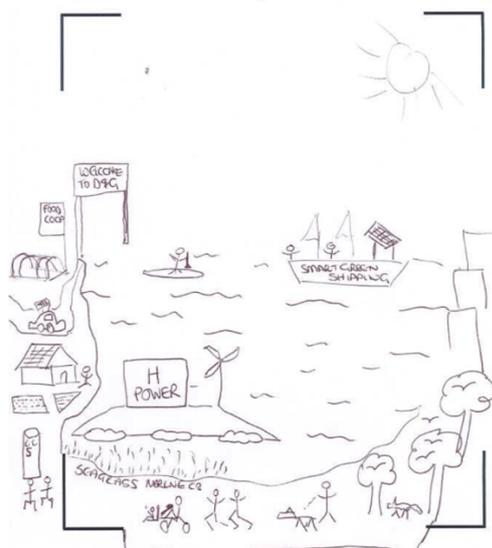
A postcard from the future showed a future in which, after a great number of climate change-related deaths, people had learned to live in way that is more **“balanced with the planet and its resources that we have respectful access to”**. Another artefact depicted Dumfries as a physical island, after the **“great floods of 2040”** that separated it from UK mainland. However, this meant that the island was now marked as top scorer in a global contentment survey, thanks to the efforts of people in 2022 that started thinking about local place-based living as a way to improve resilience and happiness.

RSA

D&G, the place to be. Where happiness is key

Newspaper headline: Dumfries

Since the great flood of 2040 that separated D&G from the UK mainland, the global contentment survey has consistently ranked the island as the best place to be. Back in 2022 a forward-thinking group began to look at how the region could harness local place-based living to improve resilience and happiness. D&G now provides a blueprint for other parts of the world.



Lessons for community engagement in just transition planning

Across our engagement we found that communities have a clear desire to be more involved in decision making related to the just transition – and this was reported by over 90 percent of participants that completed our evaluation survey form.²⁷ However, participants also voiced a lack of agency at present, particularly in Fife, where communities felt their voices had not been heard in previous consultations: **“there has been an invasion of consultants coming in... But it feels like the community is speaking into the void”**. Participants felt that greater community involvement in decision making, as well as implementation, was critical to avoid a repeat of the patterns of the past where areas had been ‘left behind’ by industrial transitions. As one participant put it: **“transition from what to what?... Who makes the decision, how do we learn from history? What happens after the consultation? Community should be involved not only in consultation but also in decision making and implementation”**.

Meaningful participation is critical in the context of the just transition. Indeed, the Scottish Government defines a just transition as both an outcome and a “process that must be undertaken in partnership with those impacted by the transition to net zero”.²⁸ Our focus in this section is to reflect on the impact evaluation of our workshops and learnings from the process of design and delivery. In doing so, we put forward recommendations for how to do effective community engagement that leverages participatory and regenerative futures approaches.

²⁷ When asked whether participants wanted to be more involved in decision making over the energy system, 56 percent of participants strongly agreed, and 33 percent agreed.

²⁸ Scottish Government (2021) Op cit.

Figure 7: Key takeaways for just transition community engagement (duplicate of Figure 2)

Practice	Recommendations
Partnerships and recruitment	<ul style="list-style-type: none"> • Partner with local institutions and community organisations to tap into existing networks, encourage local capability building and build joint ownership on the ambition. • Provide flexible incentives to enable diverse participation and reward people for their time, effort, and contribution. • Scale wide-reaching community engagement activities that are hosted outside of formal workshop contexts (eg local community events and festivals).
Designing participatory futures	<ul style="list-style-type: none"> • Build in time for ongoing, sustained, and meaningful engagement to build trusted relationships with communities and allow for greater input into just transition planning (eg feedback on detailed policy positions). • Experiment with immersive and imaginative approaches to facilitate deeper engagement (eg serious games, creative storytelling, theatre and performance). • Embed regenerative perspectives into participatory futures, by inviting people to think longer term and consider the interdependency of humans, other living beings and ecosystems. • Explore ways to open-source tools and resources to support community groups to conduct their own participatory futures workshops.
Impact evaluation	<ul style="list-style-type: none"> • Adopt a wider range of approaches to evaluate the process and impact of engagement to explore in greater depth the contribution of participatory futures activities to the observed workshop outcomes. • Collaborate with participatory and regenerative futures practitioners to define a shared evaluation framework.

Participant recruitment: working in partnership

Each workshop was held as a full day, in-person workshop and we worked in partnership with local institutions and community organisations to recruit participants, with the aim of convening a diverse range of stakeholders, including citizens and workers whose voices are not usually heard in policy dialogues. As part of the recruitment process, we used a variety of engagement approaches, tapping into existing RSA Scotland networks, and local groups active in related fields (eg. community groups, environmental activists). Several methods of promotion were adopted including direct emails and newsletters by the collaborating organisations, RSA digital and media channels and external social media channels.

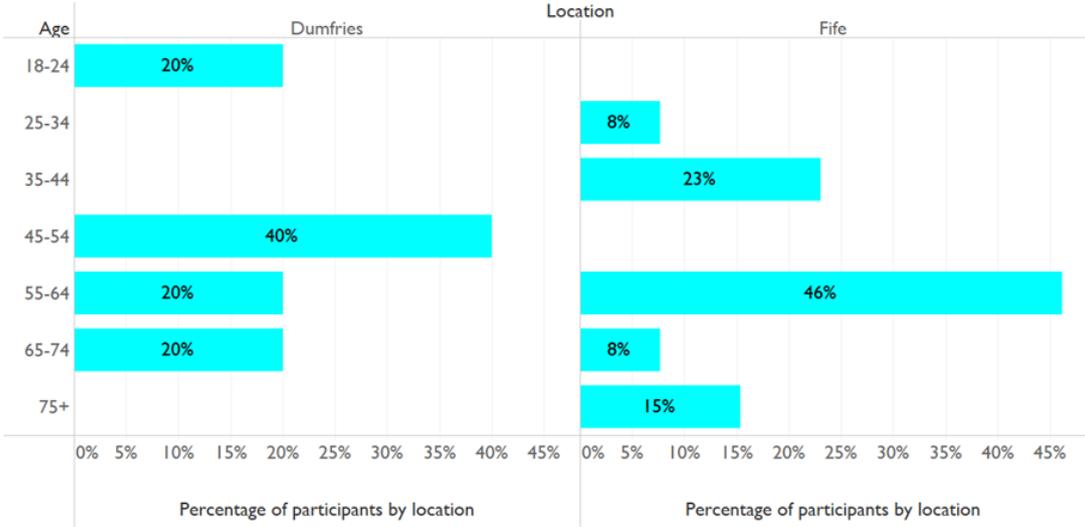
In Fife, the workshop was held at the Renewables Innovation Centre in Methil. The event was promoted in partnership with Fife Council through their community engagement contacts. Organisations that were contacted included Leven Community Council, WEAll, Fife Today, Greener Kirkcaldy, Climate Action Fife, The Leven Programme, Fife Environment Trust, Fife Voluntary Action, Leven Environment Group, The Courier, and The Coalfields Regeneration Trust. Further promotions went out as direct emails, newsletters and/or social media channels from interested community-led organisations such as the Levenmouth Facebook group.

In Dumfries, the workshop was held at The Crichton Trust, which supported the promotion of the event. Organisations that were contacted to maximise the reach of audiences included South of Scotland Enterprise, John Paul Jones Cottage Museum, The Hub Dumfries & Galloway, Southern Uplands Partnership, Solway Firth Partnership, Third Sector Dumfries and Galloway, Dumfries & Galloway Action on Climate Change, Dumfries & Galloway News and WEAll.

In Fife, 14 participants attended the workshop. Participants included an anthropology lecturer, a funder of a community regeneration project, members of a local history group in Methil and the group campaigning for the reopening of the Leven rail link. Some participants were small business owners, with one working in the energy sector. Most participants were aged over 55 and identified as ‘explorers’ or ‘generalists’ when asked about their level of expertise on issues relevant to the just transition.

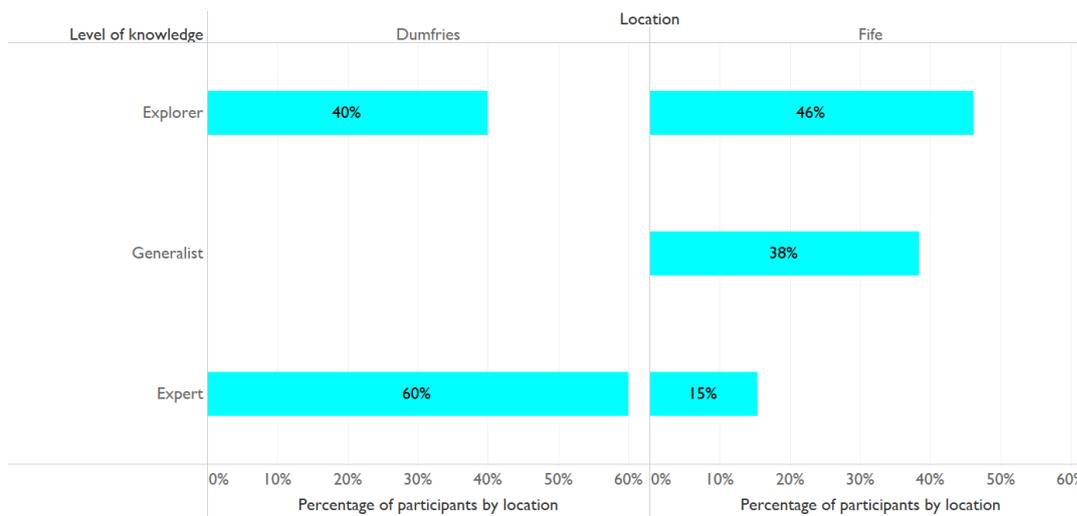
In Dumfries, six participants attended the workshop. Participants included members of the Green Party with one being a retired engineer, a member of South of Scotland Enterprise, a student from Edinburgh University and the CEO of The Crichton Trust. Low attendance in Dumfries was partly attributable to an unforeseen clash with the Dumfries Agricultural Show. However, to broaden our engagement with communities in this area, RSA researchers attended this event and had 22 conversations with members of the public.

Figure 8: Age distribution of participants by location²⁹



²⁹ 80 percent response rate.

Figure 9: Level of knowledge distribution of participants by location³⁰



Participants in the workshops recognised that they formed a self-selecting group of people who were already engaged in different ways. In Fife, participants suggested that a wider range of community members needed to be involved in decision making, even though this could create additional complexity in developing plans and visions. One participant asked: **“how do you get a wider range of people in these discussions? It is often the same people that come here to say the same things”**. This was echoed in our evaluation form where participants noted that they felt listened to but that **“there needed to be more diversity”**. Whilst we did not collect demographic data on attendees at the Dumfries show, this pop-up engagement was successful in reaching a wider group of people, including many from the agricultural industry, who would have otherwise been unlikely to attend our workshop.

The timing of the workshops was a challenge when recruiting diverse participants. In order to input into the Scottish Government’s consultation on the ESJTP, the workshops took place in the first week of August during the Scottish summer holidays, when residents may have been on holiday or been managing childcare responsibilities. We also did not offer incentives when recruiting participants due to administrative and budgetary constraints.

³⁰ 80 percent response rate; highest level of expertise attributed to participant when more than one selected.

Partnerships and recruitment: recommendations for just transition planning

- 1 Partner with local institutions and community organisations to tap into existing networks and encourage local capability building** and create shared ownership. This was effective in Fife where partnering with the council helped to attract a more diverse group of participants, both in terms of professional backgrounds, age, and level of knowledge, attracting many ‘explorers’ rather than ‘experts’.³¹ Over 100 workers were contacted by the council from their community engagement network, securing 14 highly engaged participants. Having a longer lead time would have allowed the RSA to build stronger partnerships with other local institutions and community organisations, including by involving them more directly in the design and delivery of the workshops. There is some evidence that participatory futures engagements are more effective when the conditions to drive change are created, by tapping into existing local movements and forming local partnerships.³² Additionally, ensuring stakeholder engagement from the onset of project planning can help to empower local stakeholders, mitigate local planning conflicts, encourage capability building, and integrate different types of knowledge, expectations and aspirations.³³
- 2 Provide incentives to enable participation and reward people for their time, effort, and contribution.** A foundational principle of participatory activities should be to ‘do no harm’, to ensure that participants are not worse off as a result of participation, including in financial terms. This is key to ensuring that a wider range of people from different backgrounds are empowered to participate.³⁴ In terms of the type of incentives, the National Institute for Health and Care Research advises against underestimating budget for involvement, being flexible, and consulting with participants before on how they would like to receive the recognition for their contribution. Expenses should be paid in advance where possible to eliminate upfront costs to participants.³⁵ Attention should also be paid to the potential impact incentives might have on benefits entitlements or tax implications.

31 Definitions of level of knowledge outlined in evaluation survey included: Explorer (exploring and learning); Generalist (broadly engaged across various relevant areas); Expert (specialised in a particular area, with expertise in the field).

32 Ramos, J et al (2019) Op cit.

33 Oteros Rozas, E et al (2015) Participatory scenario planning in place-based social-ecological research: insights and experiences from 23 case studies [online] *Ecology & Society* 20(4):32. Available at: www.ecologyandsociety.org/vol20/iss4/art32/

34 See, for example: FLEX (2018) *Researching Labour Exploitation: Guide to Research with Hard-to-reach Migrant Workers in the UK*. Available at: www.labourexploitation.org/publications/researching-labour-exploitation-guide-research-hard-reach-migrant-workers-uk

35 NIHR (2022) *Payment guidance for researchers and professionals*. Available at: www.nihr.ac.uk/documents/payment-guidance-for-researchers-and-professionals/27392

3 Scale wide-reaching community engagement activities that are hosted outside of formal workshop contexts (eg local community events and festivals). Our attendance at the Dumfries Agricultural Show was in line with our resolve to follow the principle of 'going where people are' and not always expecting people to enter the spaces of research or engagement activities. There are several other successful examples of participatory futures projects that take this type of 'hacking' community events. One example is the 'market of ideas for the future' developed by the Strategic Design Studio. This was introduced during a Wheat Festival in the French village of Marcoussis, where people could use fictional future currency to vote on a set of preferred ideas of the future.³⁶ In a similar vein to this exercise, our initial voting activity was a way of capturing people's attention and starting a conversation. People seemed drawn in by the very clear and straightforward ask, and usually ended up expanding on the reasoning behind the voting. This provided us with a wider and more diversified range of views on the different changes represented by the driver cards. There is scope to expand and replicate these types of engagement in different community settings, in a relatively low-resource way.

Designing participatory futures

Overall, the workshop received a positive response from the participants. In our evaluation survey we found that, as a result of taking part in the workshop, participants were more informed, having improved their understanding of issues related to the just transition.³⁷ Some participants felt that the driver cards were particularly useful in simplifying some of the complexity of the energy system, illustrating interconnections between different net zero strategies and surfacing a variety of implications that a just transition needs to consider.

Additionally, many participants included positive feedback on the overall type of engagement proposed, having enjoyed the format whilst learning about new perspectives and the current strategies – with some intending to integrate approaches in their own work. For example, one participant suggested that **“the structure of the activities was really useful to get people talking – I might borrow some to engage the community and their ideas”**.

In this context, many participants found the hats particularly important, as it helped them consider different perspectives, with the recognition that **“what you want depends on who you are”**. The use of regenerative perspectives was an new activity that the RSA team had not used in previous workshops. Some participants were able to easily engage with this activity, with one suggesting that **“representing the wildcat, (and in relation to our homes when discussing responsible heating), in my case, better climate will mean fewer droughts, a safer home for us”**. However, other participants found this activity more difficult to engage with due its unusual nature, and, looking forward, we would spend more time testing and refining ahead of future workshops.

36 Gouache, C (2020) Inventing Marcoussis 2038 with citizens. Strategic Design Studios [online] Available at: www.strategicdesignscenarios.net/inventing-marcoussis-2038-with-citizens/

37 78 percent of participants agreed or strongly agreed to having a better understanding of issues related to a changing energy system.

Participants also suggested that they would have liked to have more time to delve into some of the activities, particularly the technical aspects of just transition policies. While others wanted to have the opportunity to feed in their knowledge to build on the local insights captured on the driver cards.

Designing participatory futures: recommendations for just transition planning

- 1 Build in time for ongoing, sustained, and meaningful engagement in communities.** Most participants strongly agreed to wanting to be more involved in the decision making over the energy system in their place as a result of taking part in the workshop. Whilst participants may have felt similarly before the engagement, it emerged from conversations that they viewed the form of engagement and intention of the government in a positive light – many participants highlighted wishing to be engaged in the just transition planning moving forward: **“I would like to hear more and be further involved, both professionally and personally”**. Holding an additional workshop in each place could allow for participants to provide more feedback on some of the specific details of just transition policies or to work collectively through a backcasting exercise that would reflect on changes needed today, and in the short-medium term future, to realise the visions they had collectively imagined during the last exercise. However, engagement should be sustained beyond this with clear routes to influence outputs or decisions in the ESJTP. This is essential in order to build trust in institutions, especially given previously mentioned concerns around prior shallow and extractive engagement.
- 2 Embed regenerative perspectives into participatory futures, by inviting people to think longer term and consider the interdependency of humans, other living beings and ecosystems.** Aligned with the just transition objectives of tackling inequalities and injustice and considering the current changes of climate in natural ecosystems, it is important to encourage ideas that force us to think beyond our generation. It is also crucial to consider the interdependency between positive outcomes for humans and the natural ecosystems of the places in which they live, including wildlife and local landscapes. We started to explore this with participants during our drivers of change activity, but it could be made a more central focus of the workshop. For example, the Council of All Beings is an exercise that invites people to step outside the human identity and speak on behalf of other life forms as a way of creating a sense of solidarity with all life, and an awareness of the damage wrought by the human species.³⁸ And the ‘seventh generation principle’ is a way of thinking that weaves indigenous wisdom in policymaking and leadership to consider the impact that decisions made today can bring to seven generations ahead, in order to encourage more transformative plans for towns and cities.³⁹

38 Work That Reconnects Network (2017) Council of All Beings [online] Available at: workthatreconnects.org/resource/council-of-all-beings/

39 Allen, K (2018) Seventh Generation Thinking – A Replacement for SWOT [blog] Available at: kathleenallen.net/seventh-generation-thinking-a-replacement-for-swot/

3 Experiment with creative approaches such as serious games and immersive experiences in order to facilitate deeper engagement. Previous RSA projects show that these types of activities are used to quickly create a fertile environment for imagination, creativity and out-of-the-box thinking.⁴⁰ Immersive experiences can help build empathy by allowing participants to imagine what it would be like to live in a particular future. For example, Mitigation of Shock is a museum installation developed by Superflux, depicting an apartment from 2050, in order to highlight the consequences of living with climate change and the ways in which our current generation and future generations will need to adapt in their home environment.⁴¹ Different types of serious games exist: some focus on worldbuilding, others simulate real world behaviour, or focus on encouraging collaboration and collective decision making. One benefit of serious games is inclusiveness: the role playing that is involved often serves to erase pre-existing hierarchies between participants. Scottish Government should explore the potential of these approaches. For example, by developing a serious game that is based on the content of the driver cards or creating a public exhibition informed by the artefacts developed during our workshop.

4 Explore ways to open-source tools and resources to support community groups to conduct their own participatory futures workshops. A variety of participatory futures tools are already open-source and are intended to be replicable in different contexts. The Scenario Exploration System is an open-source serious game, and authors just request that users upload a copy of the version they create to the main website. This has not only meant that different groups have been able to tailor the game to their needs and have benefitted from the uses of the game, but that there is now a library of open-source versions of the game that can provide learnings for new potential players and communities. The Thing From The Future is also an open-source tool, that can be modified to suit one's needs. Its author, Stuart Candy, explains that "designing playful systems is – or should be – iterative, so they improve over time as lessons are learned via encounters with different player populations".⁴² Open sourcing could support a wide range of different community and grassroots organisations to conduct their own research that feeds into the ESJTP while also helping to grow their individual capacity and deepen collective understanding of effective approaches to community engagement.

40 Wallace-Stephens, F (2019) The Future Work Archive: an immersive experience for 2035. RSA [blog] 31 October. RSA. Available at: www.thersa.org/blog/2019/10/future-work-archive

41 Superflux (2019) Mitigation of Shock (Singapore) [online] Available at: superflux.in/index.php/work/mitigation-of-shock-singapore/#

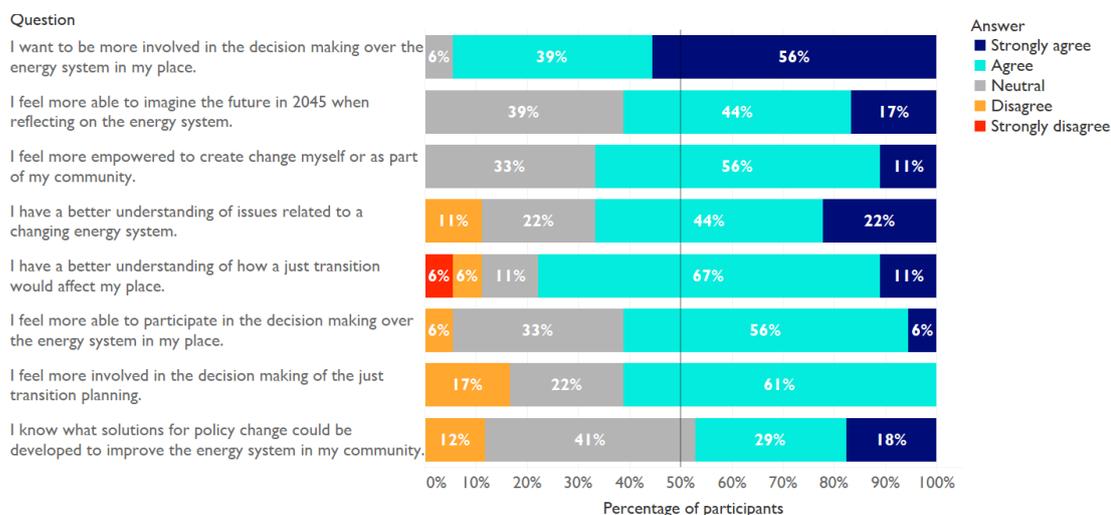
42 Candy, S (2018) Op cit.

Impact evaluation

Participatory futurists have claimed that participatory futures approaches have had profound impacts on individuals, communities and institutions, from shifting people's sense of fear of the future towards a sense of empowerment, to overcoming short-termism and better decision making for building resilience in communities. Nonetheless, rigorous evaluation or longitudinal studies are few and methods for evaluation can be still unclear.⁴³ Whilst our evaluation framework and survey were developed utilising a relatively small budget, the responses suggested that the workshop had a positive impact on participants in several ways.

According to our evaluation survey, participants felt more empowered to create change as part of their community (67 percent agreed or strongly agreed), more able participate in decision making over the energy system in their place (61 percent agreed or strongly agreed), and more involved in decision making (61 percent agreed). Additionally, we observed an increased imaginative capacity with a similar share of participants agreeing that they felt more able to imagine a future energy system in 2045 (61 percent agreed or strongly agreed). Imaginative capacity is considered a significant contributor to people and communities' ability to plan and drive change.⁴⁴ This was coupled with an observed shift in optimism during the creative visioning exercises. As one participant put it: **“there is optimism for a clean green future”**.

Figure 10: Evaluation survey results



⁴³ Ibid.

⁴⁴ Ramos, J et al (2019) Op cit.

Impact evaluation: recommendations for just transition engagement

1 Adopt a wider range of approaches to evaluate the process and impact of engagement.

The advantage of using a range of approaches and tools is that the strengths of one can compensate the weaknesses of another.⁴⁵ Whilst our evaluation survey provided us with data and insights on participants' views at the end of the workshop, we believe that gathering additional qualitative insights through semi-structured interviews or online 'workshop retrospectives', would provide us with a more in-depth understanding of the project's mechanisms of change and impact. Other activities such as the Polak Game⁴⁶ could also be adopted as icebreaker activities during the workshop to provide a baseline assessment of participants' attitudes towards the future before and after a workshop. The Polak Game asks participants to stand on a quadrant that most represents their state of feeling towards the future, whilst discussing with the people around them. With additional time and resource, we would consider testing other designs, to explore in greater depth the contribution of engagement to outcomes observed. This could include a pre-post study with evidence of impact that comes from a survey of the engagement's impact on participants over a period of time for example. Or a post-then-pre design survey collecting data at the end of the workshop asking participants to self-assess what they know and how they felt before and after it. More sustained and ongoing engagement with communities (see earlier recommendation) could also allow for longitudinal evaluation as well as greater involvement from communities in designing and delivering impact evaluation.

2 Collaborate with participatory foresight and regenerative design practitioners to collectively define shared evaluation frameworks.

There is an increased recognition for building individuals' capability to think long term, to imagine and shape desired futures. However, there is also appetite in the field for systematic experimentation and rigorous evaluation to help build the evidence base, which is critical for securing funding. Wide reaching engagement programmes for a just transition will require a complementary field of participatory evaluations to monitor progress, draw learnings and inform strategy for adaptation. To build such a field of partnerships and collaborations with other practitioner networks and other delivery organisations, to define shared outcomes, develop evaluation tools and resources and share learnings, will prove essential. One existing network in this respect is the Citizen Participation Network, which is hosted by the Edinburgh Futures Institute at the University of Edinburgh and includes 600 citizens, researchers, practitioners and policymakers in Scotland and beyond that are working on democratic innovation, deliberative democracy and public engagement.⁴⁷

45 Ibid.

46 Hayward, P and Candy, S (2017) The Polak Game, Or: Where Do You Stand? [PDF] Journal of Futures Studies. Available at: jfsdigital.org/articles-and-essays/2017-2/the-polak-game-or-where-do-you-stand/

47 Citizen Participation Network (2020) About the Citizen Participation Network [website] For more information see: oliversdialogue.wordpress.com/about-the-citizen-participation-network/

Conclusion

Meaningful participation in decision making from communities that will be impacted by the net zero agenda is a critical part of just transition planning. This is considered a key lesson from initiatives around the world, and this research highlights the potential opportunity that participatory futures and regenerative design approaches offer in this context.

These approaches do not provide all the answers, but by building people's understanding of drivers of change and helping to facilitate more inclusive dialogues, they can help policymakers to better incorporate lived experience into decision making processes. We hope that our research findings offer new insight into the opportunities and challenges that rural and post-industrial communities face in relation to the changing energy system. From developing financial and governance mechanisms to ensure that local communities benefit from renewable energy infrastructure, to supporting local agricultural businesses to supply sheep wool for building retrofit, communities are a wellspring of ideas for positive change.

But at a more fundamental level these tools can provide scaffolding to help surface and understand the optimistic and shared 'images of the future'. This is one of the main purposes of futures studies and is important because the images of the future that we hold often serve as the basis for our actions in the present.⁴⁸ Surfacing these images – and mapping pathways towards them – can help to bring about the changes needed at an individual, community and whole-society level to realise a just transition. According to our workshop evaluation survey form, most participants felt more able to imagine what a future energy system could look like in 2045 and felt more empowered to create positive change as part of their community.

We are incredibly grateful for the Scottish Government's openness to explore these approaches with us. Institutional support is not always emphasised as an important criterion for delivering participatory futures work but is critical to ensure that participants are not speaking into a void. We look forward to refining our approaches, by working more closely in partnership with community groups, building in more time for sustained engagement and experimenting with new approaches to facilitation and evaluation – to help establish these approaches as a model for community voice in decision making that can be replicated across Scotland and other parts of the world.

48 Dator, J (2019) Jim Dator: A Noticer in Time [online] Springer International Publishing. Available at: www.springerprofessional.de/en/jim-dator-a-noticer-in-time/17083054?tocPage=1

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